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ECONOMICS OF MILITARY PROCUREMENT

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HEARINGS
BEFORE THE
SUBCOMMITTEE ON ECONOMY IN GOVERNMENT
OF THE
JOINT ECONOMIC COMMITTEE
CONGRESS OF THE UNITED STATES
NINETIETH CONGRESS
SECOND SESSION

PART 1

Proceedings, Nov. 11, 12, 13, 1968 and Jan. 16, 1969

Printed for the use of the Joint Economic Committee

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ECONOMICS OF MILITARY PROCUREMENT

MONDAY, NOVEMBER 11, 1968

CONGRESS OF THE UNITED STATES,
SUBCOMMITTEE ON ECONOMY IN GOVERNMENT
OF THE JOINT ECONOMIC COMMITTEE,
Washington, D.C.

The Subcommittee on Economy in Government met, pursuant to notice, at 10:05 a.m., in room 1202, New Senate Office Building, Hon. William Proxmire (chairman of the subcommittee) presiding.

Present: Senator Proxmire.

Also present: John R. Stark, executive director; and Richard F. Kaufman, economist.

Chairman PROXMIRE. The Subcommittee on Economy in Government of the Joint Economic Committee will convene.

This morning we are going to begin hearings on profits in the defense industry. This is a matter of the greatest concern to the Congress and to the country and certainly to everybody interested in economy in Government, with \$50 billion of procurement a year, \$44 billion by the Defense Department. We have a new President-elect, all of us wish him very well. Many of us are particularly interested in the views of our new President-elect on our defense establishment and procurement generally. We all agree, I am sure, with the new President that we must have a healthy defense industry, we must have adequate profits so that the defense industry can be healthy and can be eager and interested in Government procurement.

At the same time a considerable question, it seems to me, has arisen on the basis of the evidence we have, as to the trend in profits and of the nature of profits, and of the lack of competition in this whole area, and the decline in competition, no matter how competition is defined, which makes it especially important that we do our best to determine what the profits are, if they are excessive, or if, perhaps, in some areas they are not sufficient.

At this point in the record we will include the releases and announcements which have appeared in the press to date.

(Material follows:)

[Oct. 31, 1968]

CONGRESS OF THE UNITED STATES—JOINT ECONOMIC COMMITTEE
SUBCOMMITTEE ON ECONOMY IN GOVERNMENT

Are defense contractors' profits too high?

The Subcommittee on Economy in Government of the Joint Economic Committee will try to answer this question when it resumes its military procurement hearings November 11, 12, and 13, to examine profitability and cost controls in the Pentagon's buying practices and policies.

Senator William Proxmire (D-Wis.), Chairman of the Subcommittee, and Congressman Thomas B. Curtis (R-Mo.), ranking minority member, jointly announced the planned three-day probe. Senator Proxmire is also Chairman of the full Joint Economic Committee.

Senator Proxmire, in a statement from his Washington office, said:

"The Pentagon continues to receive criticism on its buying practices from Members of Congress and others. This year alone, several Congressional Committees revealed disturbing and questionable practices in our procurement program.

"The need for a comprehensive investigation of military procurement has existed for some time. Few economic issues are as significant as the impact of military and military-related procurement on the national economy. Military contracts total \$44 billion a year, and serious waste or inefficiency in this massive program has burdensome consequences for every American."

The Committee will hear testimony on the negotiation process, cost estimation, incentive contracting, and the effectiveness of cost controls, as well as the profitability of military contracts.

Witnesses scheduled to be heard include Elmer B. Staats, Comptroller General of the United States; Lawson B. Knott, Administrator of the General Services Administration; John M. Malloy, Deputy Assistant Secretary of Defense for Procurement; A. E. Fitzgerald, Deputy for Management Systems, Office of the Assistant Secretary of the Air Force; Murray Weidenbaum, Chairman of the Department of Economics, Washington University; Irving Fisher, RAND Corporation; and others. A complete list of the names of witnesses will be released at a later time.

[From the office of Senator Proxmire: Nov. 7, 1968]

Senator William Proxmire (D., Wis.) charged Thursday that military buying practices are sharply reducing competition for government contracts. The result: The heaviest concentration of defense business in a handful of giant corporations since defense became big business.

In a statement from his Washington office, Proxmire, who is Chairman of the Joint Economic Committee said: "We are increasing the monopolization of one of the largest sectors of our economy.

"Small business is being used by the Pentagon as a combination whipping boy and punching bag to absorb whatever declines may occur in the mammoth procurement program from year to year.

"The Department of Defense own figures show a drop in formally advertised competitive military contract awards from a far too small 13.4% of total military procurement in FY 1967 to a pathetic 11.5% in FY 1968.

"The reduction of formally advertised military contracts from an already low level is evidence of the disgraceful neglect of small business by the Pentagon.

"Equally disturbing are the figures relating to the special programs allegedly set aside for small business. Total military procurement for FY 1968 was \$43.8 billion, down somewhat from the year before but still higher than the peak Korean War year of FY 1952.

"The decline, however, hit the small business firms, not the large military contractors. While military procurement went down in FY 1968 by \$877 million, military purchases from small business firms went down by almost the same amount, \$805 million.

"The impact of the decline of contract awards on small business is further indicated in the percentage of small business awards to total awards.

"Small business firms received 18.4% of the value of total military prime contracts awarded in FY 1968, compared with 20.3% in FY 1967, and 21.4% in FY 1966.

"Thus, for the second year in a row awards to small firms have significantly declined.

"Passing along the major portion of procurement declines to small business can be interpreted as a Pentagon protectionist policy for the large contractors, who are already getting more than their share of government work. It is a violation of the intent of Congress that a fair proportion of government business be placed with small business firms.

"The Small Business Act of 1958 declares the policy of Congress that the government insure that a fair proportion of total purchases and contracts be placed with small business enterprises.

"How can we reconcile the decline of small business as a percentage of total awards in 1967 from 1966 with the tremendous increases of military procurement during that period? Why was small business forced last year to absorb virtually the full burden of the reduction of military procurement? Small business had to take \$805 million of the \$877 million decline in military purchases last year!

"The facts that small business awards and competition are both declining with respect to military procurement are closely related. It suggests a long term policy to shut out both competition and independent business. As high military spending and the impact of a large military establishment become rooted in the American system there is a rising threat to a free and independent enterprise economy."

[Nov. 8, 1968]

CONGRESS OF THE UNITED STATES—JOINT ECONOMIC COMMITTEE

SUBCOMMITTEE ON ECONOMY IN GOVERNMENT

Senator William Proxmire (D-Wis.), Chairman of the Joint Economic Committee, announced the names of the witnesses scheduled to testify before the Subcommittee on Economy in Government November 11, 12, and 13 when it resumes its military procurement hearings.

The hearings will examine defense contractors' profits and other factors contributing to the high cost of military procurement.

The list of witnesses follows:

Monday, November 11, 10 a.m., Room 1202, New Senate Office Building, Elmer B. Staats, Comptroller General of the United States; Murray Weidenbaum, Chairman, Department of Economics, Washington University.

Tuesday, November 12, 10 a.m., Room 1202, New Senate Office Building, Lawson B. Knott, Administrator, General Services Administration; John M. Malloy, Deputy Assistant Secretary of Defense for Procurement; William B. Petty, Director, Defense Contracts Audit Agency.

Wednesday, November 13, 10 a.m., Room 1202, New Senate Office Bldg. A. E. Fitzgerald, Deputy for Management Systems, Office of the Assistant Secretary of the Air Force; A. W. Buesking, University of Southern California; Irving N. Fisher, Rand Corporation.

Additional witnesses may be announced at a later time.

Chairman PROXMIRE. I am very happy to have the kind of witnesses we have lined up for these 3 days of hearings and we are particularly fortunate to have as our leadoff witness a man who has done so much in so many areas to bring efficiency and economy throughout our Government, a man who has made a particular study in this area. So our first witness is Elmer Staats, Comptroller General of the United States, together with his staff. Mr. Staats, you go right ahead.

STATEMENT OF HON. ELMER B. STAATS, COMPTROLLER GENERAL OF THE UNITED STATES; ACCOMPANIED BY FRANK H. WEITZEL, ASSISTANT COMPTROLLER GENERAL OF THE UNITED STATES; CHARLES M. BAILEY, DIRECTOR, DEFENSE DIVISION; GREGORY J. AHART, DEPUTY DIRECTOR, CIVIL DIVISION; AND ROBERT F. KELLER, GENERAL COUNSEL, GENERAL ACCOUNTING OFFICE

Mr. STAATS. Thank you, very much.

I think I should first of all recognize for the benefit of those who are not aware of the fact that this is the chairman's birthday, and we would fail in our duty if we didn't wish you a happy birthday, Mr. Chairman.

Chairman PROXMIRE. Thank you, Mr. Staats.

Mr. STAATS. I have with me this morning, Mr. Chairman, a number of our colleagues. Those at the table I should like to introduce, and those others who will be responding to questions will introduce themselves as they respond. To my immediate left is Frank Weitzel, who is the Assistant Comptroller General. To his left, Robert Keller, general counsel. My immediate right, Charles Bailey, who is the director of our Defense Division, and to his right, Gregory Ahart, deputy director of our Civil Division.

I have a fairly long statement, Mr. Chairman. I would like to explain just a bit what we have attempted to do here, which is to, in a sense, bring the subcommittee up to date on a number of matters which have been discussed at earlier hearings or which we think directly are relevant to the subjects of those earlier hearings.

We are covering in this statement activities of the civilian agencies as well as the Defense Department. We have attached some appendixes to our statement, in the interest of brevity, which will contain information on some additional subjects together with some supporting information on the nine topics which we will be discussing briefly in this statement.

With your permission, I would like to read this statement and I hope that you will feel free to interrupt me, Mr. Chairman, at any point along the line.

Chairman PROXMIRE. Fine; it is an excellent statement and, without objection, the appendixes which I presume you will not read will be printed in the record in full. (See p. 34.)

Mr. STAATS. I am pleased to appear before this subcommittee today. My statement will cover certain matters discussed in the November and December 1967 hearings and other significant areas in which we have been recently engaged. These are (1) procurement; (2) uniform cost accounting standards in negotiated defense contracts; (3) Government-owned property furnished to contractors; (4) supply systems; (5) property accountability; (6) cost reduction program; (7) management of automatic data processing systems; (8) accounting system for operations; (9) interagency coordination to improve administration of common activities.

Additional material relating to supply systems, civilian agency construction and other matters, is included in appendixes to this statement.

DECLINE OF COMPETITIVE PROCUREMENT

The departments and agencies of the Government are awarding contracts at the current rate of about \$50 billion a year to procure property and services for use in their programs and activities. The Department of Defense alone is awarding contracts for weapon systems and related equipment and supplies at the rate of about \$43 billion annually. For fiscal year 1968 the Department of Defense reported that advertised procurement averaged 11.5 percent, competitive negotiation 30.6 percent, and single source negotiation 57.9 percent.

Chairman PROXMIRE. You say advertised procurement, you are talking about what has been in the past sometimes referred to as advertised competitive bidding?

Mr. STAATS. That is correct.

Chairman PROXMIRE. Yes.

Mr. STAATS. A comparison of this information with similar information for the previous 4 years shows a downward trend in the use of both formally advertised and competitively negotiated procurement procedures.

Chairman PROXMIRE. Do you have, roughly, an indication now of how sharp that downward trend is, is this one of the lowest figures that you have?

Mr. STAATS. This is covered in appendix 7, Mr. Chairman. If you want to turn to that—

Chairman PROXMIRE. I think this is most important and that is why I call attention to it.

Mr. STAATS. Yes; appendix 7 shows it for a 5-year period.

Chairman PROXMIRE. Appendix 7. So it is the lowest that it has been during the past 5 years. Do you have any record or knowledge—it seems to me to be the lowest figure I have ever seen, 11.5 percent on advertised bidding.

Mr. STAATS. I believe that is correct, Mr. Chairman, in recent years certainly but I do not have the specific figures going back beyond 1965.

Chairman PROXMIRE. And certainly, similarly, this is the highest figure for single source procurement—the 57.9 figure—the highest figure in the 5-year period and the highest that I can recall.

Mr. STAATS. Yes, sir; that is correct.

Chairman PROXMIRE. Now this, let me just at this point say that this trend, this factor, makes it all the more important that we focus as sharply and as clearly as we can on profits because obviously when you have competitive bidding, especially advertised competitive bidding, the profit picture takes care of itself. If a firm makes any profits it is clearly a matter of efficiency. If there is no competition and the profits are high then it seems to me we have a duty in the interest of taxpayers to inquire into the costs and inquire whether the profits are excessive.

Mr. STAATS. We emphasize a little later on in our statement, Mr. Chairman, where we deal with this subject, the importance at least of having the information to formulate the basis for a judgment as to the level of profits.

DECLINE ATTRIBUTED TO VIETNAM WAR

The decline in competitive procurements during the past few years has been attributed to urgent procurements for the Southeast Asia conflict. Statistics relating to competitive and noncompetitive procurement for the last 5 years are summarized in an appendix. In this connection, we believe that statistics on methods of procurement would be more meaningful to the Congress if they were more closely related to amounts or procurement susceptible to use of the particular method of procurement. That is if the Defense Department could segregate those types of procurements that even under optimum conditions would not be subject to formal advertising, the Congress would then be able to better evaluate the extent of procurements made under this method in light of urgency and other factors that may be involved.

On the basis of our recent reviews of single source or noncompetitive procurements we believe that significant progress has been made in improving the quality of contract pricing. We also believe that, generally, Government contracting officers are making a conscientious effort to negotiate fair and reasonable prices. Further, the scope and depth of DOD preaward audits has been improved.

Chairman PROXMIRE. Let me go back just a little bit. In your statement, you speak about urgency being one element in the reason for the pure competitive procurement. Why would it, with the elements that go into the Vietnam war, necessarily affect the procurement and diminish the prospect for competitive procurement?

Mr. STAATS. Well, we indicate here that this is the explanation that has been made for this. I think—

Chairman PROXMIRE. What do they mean by urgency? If they have to get something more swiftly why do they—

Mr. STAATS. It is a matter of delivery schedules, and naturally there is a tendency to deal with the firms that have the most immediate capability in an effort to make the earliest procurement schedule that is available.

Chairman PROXMIRE. Can you give me an example?

Mr. STAATS. Pardon?

Chairman PROXMIRE. Can you give me an example? I just wonder how really significant this is. For one thing the Vietnam war is a smaller proportion of our procurement than the Korean war. Was there a similar sharp drop at the time of the Korean war in competitive procurement? Was it lower than it is here? It seems to me competitive procurement may have been higher than it is now.

Mr. WEITZEL. I don't have the figures, Mr. Chairman, but in a time of military emergency or war it is more likely that there would be urgency factors which would require more noncompetitive procurement. For example, in the case of—

Chairman PROXMIRE. We can say that but I think unless we define what we mean and can provide a clear understanding—

Mr. WEITZEL. May I give you an example?

Chairman PROXMIRE. Yes; I wish you would.

Mr. WEITZEL. Complicated electronic gear, for example, is one area where there are many sole-source providers for the Defense Department and the time which would be required to develop a second source of procurement or additional sources of procurement sometimes, and frequently is, in the opinion of the Department of Defense, too great to permit the time to be spent in this way. In other words, the troops need the equipment, and there isn't time to develop and put into production an additional source.

Now, we have tried to get them on occasion to increase the sources. For example, in electronic equipment, radios and similar equipments, we have pressed the Department of Defense in the past to provide additional sources but we have felt that we shouldn't substitute our judgment as to the urgency of delivery schedules for their judgment. At times they have promised that in the future they will try to increase the number of sources and increase the competition but have pleaded that for this particular procurement they make it noncompetitive, and their decision on this, I think, would be final.

Chairman PROXMIRE. Yes. Let me just interrupt to say there are several difficulties here with that kind of analysis. In the first place the increased procurement for Vietnam, as I understand it, is very largely small arms ammunition. It doesn't have much to do with missiles or electronic gear that is brand new or complicated. Furthermore, the explanation you have of developing a second source would relate more to the so-called negotiation competitive than the advertised competitive procurement. For these reasons, it seems to me, it is hard to explain in terms of Vietnam the justification for this very serious deterioration.

Mr. STAATS. I think one that might be more directly related to the Vietnam requirements is in the area of bombs and ammunition. Mr. Hammond, I think, could go into that for you if you would like, Mr. Chairman. I think that would be a better illustration.

Chairman PROXMIRE. These are conventional bombs. These certainly are not bombs that have nuclear requirements and we are not using nuclear bombs, are we? Aren't we using conventional bombs, types that have been used for some time?

Mr. HAMMOND. They are conventional bombs and a couple of years ago were being procured on a formal advertised basis. It is because of the urgent needs in the last year or so they have been negotiated, sometimes sole source, without taking the time to send out the request for bids to several companies.

Chairman PROXMIRE. Do you feel on the basis of your experience that this can be justified? Can you say that or would you prefer not to say it? After all we have been procuring bombs for a long, long time. We had a debate on the floor of the Senate on the increase in procurement for B-52 bombs—just the bombs themselves, not the planes—and, as I recall, the amount is in the hundreds and hundreds of millions a year. It has increased, but it is not a brand new kind of procurement which should require new methods and an abandonment of competition.

Mr. HAMMOND. I think it is a matter of timing. If your needs become greater for a particular bomb because of a change in how we are fighting the war, then the question is whether or not you have time enough to go out to all the sources and ask for bids and evaluate them and make the awards.

Another factor that is involved also is that most of our bomb manufacturers are pretty well loaded to capacity, and really it is questionable whether you would get real competition even if you formally advertised under those conditions. The question is negotiating with them in some cases to establish additional sources to meet the needs.

Chairman PROXMIRE. Well, I still cannot see why you shouldn't try. Maybe you can't get a better price but it seems to me unlikely you would get a higher price.

Mr. HAMMOND. Certainly if you had more than one source willing to compete and if you have the time it is better to have formal advertising. It is the preferred method.

Chairman PROXMIRE. At any rate, Mr. Staats, you are saying it is hard to come to a conclusion on whether or not this deterioration, this drop, in competitive advertised bidding is justified without having a great deal more information from the Defense Department that they have been able to give you or to give us to date, is that correct?

Mr. STAATS. That is right.

We are reporting here the explanation rather than providing it.

Chairman PROXMIRE. For years the attitude on the part of Congress has been, No. 1, we favor as much competition as possible and, No. 2, when we talk about competition, by and large we are talking about advertised competitive bidding which is now down close to 10 percent, it is a little over 10 percent, but it is far below what it has been before.

Mr. STAATS. Incidentally, Mr. Chairman, I now have the figures on the extent of formally advertised procurement going back to 1951, and the high figure on this was in 1955 when the figure was—I beg your pardon, 1957, it was 17.5 percent.

Chairman PROXMIRE. That was the high figure.

Mr. STAATS. The high figure.

Chairman PROXMIRE. You don't have any figure lower than the figure, than the most recent figure, that we have? You certainly don't in your appendix.

Mr. STAATS. In 1952 the figure was 10.8 percent, that would be during the Korean period.

Chairman PROXMIRE. 1952.

Now, the Korean period was a period in which our professional procurement was substantially greater in Korea than all the other procurement.

Mr. STAATS. That is correct.

Chairman PROXMIRE. In relation to our overall procurement than they are in Vietnam?

POST-AWARD REVIEWS—PUBLIC LAW 90-512

Mr. STAATS. That is correct.

To continue our statement, however, our reviews have indicated that for various reasons pre-award audits alone were not always effective in disclosing cost estimates that were higher than indicated by information available at the time of negotiation. Accordingly, we recommended and the Defense Contract Audit Agency established, a program for regularly scheduled postaward reviews of selected contracts.

On September 25, 1968, the President approved Public Law 90-512, introduced by you and Congressman Minshall, which provides authorized agency representatives the right to examine all data related to the negotiation, pricing, or performance of contracts or subcontracts under which cost or pricing data are required. Also, the Department of Defense issued a Defense procurement circular dated November 30, 1967, which provided for the following:

1. Obtaining for agency officials the right of access to performance cost information.
2. Making postaward audits where contracting officers have reason to believe that cost or pricing data used in negotiations may not have been accurate, current, and complete, or may not have been adequately verified.
3. Obtaining written identification of data submitted by the contractor in support of pricing proposals.

4. Revising the regulations to make it clear that the mere making available of data to the auditors without identification in writing does not constitute submission of data.

Chairman PROXMIRE. May I ask: Is this what you mean when you say the quality as well as scope in depth of procurement has improved?

Mr. STAATS. This is essentially what we are saying.

We believe that these actions are important improvements in the procurement process and with effective implementation should provide needed assurance as to the reliability of cost or pricing data used in contract pricing.

In the future we plan to examine into the reasonableness of prices established for selected contracts as well as review the overall effectiveness of DOD's pricing policies and procedures. We are presently making a study of problems being encountered by agency officials and by contractors in fulfilling the requirements of the current DOD directives and instructions. We believe that every effort should be made to avoid burdensome requirements that are not essential to the negotiation of fair and reasonable prices.

CONTRACTOR PROFITS

In any discussion of profits, we believe it is important to make a clear distinction between *contemplated* profits, sometimes called "going in" profit rates, agreed upon in negotiations and *actual* profit subsequently realized, sometimes called the "going out" rate.

Generally, we have not attempted to evaluate the reasonableness or adequacy of profits which have been agreed upon in negotiations. However, we believe it is important that profits be sufficient to maintain a healthy defense industry and encourage contractors to undertake Government work and provide them with financial incentives to perform in an efficient and economical manner.

In August 1966 we were requested by the chairman of the House Committee on Appropriations to review the administration of the weighted guidelines and to inform the committee whether there had been an increase in the profits agreed upon during negotiations since the advent of this method of computing profit objectives, and, if so, whether the increase was warranted. This study which we concluded in early 1967 related to the negotiated or "going in" profits as distinct from actual profits realized in contract performance.

We reported to the House Committee on Appropriations that a comparison of the average profit rate negotiated in the 5-year period preceding the establishment of the weighted guidelines with the average profit rate negotiated on 200 contracts during the last 6 months of 1966, showed an increase from 7.7 percent to 9.7 percent.

Chairman PROXMIRE. Percent of what?

Mr. STAATS. Of sales.

Chairman PROXMIRE. Of sales?

Mr. STAATS. This would be sales—of costs, I am sorry.

Chairman PROXMIRE. Costs. That means that, of course, the return on invested capital could be far different. There is no relationship to that except that it may well be higher and indications are that it probably was higher.

Mr. STAATS. That is right.

Our review covered more than \$2 billion worth of negotiated procurement. This increase of 2 percentage points in the rate of profit applied to total negotiated procurement subject to the weighted guidelines in fiscal year 1966, could have resulted in negotiation of about \$270 million in additional profit and fee allowances for that fiscal year.

Chairman PROXMIRE. Let me just at this point say that 1966 of course, was a year in which we had a big escalation in Vietnam procurement, is that correct?

Mr. STAATS. That is correct. That was the largest; 1965 and 1966 were the two largest.

Chairman PROXMIRE. Is there any reason, offhand, that you would like to give to explain that enormous increase, because it was an increase of about a quarter—

Mr. STAATS. This related to changes which had been made in the weighted guidelines and we were attempting to make—

Chairman PROXMIRE. Is there a justification in the nature of the procurement that would explain this?

Mr. STAATS. Why the Defense Department changed its weighted guidelines?

Chairman PROXMIRE. No. In the first place you have a larger amount of procurement. Therefore, the larger percentage would mean an increase in profit. I can understand why you might have a decline in the percent of costs that are profits during a period of rising procurement, but this is a rise in the percentage of costs and net profits and I wondered if there is some other explanation, perhaps in greater riskiness of the procurement or something of that kind that would justify this?

Mr. WEITZEL. Mr. Chairman, I think one of the objectives of this effort was to get contractors to assume more risks and to distinguish between the degree of assumption of risk by different contractors. In other words, the greater the risk assumed by the contractor the greater the "going-in" profit rate was visualized.

Now, we found there had been not too much widening in the ranges of profits so to this extent we are not sure whether these weighted guidelines achieved their objectives. But there was a conscious effort to permit greater profits for the assumption of greater risks by the contractors on the theory that this would produce an incentive for them for more efficient performance, and overall would lower the cost of procurements.

Chairman PROXMIRE. But you don't have the evidence to indicate whether this developed or not.

Mr. WEITZEL. We didn't find that there was too much widening of the range of profits. I think it went, the total range we observed went, from about 6 percent on the low side to around 13 percent on the high side, and we weren't sure that the weighted guidelines had really achieved their objectives.

Chairman PROXMIRE. You explain subsequently the weighted guidelines relate to risks and other factors?

Mr. WEITZEL. They do relate to risks, to the contractor's performance, efficiency, to the amount of Government facilities furnished to him proportionately and so forth. This is further on in the statement, I believe.

Mr. STAATS. On the point Mr. Weitzel just referred to, we observed that the objective of widening the profit ranges for the various types of contracts departing from the historical pattern of fees so as to recognize differences in contractors' assumptions of risks, in performance and in complexities of the tasks undertaken had not been achieved. We did not obtain information on realized profits on the contracts we reviewed. All this had to do with the negotiated level of profits entered into.

With respect to the weighted guidelines we believe there is a need to revise the profit factor relating to contractors' investments in facilities and operating capital to be used in the performance of Government contracts. The Logistics Management Institute profit study which I will refer to later, also points out the need for such a revision.

LEASED FACILITIES

The weighted guidelines provide for a reduction in profit or fees of as much as 2 percent, depending on the extent of reliance on Government furnished facilities. Contractors who provide their own facilities receive a zero percentage for this factor—that is, they incur no penalty. However, the weighted guidelines do not distinguish between contractors who purchase their facilities outright and contractors who lease them. The means used by contractors to acquire their facilities could have a significant effect on Government costs. Last month, this matter was the subject of a report we made to the Congress.

Chairman PROXMIRE. On this point let me ask you, is there any attempt to go behind the lease to determine whether it is from an independent, separate entity? It seems to me there would be a temptation on the basis of your explanation for a firm to divest itself of some of its property to an affiliate corporation or an associated corporation of some kind and then to lease that property from the corporation. Have you had an opportunity to study this or have there been any basis for determining whether this could become an abuse?

Mr. STAATS. Yes, we have—

Chairman PROXMIRE. Certainly the incentive is very strong.

Mr. STAATS. Mr. Bailey will respond to that. We have made such a study.

Mr. BAILEY. Mr. Chairman, in connection with our review of facilities contractors used in the performance of their Government contracts, which Mr. Staats will refer to later in his statement, we did look into this aspect at the request of one of your subcommittee members, Mrs. Griffiths, and we could find only one case where the leasing organization had a business relationship, in terms of the same board of directors or an associated company, with the defense contractor who was leasing the facilities.

Mr. STAATS. This is a report we made to Mrs. Griffiths on July 30, Mr. Chairman. I have a copy of it here. With one exception as Mr. Bailey indicates we found no direct relationship of record—

Chairman PROXMIRE. What was that exception?

CADILLAC GAGE COMPANY

Mr. STAATS. This exception. The letter—I will read just one paragraph from the letter:

We found only one case of a parent-subsidiary relationship. The record we examined showed that the Cadillac Gage Company executed a lease—

Chairman PROXMIRE. What company?

Mr. STAATS. Cadillac Gage Co.

Chairman PROXMIRE. Cadillac Gage?

Mr. STAATS. Yes; "executed a lease for the rental of a facility from Ex-Cell-O Corp. on May 1, 1956. Ex-Cell-O Corp. acquired all the outstanding stock of Cadillac Gage Corp. on June 1, 1956."

Chairman PROXMIRE. How large a procurement was involved in this case?

Mr. STAATS. Mr. Chairman, perhaps one of my colleagues has that information here.

Mr. WEITZEL. Mr. Chairman, we would like to call your attention to an Armed Services Procurement Regulation revision of October 1967, which says that rental costs of land, building and equipment and other personal property are allowable if the rates are reasonable in the light of rental costs of comparable facilities and market conditions. However, charges in the nature of rent between plants, divisions, or organizations under common control are allowable to the extent such charges do not exceed the normal costs of ownership such as depreciation, taxes, insurance, and maintenance. Unless otherwise specifically provided in the contract rental costs specified in sale and leaseback agreements incurred by contractors through selling plant facilities to investment organizations and concurrently leasing back the same facilities are allowable only to the extent that such rentals do not exceed the amount which the contractor would have received had he retained legal title to the facilities.

So that looks like an effort to distinguish the ordinary case of a lease of facilities from an entirely independent organization, on the one hand, and intracompany transactions, or interdivisional transactions, and sales or leasebacks on the other, in which case they would limit them to the ownership costs that would have been incurred. Does that answer your question?

Chairman PROXMIRE. Yes; it is very helpful. I am just not sure how effective that is. I see the complications involved, but go ahead.

Mr. STAATS. We do have additional information on this one case, on how much was involved.

Chairman PROXMIRE. I would like to hear it.

Mr. STAATS. On Cadillac Gage?

Chairman PROXMIRE. Yes; on how much was involved.

Mr. STAATS. The estimated cost of facility was \$1,063,000; rental was \$268,000. The additional cost of leasing was \$209,000. It was a 5-year lease.

EXCESS RENTAL COSTS

In the report that I referred to that we have just recently completed on the subject of leasing versus purchase by contractors of land and buildings, we presented our findings on a review of the leasing of land and buildings by 13 major contractors at 16 plant locations where

sales to the Government averaged over 95 percent of their total operations. About 25 percent of the facilities at these locations were rented under 63 leasing agreements for initial periods ranging from 2 to 25 years. Including periods of renewal options the terms of the leases ranged from 8 to 55 years.

We estimated the acquisition cost of the leased facilities to amount to about \$84 million. By the end of the current lease periods, that is, the period for which the contractors are now contractually obligated, the contractors will have paid or obligated themselves to pay, \$108 million in rentals, or about \$24 million more than the acquisition cost of the facilities.

Had the contractors purchased the land and the buildings, the acquisition cost recoverable under Government contracts would have been limited to depreciation. We estimated that depreciation through the current lease periods would amount to about \$38 million, or \$70 million less than the rentals. Based on the present ratio of the contractors' Government business to their total business, the Government's share of the rental costs in excess of depreciation would be about \$67 million.

If all renewal options were exercised the Government's share of the resulting excess rental cost over depreciation would be about \$100 million. At the time of our review of the 63 lease agreements, 23 leases had come up for renewal and were renewed.

Chairman PROXMIRE. This is \$100 million which was on your calculations an additional cost to the Government because the contractor used leased property instead of owned property, is that correct?

Mr. STAATS. That is correct.

Chairman PROXMIRE. How large a proportion of the overall total procurement did this constitute? I am trying to project this, not that you can do this exactly but if you save \$100 million on this kind of operation, is there any conclusion that I can make as to how much of a loss this practice constitutes to the Government overall? Would this be 5, 10, 20 percent?

Mr. HAMMOND. Well, I don't believe that we could make a precise projection, but we could say these companies had Government business of about \$5 billion.

Chairman PROXMIRE. \$5 billion?

Mr. HAMMOND. Yes.

Chairman PROXMIRE. And the defense procurement is about eight times that, or more than eight times that?

Mr. HAMMOND. Yes; annual procurement.

Chairman PROXMIRE. So it would be something under a billion dollars, but it may be \$800 million to a billion if this was typical? It may not be. It may be less; it may be more.

Mr. HAMMOND. This \$5 billion is not the amount of procurement they got during a particular year, it is the amount of procurement they have at the present time.

Chairman PROXMIRE. Then my projection is wrong?

Mr. HAMMOND. Yes.

The top 100 companies have Government business of \$150 billion.

Chairman PROXMIRE. Has Government business of how much?

Mr. HAMMOND. \$150 billion. The top 100 companies are performing contracts in the face value of about \$150 billion.

Chairman PROXMIRE. How many companies?

Mr. HAMMOND. Sixteen companies involved in this review had Government business of about \$5 billion.

Chairman PROXMIRE. So the overall projection would be over a billion dollars.

Mr. HAMMOND. Yes.

Mr. STAATS. Although the armed services procurement regulation recognizes the full amount of rental costs of land and buildings as an allowable charge to Government contracts, it limits the amount for purchased facilities to the ownership costs of the buildings, exclusive of land and interest paid to finance the acquisition.

SALE-LEASEBACK

Chairman PROXMIRE. Let me at this point interrupt you to call your attention to an observation you have in your report to the Congress on October 23, "Increased Expense to the Government of Leasing Rather Than Purchasing Land by Department of Defense Contractors." On page 11 of that report you indicated a contractor whom you simply identified as Contractor I. You say:

In 1957, contractor I purchased a tract of land for \$475,000 on which it constructed a building at a cost of about \$1,183,000. Subsequently, this building and a portion of the land were sold and leased back to the contractor for a 25-year period. In spite of the sale-leaseback arrangement, this contractor was entitled to recover the full amount of its rental costs in accordance with a provision inserted in its major contracts. The estimated acquisition cost of this property at the time of the sale-leaseback was \$1,420,000. Annual rental payments for use of this building were \$103,640 which would amount to about \$2,580,000 over the 25-year period. The lease provided for five renewal options of 5 years each, or an additional 25 percent, for a total lease period of 50 years.

Now, by this kind of an arrangement Contractor I, as contrasted with the contractor holding on to his property, the taxpayer, the Federal Government, was required to pay a great deal more, an increase in this case of well over 100 percent, \$1,183,000 compared to \$2,591,000. In other words, if the contractor had been confined in charging his costs to the full cost of the building—and presumably he wouldn't have been able to charge that much—the full cost of the building would have been \$1,183,000 but instead he got a contract for \$2,580,000, charged that over to the Federal Government, to the taxpayer. Now, it is hard to see that the contractor himself, if he didn't own the company to whom he sold it, it is hard to show or prove that he got any benefit from this. But No. 1, the taxpayer was required to pay more, the Federal Government was required to pay more, and the—somebody—perhaps a relative or friend or his business associate or somebody else, profited from this kind of an arrangement and it would seem to me that this is so encouraging to a contractor to take advantage of this loophole that it could be very costly to the Government.

You just indicated that it is probably over a billion dollars a year, and as was indicated, there is an Armed Forces regulation now attempting to cope with it. It would seem we have to do much more than we have done up to now if we are going to prevent this kind of exploitation.

Mr. STAATS. AS we indicate here, one factor is that land is not recoverable as a contract cost because there is no depreciation factor that you can apply there.

I think our view on this is reflected in our report, whether we should not shift the emphasis around so as to encourage the contractor to purchase his own facility.

Chairman PROXMIRE. So you would have guidelines which permitted a higher profit if he owned it? Do you think this would be an effective way to meet this problem?

Mr. STAATS. We think it would be if we put the incentive on the other side. We think now there is a disincentive and we would like to create the incentive for the contractor to purchase his own equipment which would result in economy to the Government.

There are several other considerations aside from the recoverable costs such as the required initial investment which would influence contractor decisions to lease rather than to purchase facilities. In view of the additional cost which is borne by the Government when contractors lease, however, we believe it is appropriate to consider amending the current profit guidelines to offer a greater profit to contractors who purchase facilities rather than lease them.

DEFENSE PROFITS—NEED FOR STUDY

With respect to actual profits realized, we feel it is important that information on the trends as to profits realized by different industries on various types of contracts be available for study and for use in evaluating the effectiveness of the types of contracts used. In this connection, we know of no complete and comprehensive study that has ever been made on profits actually realized by defense contractors.

Chairman PROXMIRE. I wish you would repeat that sentence. I think it is the most significant sentence that we are likely to have in all these hearings.

Mr. STAATS. We indicate that we know of no complete and comprehensive study that has ever been made on profits actually realized by defense contractors.

Chairman PROXMIRE. In other words, we just don't know what the realized profits of the defense contractors are? We don't know and no study has been made which would tell us?

Mr. STAATS. It is our opinion that we don't have one.

Chairman PROXMIRE. We have a few fragmented studies which show what one firm has made. We have a few studies made in limited areas but we don't know what the final profits are? You haven't made such a study, the Defense Department hasn't made such a study, and no congressional committee has made such a study?

Mr. STAATS. To our knowledge no such information exists. During the past several years limited studies of reported profits realized have been made by the Logistics Management Institute (LMI), and by Dr. Murray Weidenbaum of Washington University of St. Louis. These studies were approached from different viewpoints and the results are neither comparable nor complete; and I think LMI and Dr. Weidenbaum would both agree.

The Department of Defense does not obtain complete information as to profits under firm fixed-price contracts. LMI proposed that con-

sideration be given to obtaining data on negotiated firm fixed-price contract performance costs to evaluate the application of the weighted guidelines to this type of contract. During the fiscal year 1968, firm, fixed-price contracts, both negotiated and advertised, constituted about 53 percent of total expenditure for defense procurements.

As pointed out, Mr. Chairman, in your letter of October 10, 1968, to the Secretary of Defense, any profit review to be effective should include realized profit data on firm fixed-price contracts since this represents such a significant percentage of defense procurement. Your letter also discussed the limitations of the LMI and Weidenbaum studies and specified certain types of information which should be obtained in order to develop a comprehensive and complete study of realized profits. We are in agreement with the views expressed in your letter and believe that they will provide the basis for a more realistic profit study.

COMPETITION IN PROCUREMENT

In our appearance before the subcommittee in May 1967, we discussed competition in civilian agency procurements and cited examples of how more effective competition might have been achieved had formal advertising been used rather than negotiation. We are continuing to review situations where the need for more competition in procurement is indicated, and we believe that our efforts are having an effect.

LIGHT BULBS

We are still finding instances of negotiated procurement by GSA where conditions are favorable to the use of formal advertising. Procurement of light bulbs and tubes, as discussed in our report to the Congress, B-163349, March 20, 1968, is a case in point.

Federal agencies are purchasing annually about \$30 million worth of light bulbs and tubes under negotiated Federal supply schedule contracts. To obtain an indication of the savings that might be achieved by advertising, we compared the prices obtained by GSA for selected items that account for annual purchases of \$13 million with the prices obtained by a State government under advertised contracts. For the selected items, we estimated that savings of at least \$1.7 million, or about 12 percent, could be realized. To the extent that price reductions can be realized through formal advertising for other items, additional savings would result.

GSA has advised us that, in response to our recommendation, formal advertising will be used for the bulk of the Government's light bulb and tube requirements.

INADEQUATE FEDERAL SPECIFICATIONS—BUDGET RESTRICTIONS

Incidentally, we have been informed by GSA that the changeover from negotiated procurements of goods and services to advertised procurements has been delayed in some cases by inadequate Federal specifications. The Administrator has told us that budget restrictions may prevent the allocation of sufficient resources to perform work on additional items so as to permit a change to advertised procurement within desirable time frames.

DECLINE IN GSA COMPETITIVE AWARDS

Chairman PROXMIRE. Now, it is my understanding that GSA, which has had a pretty impressive record—at least I thought it was impressive with advertised competitive bidding—with close to three-fourths of its procurement being advertised competitive bidding, according to one study has suffered a very sharp deterioration in advertised competitive bidding down to substantially less than that. Do you have the figures?

Mr. AHART. Mr. Chairman, if you take the published reports which the General Services Administration puts out, which lump together all forms of procurement by GSA, they do show a substantial drop, I think between the years 1963 and 1965 particularly. But this gets back to one of the points which the Comptroller General made in his statement. These figures really don't give consideration to the types of procurement which are really susceptible to the advertised procurement technique.

Chairman PROXMIRE. That may be, but we are talking about GSA now, and we are not talking about the Defense Department. GSA, by and large, is not fighting the war in Vietnam, and the figures I have before me are that formally advertised competitive bidding in fiscal year 1963 was 73 percent and in fiscal year 1968 was 52 percent—52 percent. Now that is a catastrophic drop, a drop so serious that I think we ought to get a lot harder answer than the notion that this isn't broken down so we can understand the kind of shift that GSA may be undergoing.

Mr. AHART. We haven't made a complete analysis, Mr. Chairman, of the reasons for this specific drop in the figures.

Chairman PROXMIRE. Do you confirm that figure that I have in front of me as that?

Mr. AHART. Those are the figures, the same.

Chairman PROXMIRE. Seventy-three to fifty-two percent?

Mr. AHART. That is correct.

I understand that GSA has made an analysis and has excluded certain aspects of procurement which are not susceptible to the advertised procurement technique and has also excluded the Public Buildings Service contracts which are—in other words, the fluctuation of award of public buildings contracts has a tremendous effect on the total GSA procurement. I understand that this analysis shows it has been a fairly constant percentage over the past number of years.

Chairman PROXMIRE. My staff tells me they are comparing apples and oranges when they show constancy. What they do is knock out some of the areas in which there has not been the competition and then they compare the changed basis for the figures with the old figures which have not been changed and come out with a constant factor. As I understand what you have given here, 73 percent in 1963 for GSA constituted competitive bidding, and 52 percent in 1968 is competitive. No, 2, these figures are comparable. That is, we are comparing the total amount of GSA procurement in 1963 and in 1968.

Mr. AHART. I think that is correct.

Chairman PROXMIRE. Can you say, of your own knowledge, whether or not the figures that they have which show a constancy are comparing precisely similar kinds of procurements in the 2 years?

Mr. AHART. We have not made an exhaustive analysis of their figures, but from what we understand of the principles they have used in bringing these figures together, it results in comparable information from year to year and it does show a fairly constant percentage of advertised procurement within these areas which have been defined as being susceptible to it.

Chairman PROXMIRE. Here in the light bulbs and so forth you showed you can achieve a savings of 12 percent or so by going to advertised competitive bidding.

Mr. AHART. That is correct.

COMPETITION LOWERS COSTS

Chairman PROXMIRE. This is just one isolated area that you investigated, but your experience over the years has indicated that advertised competitive bidding consistently results in lower cost procurement; is that right?

Mr. AHART. I think that is a fair statement, Mr. Chairman. I should point out that the light bulbs and tubes case deals with procurement under the Federal supply schedule contracts which involve procurements mostly by other agencies drawing on the Federal supply schedule contracts, and would not necessarily be included in these figures here which result in these percentages. These are direct GSA procurements here.

Chairman PROXMIRE. I don't want to delay on trivia—I think most people would consider light bulbs a pretty trivial item—but I assume one of the reasons you selected it and highlighted it is because you think it is typical? If this is typical and if they are procuring less by advertised competitive bidding it suggests that the taxpayer is suffering.

Mr. WEITZEL. Mr. Chairman, I think maybe we should qualify this statement that we have consistently found that advertised competitive bidding produces more economical prices. We have made a report to the Congress pointing out that in some cases advertised competitive bidding does not produce lower prices because the subject of the procurement is not one that is suitable for advertised competitive bidding. In other words, if you are buying a complicated naval vessel, it is not suitable for advertised competitive procurement, and trying to subject it to this process may actually increase the costs.

Chairman PROXMIRE. Yes, I think we all agree with that. I can't think of any instances in which any procurement agency has gone to advertise competitive bidding; maybe one or two, but I can't think of any where they have gone to advertise competitive bidding where it obviously doesn't work because there aren't a sufficient number of suppliers.

TIRES

Mr. WEITZEL. In the case of GSA we brought to your attention the procurement of tires and it has been found that substantial economies could be achieved in the purchase of tires by having more competitive procurement in that area.

Chairman PROXMIRE. And certainly the examples that you give are so patent and so obvious you would think that anybody would recognize immediately that light bulbs and tires and these kinds of things

that are standard items that are purchased by consumers as well as by the Government are the sort of thing which you can procure on an advertised basis? It is incredible that the Government would not use an advertised competitive bid basis in those areas.

Mr. STAATS. I think the point we are making here is that as a part of our overall efforts in the procurement field we want to challenge and test every case that we can as to whether an item is susceptible to competitive advertised procurement. We are saying that one of the ways you do this is to develop better specifications, and we cite this as one example of a fairly common item; 12 percent saving, though, on \$30 million is still worth making.

PROPANE—KINCHELOE AIR FORCE BASE

In another matter concerning GSA procurement, we found that adequate steps had not been taken to foster competition among possible suppliers of propane to the Kincheloe Air Force Base. We discussed with GSA officials various means by which competition might be encouraged among propane suppliers, primarily through tailoring contract terms to bring them in line with industry practices and with the specific needs of the using activity. GSA contract terms were revamped and Kincheloe's fiscal year 1968 propane requirements were formally advertised. The price obtained was 27 percent lower than the previous negotiated price, representing a reduction of about \$144,000. The Administrator of General Services said that it was likely that on the 1969 contract they will save even more.

PROCUREMENT DIRECT FROM SUPPLIERS

We also found instances where savings could have been achieved through procurement direct from suppliers rather than through prime contractors.

As an example, two contracts we reviewed showed that FAA which had a policy of procuring electronic test equipment for its air navigation and air traffic control systems as part of its contracts for basic systems, paid a total of about \$539,000 for test equipment which the contractors for basic systems purchased for about \$419,000. FAA has now revised its policy to permit in appropriate circumstances the breakout of test equipment, spare parts, and so forth, from proposed basic contracts.

In another case we found that at NASA's Kennedy Space Center in Florida, security guard and fire protection were being provided through subcontracts under a support service prime contract. Our review showed that the Space Center was maintaining operational control over the subcontracted services and it appeared to us that it would be less costly for the Center to contract directly for these services. We suggested that NASA look into the matter which it is now doing as part of a larger study of support service costs at the Space Center. I might say, Mr. Chairman, that we are not selecting here anything more than illustrations of principle or procedure which we think applied across-the-board might have large consequences in terms of savings. Many of these items, particularly on the GSA side, the civilian side, if you take a specific isolated case, the savings are not dramatic but if you applied this across-the-board in other situa-

tions where it might apply, the savings could be much more substantial.

Chairman PROXMIRE. In general, you think there is a great deal of room here for reducing costs, and reducing the procurement costs?

Mr. STAATS. We are not implying that the agency in this case did not share our objectives at all. This is not the point we are making. The point we are making is that we, as an outside agency representing the Congress, have the right and the opportunity and the obligation to test these operational situations.

Chairman PROXMIRE. But at the same time your conclusion, as I take it from your last remark, is that whereas these are examples that, as you say, would save substantial amounts, that they are examples. They are examples and you think this is rather common in the GSA and Defense procurement practices and that to the extent that it is you feel that it should be corrected and it can save a great deal of money?

Mr. STAATS. It certainly has the potential.

Chairman PROXMIRE. But you are not saying you have made comprehensive studies.

Mr. STAATS. That is correct.

Chairman PROXMIRE. You are not saying this is the only area where you can make a savings.

Mr. STAATS. Right.

UNIFORM COST ACCOUNTING STANDARDS IN NEGOTIATED DEFENSE CONTRACTS

Turning now to a different subject, Mr. Chairman, this has to do with the subject of uniform cost accounting standards in negotiated defense contracts.

As you know, the Defense Production Act of 1950 was amended earlier this year to provide that the Comptroller General undertake a study to determine the feasibility of applying uniform cost accounting standards to be used in all negotiated prime contract and sub-contract procurements by the Department of Defense in excess of \$100,000.

In keeping with the provision of the law, I have appointed a special assistant to devote full time to the project until it is completed. Also, we have formed a coordinating committee composed of representatives of our office, the Department of Defense, and the Bureau of the Budget. Further, we have, as the law provides, had consultations with representatives of nine national accounting and industrial associations. With few exceptions, all of these associations are participating, in some manner, in the feasibility study. In addition, special consultants are making conceptual studies on cost accounting standards.

As part of our endeavor, we expect to elicit from industrial firms—several hundred Government contractors and firms performing no Government work—information on cost accounting methods and practices. This will be done through the use of a questionnaire which we are presently developing.

The draft questionnaire will be submitted for comment to participating trade associations, professional accounting organizations, and the coordinating committee. Upon receipt of their replies, we plan to make a limited test of the practicability of the questionnaire by sub-

mitting it to a few industrial organizations. Before I approve the questionnaire, Mr. Chairman, we plan to meet with either you or members of your subcommittee staff to discuss the current status of our study, and to review the questionnaire with you.

Chairman PROXMIRE. Let me say I think this is enormously important. Admiral Rickover indicated that he thinks this is the most important area in which we can save procurement funds, in other words, we can reduce costs.

I am delighted to see you are proceeding with vigor. And when you look over the people with whom you are going to consult here I think you have taken proper precautions to see that the Bureau of the Budget, Defense Department, GSA, the various accounting firms all have a voice in this so you will adopt no so-called standards that would work an abuse on either the accounting profession or the contractors.

At the time we held hearings before the Banking Committee earlier this year, these people came and testified and, of course, they are all for the status quo, by and large, with the exception of very few people like Admiral Rickover and some of the mavericks in the accounting industry, so it is going to be very, very difficult and tough for you, it would seem to me, to achieve uniform accounting standards although we need them urgently. After all, 89 percent of procurements now are not on an advertised competitive basis. In other words, if we don't have the costs accurately on some kind of a uniform basis there is no way in which we can determine what the fair price to the Government is, because, contractors can select fast or slow depreciation writeoff methods, they can select various inventory valuation methods which can raise or lower profits in a given year. They can decide to expend over a current year or several years such items as R. & D., maintenance and repair costs. So, given the thousands upon thousands of defense contracts, unless there is some kind of uniform accounting standards we are going to be in a position where even if we should have some kind of a comprehensive study of contractors profits I am not sure we are going to be able to determine that they are accurate or that they give a picture of the equities to the taxpayer.

Mr. STAATS. I would like to emphasize one point, Mr. Chairman. As you indicate this is a matter of very major import for not only the defense contract industry but also if changes are made there it could well have implications well beyond that. So it is a matter that deserves the most careful review and one which I am sure you agree is a matter in which all of the organizations, many of whom have struggled with this problem for a long time, need to be participants and consultants. We are doing that.

Chairman PROXMIRE. I hope we can bring Admiral Rickover into this; I haven't talked to him about this.

Mr. STAATS. We have.

Chairman PROXMIRE. But I hope he would have a chance to take a look at this questionnaire.

Mr. STAATS. He will.

Chairman PROXMIRE. As well as one or two of the brilliant and outstanding representatives of the accounting industry who testified in favor of the uniform accounting standards.

Mr. STAATS. Yes, we are consulting with all of those who have testified and all those who have expressed interest as well as the associations. We want this to be a fair study. We want it to be carefully done and we think it very important that all of the organizations involved know how we are doing it and, therefore, they will understand and, hopefully, support what we come out with when we are finished.

GOVERNMENT-OWNED PROPERTY FURNISHED TO CONTRACTORS

During the period following the hearings before the subcommittee in November and December 1967, the Department of Defense has taken a number of actions designed to implement its announced policy to divest itself to the maximum practicable extent of its large inventory of Government-owned production equipment now located in contractor-owned facilities. Most of these actions can be directly associated with specific recommendations of this subcommittee and the House Appropriations Committee. Also, the actions are generally in line with the principal objectives of the legislation you introduced, Mr. Chairman, on March 8, 1968, S. 3122.

Instructions published in Defense Procurement Circular 61, June 10, 1968, require that maximum reliance be placed on the use of privately owned production equipment in connection with the performance of defense contracts. The authority to acquire or provide production equipment for contractors has been restricted to very limited circumstances. Equipment having a unit cost of less than \$1,000 can no longer be furnished to contractors for any purpose. The procurement circular also increases the monthly rental rate for equipment less than 3 years old. With respect to equipment that is modernized or replaced by the Government, a requirement has been placed in the Armed Service Procurement Regulation for a contract clause under which the contractor would agree to return to the Government the net savings actually realized from the use of modernized or replaced equipment. DOD has been conducting a test at 20 contractors' plants to study the feasibility of maintaining records of equipment utilization on a machine-by-machine basis. The results of the test are expected later this month. Also, the DOD reconciliation program to bring contractor-held inventories in line with records maintained at the Defense Industrial Plant Equipment Center is nearing completion.

The DOD actions discussed above deal primarily with equipment furnished to contractors to increase their production capacity to meet urgent military needs.

There is also another program under which the DOD has furnished equipment to contractors to modernize or replace previously provided Government-owned equipment, but under different and less restrictive criteria. On September 30, 1968, in Defense Procurement Circular 63, the policy of the Department of Defense relating to facilities made available under this program was revised to require basically the same criteria for furnishing facilities for expansion, replacement, and modernization as those now applied to facilities initially furnished as essential for performance of contracts for urgent military needs.

After sufficient time has elapsed, we plan to evaluate the effectiveness of the actions taken by DOD. Also, as recommended in your April 1968 report, we are continuing to investigate the adequacy of controls,

including those applicable to property held under contract with agencies other than DOD.

Chairman PROXMIRE. As you recall, the hearings that we had late last year indicated that there were a number of very, very serious problems in regard to contractors' possession and use of Government-owned equipment. We found that it not only was a situation in which there was very poor inventory on the part of the Government, they didn't know what their inventory was, who owned it, where it was. They were using different methods, startlingly different methods, starkly different methods, to determine how much to charge for this equipment. This equipment was being used for private commercial purposes very extensively without adequate rentals in many, many cases and we had a whole series of specific firms involved that you made your excellent study on.

INCREASE OF INDUSTRIAL PRODUCTION EQUIPMENT

Can you tell us whether the inventory of Government-owned equipment in the hands of contractors has gone down or up for fiscal year 1968, and what it is, to the extent that you have it.

Mr. BELL. My name is Hassell Bell. I am an Associate Director of the Defense Division of the General Accounting Office.

I don't believe that there is any information available at the moment that would give you an indication that there has been a substantial decrease in the amount of Government—

Chairman PROXMIRE. Has there been a decrease?

Mr. BELL. I believe the latest information I have seen from the Department of Defense would show that the amount of industrial plant equipment in the hands of contractors has increased about a hundred million dollars.

Chairman PROXMIRE. Has decreased by a hundred million dollars?

Mr. BELL. Increased.

Chairman PROXMIRE. Gone up. Making progress in the wrong direction.

Mr. BELL. Actually, the largest source of additions to the amounts of equipment being held in contractors' plants in recent years, Mr. Chairman, has come through the modernization program which was the last thing to which the Comptroller General addressed himself. The Defense Procurement Circular 63, dated September 30, now has changed the ground rules under which the equipment located in contractor plants would be modernized. It is our understanding, that the rules now will require about the same criteria for modernizing equipment as for furnishing equipment originally. Therefore, the Department of Defense has announced publicly that it believes that the Government's investment in this type of equipment will start going down and they will follow a fairly accelerated program—I don't know how rapidly. I don't have any information on that.

Chairman PROXMIRE. At any rate, the only information you have is that it's going up; it hasn't gone down, but gone up. You do think it hasn't had time as yet for the new regulations to take effect and you are confident that it will begin to diminish.

Mr. BELL. I believe so, yes, sir.

Mr. BAILEY. Mr. Chairman, in that connection, the circular prescribing the new rules is only a little over a month old at the present time.

Chairman PROXMIRE. All right. It is a month old. That means October 15. When we have hearings a little later on next year, we will be very interested to see what kind of progress we have been making in this.

Can you very briefly summarize the steps that DOD has taken to divest itself of this large inventory?

Mr. BELL. Well, there has been a number of negotiations that are going on between the Government and contractors, to sell some of the equipment in place to the contractors. There are some fairly large negotiations underway.

Chairman PROXMIRE. Would you want to provide for the record several examples of the substantial negotiations going on now to divest contractors, or rather, divest the Government of the property they own in the hands of the contractors?

Mr. BELL. Yes, sir; we can do that.

(The following was subsequently supplied:)

EXAMPLES OF NEGOTIATIONS INTENDED TO DIVEST THE GOVERNMENT OF PROPERTY IT OWNS IN THE HANDS OF CONTRACTORS

The following examples of action taken by the Department of Defense to divest itself of Government owned property are furnished. In each case, the General Services Administration is negotiating the sale of the DOD property with the contractor.

Aluminum Company of America: The machinery and equipment is located in the contractor's plants at Massena, New York, Cleveland, Ohio and Vernon, California. Property consists of 3 large forging presses and related personal property with an acquisition cost of \$4,055,899. Closing of the sale is awaiting anti-trust clearance by the Department of Justice.

TRW Incorporated, Cleveland Ohio: The property consists of machinery and equipment with an acquisition value of \$52,610,620 and the property is located in the contractor's plant. Final determinations have not been made by the Air Force concerning the restrictions which will apply to the sale of this property.

Harvey Aluminum, Torrance, Calif.: The property consists of machinery and equipment with acquisition costs of \$38,434,846. The equipment is located in the contractors' plant. Negotiations for the sale of this property began November 6, 1968 with the contractor.

Kropp Forge Company, Chicago, Ill.: Property consists of machinery and equipment located in company owned plant. Machinery and equipment has an acquisition value of \$6,400,288. Negotiations delayed because differences in opinion of value of the property have not been resolved.

Air Force Plant #27, Toledo, Ohio: The contractor operator of this facility is Continental Aviation and Engineering Corporation. The property consists of 79.4 acres of land with eleven buildings with an acquisition cost of \$9,411,000. Related personal property used in connection with construction of aircraft engines and components has an acquisition value of \$11,126,425. Continental is interested in purchasing the facilities, however, there has been no agreement as to price.

Chairman PROXMIRE. Fine. Those are the two steps.

Mr. BELL. Well, one other I have to mention which I believe the Department of Defense will mention, the modernization program, has been running at a level of around \$50 million a year. I understand that the modernization program in the year coming up has been reduced by something like \$29 million, which is a little more than half of what its general average has been.

EXPERIENCE UNDER NEW REGULATIONS

Chairman PROXMIRE. Thank you, sir.

What has been the Defense Department's experience under the new regulations in these Government-owned facilities last year, have they been able to provide a more uniform system, for example, for charging rentals? As I recall, we had one example where there was no charge at all for a very substantial important piece of equipment; another where DOD charged 1 percent, another 2 percent, and still another 3 percent of sales, no consistency, and what's been the experience now?

Mr. BELL. The Department of Defense has been making quite a concerted study of the method by which the interest of or the fees from this equipment have been collected. One of the major areas that seems to be involved here, Mr. Chairman, is the basis on which the rentals are collected for use of the equipment on Government property which is used in commercial work.

The Department of Defense and the military agencies have been using approximately the same basis on which overhead is allocated. Overhead is allocated over a wide variety of bases. This is part of the thing that is included in the standard accounting practice. This matter is up for discussion now but it has not been resolved, and it is difficult to speak at the moment as to what its ultimate effect will be.

There has been, as Mr. Staats mentioned, an increase in rentals which the Government charges for equipment that has been in place at the contractors' plants, about double, as I recall.

Chairman PROXMIRE. Very good. Thank you, sir. We will get further details from the Defense Department.

SUPPLY SYSTEMS AND SUPPLY MANAGEMENT

REVIEW OF THE SUPPLY SYSTEM IN THE FAR EAST

Mr. STAATS. Turning to the next point in relation to work we have done in the area of supply system and supply management, in the November 1967 hearings we discussed the work which the GAO had done with respect to responsiveness of the military supply systems to increased demands generated by the Southeast Asia conflict. We included information about certain aspects of the Army's supply system in Vietnam which we were then reviewing. Subsequently, in our report to the Congress (B-160763, June 21, 1968), on the "Need To Improve Management of Army Supplies in Vietnam," we expressed the opinion that the Army supply system had been responsive to the combat needs of the military units in Vietnam, but that the high level of support had been achieved through costly and inefficient supply procedures.

Selected reviews conducted subsequent to the above efforts, and observations recently made by members of our staff during visits to the Far East indicate that there is still a need for much improvement in efficiency and economy in the military supply system. We believe a significant problem continues to be the lack of reliable data on which to base supply decisions.

ARMY SUPPLIES IN VIETNAM

During our review of the management of Army supplies in Vietnam from September 1967 through December 1967, we also concluded that the identification and prompt redistribution of large quantities of excess materials in Vietnam warranted additional management attention. Subsequently, we learned that the Pacific Utilization and Redistribution Agency (PURA) was established by the Secretary of Defense on November 24, 1967.

PURA, which is located at Okinawa, is responsible for obtaining monthly lists of excesses from all services and for circulating these lists to all service installations in the Pacific area for screening. Materials which are not redistributed in the Pacific area are to be reported to appropriate inventory control points in the United States for further screening. I might add here, Mr. Chairman, that the results to date resulted in savings of something more than \$80 million as a result of this redistribution.

In view of the supply problems, such as (1) the substantial numbers of items out of stock, (2) erroneous stockage levels, (3) lack of effective management data, and (4) use of apparently excessive numbers of high priority requisitions, which still appear to exist in the Far East, we plan to make a follow-on review beginning late in fiscal year 1969. We plan to examine more fully into the causes of current supply problems to better identify actions required at each level of command to accomplish significant long-range improvement.

GSA EXPORT SALES

In a separate but related area, we reviewed GSA's effectiveness as the primary source of supply for a broad range of common-use supplies and equipment items essential to the overseas efforts of the Department of Defense and the Agency for International Development. GSA's export sales to overseas customers now exceed \$300 million per year.

GSA's region 9, headquartered in San Francisco, was selected for our review because it is the largest GSA export region and is a major supply point for military and civilian customers in Southeast Asia.

We traced a sample of 6,400 requisitions through all regional and depot processing phases, and found that region 9 filled only 12 percent of the sample requisitions within the time standards specified by the overseas requisitioners. Based on our findings, we concluded that region 9's low effectiveness was due to the fact that operations were not geared to meet overseas customers' demands, which had increased significantly in recent years because of the Southeast Asia conflict. We further concluded that there was a need to (1) revise certain operating policies and procedures; (2) improve the management information system; (3) exercise management controls over the use of high priority requisitions; and (4) evaluate the supply source processing time standards. Accordingly, we made eight specific recommendations for major improvements in the areas mentioned above. GSA has taken or is moving toward taking actions in line with our recommendations and its performance reports show a marked improvement in the on-time effectiveness of its export supply operations.

DOD TRANSPORTATION AND TRAFFIC MANAGEMENT

We also reviewed transportation and traffic management activities of DOD in the Far East and Southeast Asia. We found that the difficulties which caused significant delays in the delivery of supplies to Vietnam from the United States and intratheater supply sources during the earlier military buildup had been greatly alleviated. We noted that the military transportation organizations responsible for the actual sea and airlift of supplies to Southeast Asia were generally responsive to the demands and needs of the individual military services.

MILITARY CARGO SPACE

We did find, however, that space on aircraft of the Military Airlift Command was not being fully utilized. We estimate that during the period July 1, 1965, through October 31, 1966, there was sufficient unused space on aircraft to accommodate about 21 million pounds of additional cargo from Travis Air Force Base. Although critically needed and paid for, cargo space valued at about \$15 million was not used.

Chairman PROXMIRE. Can you put this in perspective so we understand what this means in the amount available. Does this mean that there was about a 20-percent vacancy, 25, 30, 40, 50 percent, what was it?

Mr. STAATS. I am afraid we will have to supply that for the record, Mr. Chairman.

Chairman PROXMIRE. All right. Can you tell me, this seems quite shocking just offhand, but again I don't want to be unfair and it may well be that there is such an enormous amount of cargo shipped that even a \$15 million lack of use would be a low percentage.

Mr. STAATS. Percentagewise, this would be a fairly small percentage, but still it is worth doing.

Chairman PROXMIRE. Yes, indeed.

How widespread is this practice, failing to utilize available space?

Mr. STAATS. I don't think—

Chairman PROXMIRE. Do you have any information on that?

Mr. STAATS. I don't think we could indicate.

Mr. CONNOR. I am Henry Connor with our Transportation Division. This report is confined to the practices at Travis Air Force Base, which was the primary out-going aerial port for Southeast Asia.

Chairman PROXMIRE. I see. Do you have any knowledge of what this would constitute in terms of unused space, percentage?

Mr. CONNOR. Percentage, no, sir. I have been trying to find that and I don't have that. But we can furnish that, I am sure, for the record.

Chairman PROXMIRE. Perhaps, before the Comptroller General finishes, we can have that.

Mr. CONNOR. Yes, sir.

(The GAO subsequently furnished the following:)

GAO's review of the utilization of airlift capacity by the Military Airlift Command was restricted to cargo moving out of Travis Air Force Base via commercial aircraft on regularly scheduled flights (designated as channel traffic) and cargo moving out on special assignment airlift missions. This traffic represented approximately 16% of the total cargo moved by MAC as channel traffic and 31% of the total cargo moved by MAC as special mission airlift during the same period. The following is a summary of the results of the review.

CATEGORY OF TRAVIS AFB AIRLIFT TESTED

	Estimated capacity ¹			Percent of available capacity lost
	Available	Utilized	Lost	
Channel traffic via commercial aircraft.....	122.7	106.0	16.7	13.6
Special mission traffic.....	35.7	31.1	4.6	12.9
Total.....	158.4	137.1	21.3	13.4

¹ In millions of pounds.

Mr. STAATS. We brought our findings to the attention of the Secretary of Defense and made recommendations which we felt would improve aircraft utilization. We also reported this matter to the Congress in May 1968 (B-157476). As a result of the actions subsequently taken by the Secretary of Defense, we believe savings in excess of \$7 million will be realized over the next 12 months.

We also identified numerous other areas that we feel offer opportunities for significant savings. These areas include: (1) the possibility of reducing port handling costs on surface shipments destined to Clark Air Force Base, Philippines; (2) the reduction of excessive airlift between Japan and Korea; (3) the need to establish a satellite printing plant in Vietnam; (4) the possibility of transporting printed matter to Southeast Asia by less costly mode; and (5) the need for better estimates of airlift requirements.

So much for the Far East. We would now like to briefly bring you up to date on the significant developments in other supply reviews since we last appeared before this subcommittee.

Chairman PROXMIRE. Fine. You may continue.

At this point, having previously examined your submitted statement, I think it is a very fine statement.

COST-REDUCTION PROGRAM

Mr. STAATS. Mr. Chairman. As I indicated at the outset, we were, in effect, supplying the committee a progress report here today on a number of matters. I would like to call your attention to page 23 of our statement, which has to do with our work in the area of cost reduction generally, and I mention this particularly because this is the Subcommittee on Economy in Government.

This is a decision pretty much we have reached since our last appearance here and I simply wanted to note that we believe that the GAO and the Congress have a direct interest in the effectiveness of the executive branch cost-reduction program generally. This is now a program not only in the Defense Department, but has been formally promulgated by the President of the United States as applying to the Government as a whole, and it is our intention to follow up in this area with the thought that this is a matter of concern to the Congress.

We expect to be submitting a report in the spring to the Congress, which will embrace our work in the Defense Department, Agriculture, Interior, GSA, and AID. We have already completed the part relating to the Defense Department and we are working on these other agencies.

ARMY LOGISTICS STRUCTURE

First, in May and November 1967, we discussed with you certain problems involving the Army's logistics structure. We stated that we had proposed that the Army establish a comprehensive reporting system designed to furnish Army Materiel Command inventory managers with worldwide asset data. At that time, the Army Materiel Command had control of stocks only in U.S. depots. Inventory managers who were responsible for procurement redistribution, disposal and maintenance actions had little or no knowledge of assets outside U.S. depots.

Subsequent to the 1967 hearings, the Army has taken certain measures designed to improve its supply system. In May 1968, it put into effect a program whereby the Army Materiel Command would assume control of approximately 1,700 high-value secondary items located in overseas depots. The Army plans, in March 1969, to evaluate the program to determine whether it should be expanded to include additional items. We are of the opinion that this action should provide inventory managers with current and complete data on certain items so that better choices between available alternatives such as procurement, rebuild or redistribution can be made.

In addition, the Army has various other programs underway that are designed to effect improvements in its overall supply structure. Some of these programs are (1) a standard data processing system for national inventory control points in the United States, (2) a standard data processing system for inventory control by Army areas in the United States, and (3) a standard data processing system for the field units. Also, the Army is in the process of reorganizing its logistics structure in Europe. We intend to follow developments in this area, and to evaluate in future reviews the effectiveness of actions taken by the Army.

INVENTORY CONTROLS

Second, in November 1967, the subcommittee expressed interest in the causes and solutions of the frequent and voluminous adjustments required to bring stock records into agreement with actual quantities on hand, as disclosed in our report on improved inventory controls needed for the Departments of the Army, Navy and Air Force, and the Defense Supply Agency (B-146828, dated November 14, 1967). Our review indicated that one of the primary causes of stock inaccuracies was a breakdown in the control over processing receipts and establishing warehouse locator records.

We subsequently initiated a detailed review into the policies, procedures, and practices used by the military services and the Defense Supply Agency relative to the receipt and storage of material and into the processing of related transaction documents affecting the inventory records. As a result of this review, we have concluded that the military departments and the Defense Supply Agency could achieve improved stock record accuracy and supply efficiencies through improvements and standardizations in the policies, procedures, and controls relative to the processing, storage, and recording of materiel receipts. We have identified certain control features and procedures

which, in our opinion, if applied consistently at all depot and inventory control activities, will improve stock record accuracy.

Further, an inventory study group, composed of representatives from each of the military services, the Defense Supply Agency and the Logistics Management Institute was chartered in December 1967, in response to a recommendation in our November 1967 report on improved inventory controls needed within DOD and the interest expressed in this report by the Joint Economic Committee. The objective of the study group was to find solutions to inventory control problems cited in our report and to make recommendations that will correct the conditions uniformly throughout the Department of Defense.

The findings, conclusions, and recommendations of the DOD study group were published in April 1968 in a report entitled "Report of the Department of Defense Special Study Group on Inventory Controls." This report contains over 50 recommendations for improvement of inventory accuracy and increased supply responsiveness which, when implemented, will provide a basis for significantly improving the management and control of the large inventories maintained by the Department of Defense.

SAVINGS AVAILABLE TO THE GOVERNMENT THROUGH ELIMINATION OF DUPLICATE INVENTORIES

And last, in the area of supply management, we reported to the Congress in B-146828, dated May 16, 1968, that Navy wholesale inventories and similar GSA stocks held for Navy use unnecessarily duplicated each other. This practice which results in duplicate management and warehousing functions in the Government supply system as a whole, does not extend to the Army and the Air Force, and arose because the Navy did not believe it would be feasible for ships and overseas bases to submit requisitions for GSA items direct to GSA bases. We stated that the "wholesale level" stocking of the same items by both the Navy and GSA was not, in our opinion, consistent with supply management economy and effectiveness and we concluded that inventories valued at \$8.5 million as of December 31, 1966, and associated management and warehousing functions could be eliminated from either the Navy's or GSA's wholesale stocks. We also concluded that, to the extent the duplication of stock could be eliminated, the Government would realize not only increased efficiencies in stock management and distribution of material but also annual recurring savings of up to \$940,000.

Officials of both DOD and GSA recognize that duplications exist in the current Navy system and have indicated a readiness to participate fully in the joint efforts that will be required to correct the situation. We therefore recommended that the Secretary of Defense and the GSA Administrator jointly establish a working group to formulate the policies and procedures to eliminate the duplicative levels of stock. We recognize that there are many factors to consider, such as Navy requisitioning procedures and the location of certain stock. At a later date, we plan to evaluate the effectiveness of the actions taken.

PROPERTY ACCOUNTABILITY

In a very important area—that of property accounting—we found instances where NASA's accounting control over equipment and material essential to its activities had been inadequate.

For example, we found that NASA's recorded equipment inventory of \$274 million applicable to the Goddard Space Flight Center and its tracking data acquisition installations throughout the world did not, as late as September 1967, include equipment worth \$9.3 million located at a tracking station at Goldstone, Calif., which became operational in January 1967. Further, Goddard, at the time of our review had not taken action to locate 1,277 items of equipment valued at about \$1.7 million that had been listed as missing at Goddard and at 13 other locations as of March 31, 1967. We noted also that the NASA internal auditors had brought the need for better control of equipment to the attention of officials several years before.

NASA agreed with our recommendations concerning equipment accountability and is actively working toward their full implementation.

In a case where a contractor was doing work on the Saturn/Apollo program, his material accountability was faulty and NASA did not take the necessary measures to effect improvements. As a result of our work, orders for at least \$300,000 in material were canceled because it was shown that the material was already on hand. Also, NASA agreed with our suggestions for improvements in its procedures and practices for ensuring the adequacy of contractor property control systems.

COST REDUCTION PROGRAM

An area of special interest to us is the President's cost reduction program. In March of this year, I sent a letter to the heads of departments and selected agencies to express our interest in this program and inform them of our plans to review, on a selected basis, the following aspects:

Status of implementation of the cost reduction program.

Criteria for measuring savings, including reasonableness, application of prescribed criteria, and consistency among and within the agencies in applying the criteria.

Criteria and procedures for measuring changes in productivity.

Responsibility and procedures for validation of savings and improvements reported, including testing of savings reported.

Procedures for dissemination of useful information regarding cost reduction programs, especially concerning those practices and techniques which are susceptible to wide use in Government.

We are currently reviewing the cost reduction programs in the Department of Defense, Department of Agriculture, Department of Interior, General Services Administration, and Agency for International Development. We plan to issue an overall report to the Congress on the results of our reviews in the spring of next year. We are discussing and bringing to the attention of agency officials areas in which the program can be improved during the course of our audits in order that immediate improvements can be made.

We are maintaining close liaison with the President's Advisory Council on Cost Reduction and the Bureau of the Budget in efforts to achieve our common objective—to strengthen and improve the program—especially in view of the continuous increase in the scope and cost of Federal Government activities. To assist the departments and agencies in achieving effective internal review programs, we prepared for their consideration minimal standards for the audit or verification of reported savings under the President's cost reduction program.

In view of the significance and long-range nature of the President's cost reduction and management improvement programs, we plan to continue work in this area as found necessary in the circumstances.

MANAGEMENT OF AUTOMATIC DATA PROCESSING SYSTEMS

During the last several years, hundreds of millions of dollars have been spent by the Department of Defense in the development and acquisition of automatic data processing systems in support of Defense Department management operations. This past winter, at the request of the House Committee on Appropriations, we reviewed the practices of DOD components in acquiring and installing new ADP equipment for use in computerized management systems. The results of that review, and information developed by the committee in subsequent hearings, indicated that the degree of control over the planning, development, and installation of the equipment for these systems varies widely. Our study showed that there was a general lack of coordination and planning within and among the services and/or defense agencies relating to the adaptability of the various management systems to one another and that the Office of the Secretary of Defense had permitted the services and defense agencies to develop management systems unilaterally and independently.

Our review disclosed further that, in general, these ADP systems were designed and installed largely without first making thorough studies of the operating function they were to serve.

Following the report on our review and the intensive consideration given this subject by the above committee, all of the services' secretariats established planning and review groups for the better management of these systems. In its report on the Defense appropriation bill, 1969, the committee summed up its comments by stating:

Although pleased with the effort that is being put forth in the review and control of these management systems, the Committee believes that until such time as these newly established offices have had an opportunity to review the various systems now in existence and those being planned for the future, expansion of all systems should be held in abeyance.

The enormous growth in the number of computers now in use by Federal agencies carries with it a greatly increased cost of maintenance. As a rule, most agencies have routinely obtained maintenance services from the equipment manufacturers with little attention given to establishing an in-house capability for this maintenance.

Following our recent study of the maintenance practices of the Federal agencies, we concluded in our report, B-115369, April 3, 1968, that there is need for more management attention and policy guidance toward ascertaining the most efficient, effective, and economical methods of maintaining Government-owned computers. Subsequently, we have been advised that in response to our recommendations, the Bureau

of the Budget is taking steps to amend its Circular A-54 to insure that agencies give appropriate consideration to the use of in-house maintenance. Also, the General Services Administration has accelerated its study to identify the optimum alternative means, in terms of cost, for maintenance of ADP equipment and, in addition, it plans to issue a Federal Property Management Regulation containing some initial interim guidelines to assist agencies in their evaluation of alternative means of maintenance. These guidelines will cover the factors brought out in our report.

ACCOUNTING SYSTEM FOR OPERATIONS

As you know, the Department of Defense has had under development for some time, a revised system for internal budgeting and accounting for operations of the Active Forces. It has been developed to meet certain fundamental management requirements and to correct the most important deficiencies in the existing system. Basically the system attempts to create greater visibility of the total expense of operations.

Implementation of this system began this fiscal year. Our present effort is to assist the Department of Defense in the implementation of this new internal budgeting and accounting system for operations and includes survey and assistance work at 45 selected sites in the military services and the defense agencies through our regional offices and overseas branches. In addition to our regional office work, members of the Washington staff are participating in the Department of Defense survey team which is staffed by personnel from the Office of the Assistant Secretary of Defense (Comptroller), the Bureau of the Budget, the General Accounting Office, and the military services. Further information on the new DOD accounting system is furnished in an appendix. (See p. 39.)

INTERAGENCY COORDINATION TO IMPROVE ADMINISTRATION OF COMMON ACTIVITIES

At the May 1967 hearings, we discussed the benefits of closer coordination between agencies and presented examples of opportunities for savings in situations where the program of one agency could be modified so that it would also serve the needs of another.

We reported to the Congress in B-162902, January 10, 1968, on another such case. We found that in 1963 DOD and NASA entered into an agreement that photographic capabilities of the Air Force Eastern Test Range and those at NASA's Kennedy Space Center would be coordinated so as to avoid or minimize duplication. Capabilities at each installation are furnished by separate contractors.

Despite the agreement in 1963, NASA began in 1964 to expand its capabilities and in a large sense to duplicate services already existing at the Air Force Eastern Test Range. We made a review of the matter of duplication, particularly the utilization of personnel and equipment by the separate contractors. We concluded that the separate operations could be consolidated with more economy and more efficient utilization of personnel and equipment.

At our suggestion, a joint study group looked into the matter and we have been informed that a consolidation plan was proposed that, if

implemented, could reduce costs by \$1.4 million annually, decrease current staffing, and reduce equipment level of the two installations by \$1.6 million. The consolidation using a single contractor is scheduled to be in full effect by January 1, 1969.

We also made a study of the freight shipment consolidation procedures and practices of several Government military and civil agencies, and a representative number of commercial firms. The study was made to determine whether it would be feasible for military and civil agencies of the Government to cooperatively initiate, manage, and use a Government-wide system of freight shipment consolidation based on commercial practices, and whether such a system would result in significant savings and other benefits to the agencies without interfering with their normal service requirements.

Our proposed report to Congress, submitted to the Department of Defense and the General Services Administration in draft form on August 12, 1968, shows that commercial firms, through membership in nonprofit shipper associations, are saving substantial sums of money and, in addition, are receiving other benefits such as faster transit times by consolidating small, individual shipments. We believe that the Government will realize savings of many millions of dollars annually in freight costs when a comparable Government-wide freight consolidation system is established.

In its response, the Department of Defense not only agreed with our findings, but is currently initiating a test of a prototype system for consolidation of small shipments originating in the area of Philadelphia, Pa. Currently, GSA has agreed to maintain liaison with the Department of Defense on its test and to apply whatever techniques may be appropriate.

The favorable reaction of the Department of Defense and the General Services Administration to our proposal, and the testing of the system by the Department of Defense, is most gratifying. However, we believe that, to fully realize the envisioned benefits, the establishment of a single joint agency will eventually be necessary for the implementation of a Government-wide freight consolidation system. Accordingly, we plan to work closely with the appropriate agencies toward establishing such a system.

This concludes our statement, Mr. Chairman, and we will be pleased to discuss any of these matters in further detail or answer any questions the subcommittee may have on our statement.

(Appendixes to statement of Comptroller General of the United States before the Subcommittee on Economy in Government of the Joint Economic Committee follow:)

APPENDIX I: DESIGN AND CONSTRUCTION

In previous hearings we have discussed our audit efforts in the civilian agency construction area and have commented on some of the recommendations and benefits resulting from our reviews. We generally find that agency management is receptive to our suggestions; nevertheless we continue to note instances where contracts were not administered adequately or where agency planning was such that desired results were not fully achieved.

Specifically, we found that the VA in administering construction contracts for new hospitals in Memphis, Tennessee, Long Beach, California, and in the District of Columbia, did not always have adequate assurance that material and workmanship were as specified. Under such conditions there is always the risk of structural deterioration and of higher than normal maintenance and repair

costs. Poor design and workmanship were apparently responsible for additional costs of about \$42,000 incurred for reconstruction of deteriorated roadways at the hospital project in the District of Columbia shortly after construction ended. Other defects, however, may not manifest themselves for some time.

The VA has advised us in response to our recommendations, that a number of steps have been taken to improve its administration of construction contracts including revisions to its specifications relating to the construction of hospital roadways.

We have also found deficiencies in agency planning for its facilities. For example, the GSA's stated policy that Federal buildings be designed so as to be functionally efficient was not effectively implemented in respect of the recently constructed Washington National Records Center in Suitland, Maryland. Here it was necessary to spend about \$224,000 to reposition some overhead duct work, lighting fixtures and fire protection sprinklers to gain storage space that should have been designed into the building. In addition, storage space was reduced by 94,000 cubic feet because of the design for placing ventilating fans and related duct work. GSA has informed us that its design criteria is being revised and that specific instructions are being developed concerning the review of proposed designs to insure that they are responsive to occupant needs.

In some of its construction projects, the VA did not adequately review architect-engineer drawings and specifications before awarding the contracts with the result that many changes became necessary during the construction period. These changes were accomplished through added work at negotiated prices. We were not able to measure the overall cost effect of these changes; however, it is fundamental that such changes do not have the benefit of competitive bidding as would have been the case had the need for the changes been detected before award of the contracts when the costs could have been included in the lump-sum contract price. The VA has established definitive written procedures, as we recommended, for the various aspects of the review of architect-engineer work.

Because of increasing mail volumes and changing transportation patterns, the Post Office Department is continually developing new facilities and seeking to improve methods of receiving, sorting and transporting mail. We noted, however, that planning for new facilities was not always properly coordinated with changes in mail handling systems. In some newly completed facilities we observed that changes made in the mechanized mail handling systems while the buildings were being constructed resulted in additional costs and in substantial delays in use of the facilities. Our review of some facilities under construction, designed for large mechanized mail handling systems, showed that while the Department's planning was improved, more improvement is yet needed to avoid additional costs and delays in future projects and to ensure the provision of facilities having mail-processing capacities commensurate with future needs. We believe that the Department needs to

- establish, for each proposed new facility, operating plans and concepts which clearly define the changes that can be expected to occur when approved nationwide mail distribution plans are implemented;
- develop a sound system for predicting future mail volumes;
- increase the depth and scope of predesign studies; and
- expedite the program of standardizing mechanization and developing specific criteria for mail-handling equipment.

At the hearings in May 1967, we stated that we had recommended to the Department of the Interior that it make a study to determine the full extent of the differences in transmission line construction practices of the Bureau of Reclamation and the Bonneville Power Administration to determine the degree of construction coordination necessary and practicable, and adopt more uniform construction practices where possible.

Subsequent reviews by our staff have shown that such a study was not made and that although there had been some improvements, greater coordination in transmission-line design and construction practices was needed. We noted in one instance that estimated costs for adjoining transmission-line sections of comparable length but under separate Bureau and Administration responsibility differed by about \$3.7 million.

In accordance with our further proposals a task force was appointed by the Assistant Secretary—Water and Power Development—chaired by a member of his immediate staff to study agency practices and inconsistencies and recommend affirmative improvement policies.

The Bureau of Indian Affairs in planning for construction of employee housing units at school facilities did not adequately consider the availability of nearby private housing. As a result, of the 274 units built, 220 units costing about \$3.2 million were not justified. We also found that of 478 employee housing units constructed in isolated areas, 130 units costing about \$1.8 million were excess to the Bureau's housing requirements for school employees. The excess construction occurred primarily because the Bureau had not administered its employee housing construction program in accordance with the policies and standards established by the Bureau of the Budget for construction of Government-owned housing.

We were advised by the Department of the Interior that the problem brought into focus by our report underscored a fundamental need for more precise planning in determining the Bureau's employee housing requirements and that action had been taken toward this end.

In one district of the Corps of Engineers, we found that adequate reviews were not being made of estimates prepared by architect-engineer firms of expected quantities of excavation, embankment, or available construction materials. As it turned out the estimates which were used in the awarding of a fixed-price construction contract were faulty and the contract price of \$15.4 million was increased through negotiation by \$8.2 million. We believe that had the original estimates been more accurate about \$5.3 million of the increase could have been included in the contract award price with the Government receiving the benefit of competitive bidding.

The Department of the Army concurred, in general, in our findings and has issued instructions which if effectively implemented should reduce the necessity for contract modifications.

APPENDIX II: INCREMENTAL FUNDING PRACTICES

In our recent report to the Congress (B-164301, August 27, 1968) we stated that, during fiscal years 1966 and 1967, the Air Force Air Materiel Areas received funds for spare parts procurements in numerous increments without advance notice of the amounts and the dates the funds would be made available. While some supply problems were due to the fact that funds made available were less than those needed to satisfy computed requirements, the receipt of funds on an incremental basis created additional difficulties in the management of procurement programs in that:

- Procurements were made in less than economical quantities.
- Increased administrative costs were incurred.
- Contractors' quotations were revised upward due to delays in placing orders.

At the time of our examination, there was also evidence that some of the aircraft were not operationally ready because needed supplies had not been obtained. While supply support was generally adequate during the period covered by our examination, we believed that continuation of incremental funding could have resulted in an increased number of aircraft being not operationally ready.

During fiscal years 1966 and 1967, the Department of Defense released funds to the military departments on an incremental basis primarily to hold back a reserve for unforeseen emergency requirements in connection with rapidly expanding activities in Southeast Asia. Also, there existed some uncertainty as to the amount of additional funds that would become available through supplemental appropriations. In fiscal year 1968 the Air Force realized both a reduction in the number of fund allocations and an improvement in providing timely notices to the Air Materiel Areas of dates and amounts of such allocations. We were also advised that similar improvements were realized by the Army and the Navy.

In our report we noted that conditions similar to those that existed in 1966 and 1967 could recur—i.e., rapidly increasing needs to meet expanding programs coupled with uncertainty as to probable levels of funding that will be available—and could again necessitate close fund control and incremental releases. In this event, we recommended that careful consideration be given by the Department of Defense and the military services to the additional costs and other adverse effects of incremental fund releases and that every effort be made to keep incremental releases to a minimum. We recommended also that as much specific information as possible be furnished to inventory management activities as to the amount of funds that will be available and a schedule of probable release dates, in order to facilitate planning of their procurement programs.

APPENDIX III: NEED FOR IMPROVEMENT IN THE PROCESSING OF REQUISITIONS FOR MATERIALS

In our report to the Congress on September 17, 1968 (B-164500) we stated that the implementation of the Military Standard Requisitioning and Issue Procedures (MILSTRIP) system has resulted in improvements in the processing of requisitions and related documents by requiring the use of standardized data codes, data elements, and document formats and by permitting extensive utilization of high speed data processing equipment. We found, however, that the maximum benefits of this system had not been realized because large numbers of requisitions contained erroneous or incompatible data and could not be processed routinely. As a result, many of the requisitions were being returned to the originators for additional information or for revision and resubmission as corrected requisitions.

We also found that the Defense Supply Agency, which had been assigned the responsibility for surveillance of the MILSTRIP system, had not fully carried out this responsibility. In our opinion, the Defense Supply Agency, through surveillance of the operation of the system on a systematic basis, could have identified the problems and directed that appropriate corrective actions be taken on a timely basis.

In connection with the November 1967 hearings, we furnished this Subcommittee with information as to the status of our review of the MILSTRIP system. We subsequently brought our findings to the attention of the Secretary of Defense in a draft report and proposed that the Secretary give the Defense Supply Agency, or some organizational element within the Office of the Secretary of Defense, the responsibility for effecting improved management control and adequate surveillance over the MILSTRIP system. In this connection we suggested that a single organization be responsible for (1) reviewing procedures and operations and requiring that changes be made as necessary to improve operations, (2) ensuring that changes to the MILSTRIP system are uniformly implemented by the military services and the Defense Supply Agency, and (3) requiring, as appropriate, instruction and indoctrination for supply management personnel. Also, we suggested that catalog changes deemed essential to logistics management be disseminated in such a manner that the information at all levels would be compatible.

In commenting on our proposals, in a letter dated May 3, 1968, the Assistant Secretary of Defense (Installations and Logistics) stated that the Defense Supply Agency had recently organized a separate surveillance group to perform frequent on-site reviews of operations, assess adequacy of training, and make recommendations for systems and training improvements. He also stated that, in regard to catalog changes, a study was being made of the requirement for, and the frequency of, logistics management data changes.

We believe that the actions taken or to be taken should result in improvement, We plan to evaluate the effectiveness of these actions at a later time.

APPENDIX IV: OPERATION FRELOC

During 1967 and 1968 we examined into various aspects of the movement of American Forces from France—Operation FRELOC. In May 1967 we issued a preliminary classified report entitled "Report on Survey of the Movement of American Forces from France," which summarized our observations based on limited work to that date. On August 7, 1968, we issued our summary report (B-161507) to the Congress on Movement of American Forces from France—(Operation FRELOC) which supplemented our previous report and summarized our overall findings with respect to Operation FRELOC.

We found that, despite the relatively short period of time available and the magnitude of the move from France, the Army and Air Force were able to relocate their personnel, supplies, and equipment in a generally effective manner. As could be expected in a situation of this nature, many difficulties arose, some of which could have been avoided by better planning and some of which were directly related to basic problems that existed prior to the move.

In our opinion, some difficulties encountered by the Army and Air Force were due to the fact that the Secretary of Defense did not approve the selection of storage and Air Force base locations until relatively late dates. The Department of Defense officials advised us that these decisions had been delayed because of problems associated with gold flow, relations with foreign governments, and the need to formulate new lines of logistical support for U.S. Forces in Europe.

The most significant problem areas that we encountered during our review were:

- Control was lost over large quantities of supplies and equipment moved from France. Inaccurate inventory records contributed to the inability of the Army and Air Force to maintain proper controls over shipments.
- Supplies were shipped to locations with inadequate storage space while, at the same time, available storage facilities were not fully utilized.
- Requirements for construction of additional ammunition storage facilities were not properly evaluated and were therefore overstated.
- Some of the fixtures and personal property removed from former French bases were not effectively utilized.
- Some usable personal property was not removed from French bases.

APPENDIX V: MANAGEMENT OF SHELF-LIFE ITEMS

In its May 1966 report, the Subcommittee on Federal Procurement and Regulation, of the Joint Economic Committee, expressed concern that previously reported (B-150417, dated April 2, 1965) weaknesses in the management of shelf-life items may be indicative of inadequacies in the management of stores inventories. As a result, the Subcommittee requested that GAO review some classes of shelf-life items. At about that time, the Assistant Secretary of Defense, Installation and Logistics, issued uniform policies and procedures for identification, control and utilization of shelf-life items (DODI 4140.27, dated November 18, 1966). In order to give the military departments and the Defense Supply Agency time to implement these procedures, the Office of the Assistant Secretary of Defense (I&L) requested that GAO suspend any reviews of shelf-life items for at least one year.

DEPARTMENT OF DEFENSE

Although the new procedures anticipated implementation within 120 days from the date of issuance, a limited review conducted by GAO in October 1967 indicated that the new procedures would not be fully implemented until July 1, 1968. We found that extensive revisions to existing regulations and data systems were necessary. We also found that a reporting system had not as yet been established whereby shelf-life assets excess to the needs of DOD could be reported to GSA. In view of the foregoing, we did not schedule this area for review.

On June 30, 1968, we were advised by OASD (I&L) that those portions of the subject DOD shelf-life instruction dealing with improved identification and control of shelf-life items were implemented by the military services and DSA on February 1968. We were further advised that the instructions had been amended to provide (1) standardized codes for shelf-life items specifying type of inspection/test/restorative action to be taken and the extension of shelf-life time period after test/restorative action has been accomplished, and (2) a new system for reporting potential excesses of DOD shelf-life assets to GSA. The amended instruction was issued on September 12, 1968, and requires issuance of departmental instructions for implementation within 120 days. The instruction requires DSA to report quarterly to ASD (I&L) on the dollar value and line items of shelf-life items reported for utilization, and the dollar value and line items transferred, donated or disposed of.

It is anticipated in view of the recent amendment to subject instruction that the first quarterly report will not be received by ASD (I&L) until December 1968.

GENERAL SERVICES ADMINISTRATION

In April 1967, GSA added a subpart to the Federal Property Management Regulations which prescribed policies and procedures to be followed by civil agencies for the identification, designation of useful life, and establishment of controls to minimize losses and insure maximum use of limited shelf-life stock. At about the same time, GSA issued to its regional offices parallel instructions regarding its own internal operations.

To test GSA's operations under its new internal instructions we selected for review paint and related items and visited four regions. Concurrently, GSA was working to improve its operations.

Our review disclosed that there were several problem areas. On this basis we made a number of proposals to GSA—which they substantially accepted. Acting on our proposals and on the findings of their own internal review process, GSA has undertaken to revise its management information system to provide for reporting quantity, value, and trend of deterioration losses so that problem areas

can be identified and dealt with. Also, GSA has planned actions to ensure that its regions comply with regulations and instructions aimed at improving the management of limited shelf-life stocks.

APPENDIX VI: ACCOUNTING AND REPORTING SYSTEM FOR DISPOSAL ACTIVITIES

During the past fiscal year, we examined into selected aspects of the accounting by the Department of Defense (DOD) for surplus sales proceeds and reimbursable disposal expenses. Our examination was directed primarily toward determining (1) the progress being made to provide adequate cost data through uniform accounting classifications for expenses, and (2) the nature of Defense-wide management controls over disposal operations.

We had previously examined into selected transactions relating to the disposal of excess and surplus personal property by DOD during fiscal year 1965 at the request of Congressman Thomas B. Curtis of this Committee and reported our finding to him in March 1966.

In general, DOD has authorized the military services to utilize surplus sales proceeds to offset disposal expenses. The implementing instructions of the military services were not always uniform in identifying the types of expenses which were reimbursable from surplus sales proceeds. Also, the lack of effective direction and control of the surplus property disposal program and the accounting and reporting thereof, resulted in management officials not being provided with adequate information to properly appraise the various disposal functions and to identify conditions warranting corrective action. The availability of reliable management data is particularly important in this program where there is no limitation on the amount of disposal sales proceeds that can be used to finance disposal operations.

Our latest review indicated that steps have been taken to correct the deficiencies identified during our prior review. The Assistant Secretary of Defense (Comptroller) issued an instruction (effective July 1, 1968) designed to provide the needed uniformity in the definitions of disposal expenses. The Defense Supply Agency, which is responsible for administering the defense disposal program, has indicated that the instruction will provide information for preparing more realistic reports depicting program status and trends and will enable that organization to more realistically evaluate the disposal program.

APPENDIX VII

COMPETITION IN MILITARY PROCUREMENT, FISCAL YEARS 1964-68

Fiscal year	Total procurement (billions)	Formally advertised (percent)	Negotiated (percent)		Total
			Multiple sources solicited (competitive procedure)	Single source solicited (non-competitive procedure)	
1964.....	\$28.2	14.4	30.7	54.9	85.6
1965.....	27.4	17.6	31.1	51.3	82.4
1966.....	37.2	14.2	35.8	50.0	85.8
1967.....	43.4	13.4	34.1	52.5	86.6
1968.....	42.8	11.5	30.6	57.9	88.5

Source: "Military Prime Contract Awards and Subcontract Payments or Commitments, Office of the Secretary of Defense, Fiscal Years 1964-68."

APPENDIX VIII: ACCOUNTING SYSTEM FOR OPERATIONS (DEPARTMENT OF DEFENSE)

In accordance with the responsibilities placed upon us by the committee of conference on H.R. 17734, Second Supplemental Appropriations Bill, 1968, we are collaborating with the Department of Defense in the implementation of its new accounting system for operations.

We are participating at 45 selected sites of the Army, Navy, Air Force, Marine Corps, and Defense Supply Agency in the implementation of the new system and surveying its operation. At each site our staff is reviewing one or more of the following segments of implementation:

Budget formulation and execution
 Administrative control of operating budgets
 Accounting
 Service units
 Reporting

Problems identified in the implementation of the system are dealt with by suggested improvements at the site if such problems have only local significance. If problems or improved methods have system-wide significance, they are referred to our Washington staff so they may be considered at other sites and other services and, in addition, such problems are discussed with appropriate officials of the military services and the Department of Defense.

Assistance in implementation of the new accounting system is also being rendered at various sites by the several internal audit agencies of the Department of Defense. We are coordinating with these agencies both centrally and at individual locations so that we may avoid unnecessary duplication of effort and so that we may freely exchange information to assist implementation.

In addition to the above we are furnishing members of our Washington staff to serve on the Department of Defense survey team. This team is headed up by representatives from the Office of the Assistant Secretary of Defense (Comptroller) and includes representatives of the Bureau of the Budget, the General Accounting Office, and the military services.

This team, which was established by the Assistant Secretary of Defense (Comptroller) with concurrence of participating agencies, was designed to provide a means to:

- a. Focus attention on implementation of the system
- b. Keep responsible officers fully informed of progress of implementation
- c. Identify ideas and innovations that will improve the system
- d. Get necessary corrections in the systems made promptly.

The team has completed visits to the headquarters of the military services and the Defense Supply Agency along with proximate installations and to selected installations in the Northeastern United States. Two reports have been issued to date on these visits. The reports identify problems and areas for follow-up.

At present the team is visiting selected installations in the central United States. Subsequent visits are planned at selected installations in Europe, Pacific and Alaska, Southeastern United States, Western United States, and the Southern Area (Canal Zone, Puerto Rico, etc.).

Representatives of the General Accounting Office participate in the team visits, offer suggestions, and make contributions in the writing and editing of the team reports. We also plan to follow-up on actions taken to resolve problems revealed by the visits and to disseminate innovations to improve the system implementation.

DEFENSE PROFITS STUDY

Chairman PROXMIRE. Mr. Staats, since we believe that one of the most significant statements you have made here today, as we declared earlier when you made it, was when you referred to the lack of comprehensive complete study of the realized contractor profits, what would you think of having the GAO, you, the Comptroller General, conduct a study of this?

MR. STAATS. We would recommend as an alternative, Mr. Chairman, that this might better be done by an agency perhaps outside of government. There ought not to be any concern on the part of contractors that we are interested in whether or not they have earned too much on a particular contract. I think the point we would make is that as spelled out in the letter that you sent to the Secretary of Defense that we ought to have more knowledge of the level of profits on various types of contracts and various phases of contracts, R. & D., production, and so on, as a guide to the procuring agencies as to whether or not their procurement methods are adequate, as to whether or not we

are getting adequate competition. This is the kind of information that we should have available in the Government.

Chairman PROXMIRE. You see, your agency is peculiarly equipped for many, many reasons, and has a special kind of authority because you represent the Congress. It would seem to me that you could make this kind of a study. While your studies have been useful to us in highlighting specific areas of waste and in correcting them, this overall comprehensive picture of what the realized profit level is just hasn't been done, and it is this comprehensive picture that we need. If we try to provide for a private agency to do it, there may be considerable problems involved, especially now. We have a Democratic Congress, a Republican President about to be inaugurated, and ordinarily we have many difficulties in getting anything through the Congress of the United States—House and Senate—under any circumstances. You are equipped to do the study, your function is to oversee this sort of thing. You have a very good, able, and substantial staff. I would think you could do it more expertly and economically than any other group.

Mr. STAATS. We, of course, want to assure all of the contractors that any time that our efforts are directed primarily to contract administration and to, more particularly, even to the way in which procuring agencies exercise their responsibilities, this does not reflect on our side any concern one way or the other as to whether profits are too high or too low. We feel that this is—

Chairman PROXMIRE. I think that is correct and I don't think there is any reason why your report has to indicate that. I think what your report should do is determine what they are, and then it is up to Members of the Congress and the public and others, the President, to determine whether he thinks they are too high or too low. Unless we have the facts, it seems to me it is very, very hard for us to make any intelligent conclusions and take any really constructive action.

Mr. WEITZEL. Mr. Chairman, such a study would involve necessarily the collection of a great deal of information about the contractors' inner workings and financial management and their profits, some of which we do not have access to now. I am not saying that we couldn't get it, but I do feel the contractors would be more reluctant to give the General Accounting Office or any Government agency some of the information that would be involved. The confidentiality of this type information might be better able to be preserved if some independent agency did the study and made summary findings available rather than the individual facts on each contractor's operations.

I am not saying that is an insurmountable problem. But we have found that there is reluctance on the part of contractors to give some of this information to a Government agency.

Chairman PROXMIRE. Don't you think there would be a lot of reluctance if a private agency—after all, you have an act, the Truth in Negotiations Act, which says for the purpose of evaluating the accuracy, completeness and currency of cost or pricing data required to be submitted by this subsection, any authorized representative or the head of the agency who is an employee of the U.S. Government shall have the right, after expiration of 3 years after the final payment of contractor or subcontractor to examine all books, records, documents, or other data of the contractor or subcontractor related to the negotiation, pricing, or performance of the contractor or subcontractor. You have that right to do it by law which we set up.

Mr. WEITZEL. This only goes to negotiated contracts or those as to which cost or pricing information is required.

Chairman PROXMIRE. If we set up a Hoover Commission-type agency, which is not a Government agency but a private agency, it seems to me they don't have the force or the authority you have.

Mr. WEITZEL. This goes only to negotiated contracts though, Mr. Chairman, and this gives the agency of the Government, Mr. Chairman, the same authority that the General Accounting Office has under the Armed Services Procurement Act and the Federal Property and Administrative Services Act, so we have recommended that all types of contracts including advertised competitively awarded fixed price contracts be covered by any such survey. If there was an advertised competitive fixed price contract, ordinarily the General Accounting Office wouldn't have any authority to go back of that contract price and examine into the profits that the contractor made in the performance of the contract. This would extend the usual scope of the General Accounting Office audits as a Government agency.

Chairman PROXMIRE. Well now, let me just conclude by saying this: That I think we agree this has to be done. You said in your statement, such a study is not available now; it should be available. If you could spell out, Mr. Staats, in a letter, which I will make part of the record or in a statement which I will make part of the record, alternatives. No. 1, this private group you suggest—how it could be composed, what it could do, why you think that it could get this information and get it rapidly enough so that we can get some value to us; we don't want it 10 or 5 years from now. We want it as quickly as we can get it.

No. 2, the positive as well as the negative aspects of the possibility that your office might do it.

No. 3, whether some other Federal agency might do it beside you, and the arguments pro and con here.

Mr. STAATS. We would be very happy to—we would be very happy to address ourselves to this.

Chairman PROXMIRE. If we are going to meet this problem, we need answers on overall realized profits. We don't have them. You can get them. You should do so.

Mr. STAATS. You do appreciate very frequently our reports are very critical of the agencies having responsibility for contracts, and this is, we hope this is always constructive, but it is nevertheless going to be critical. We hope that this will never be construed as having a motivation other than the most efficient contracting system that we can develop which is in the interests of both Government and the contractor.

Chairman PROXMIRE. Absolutely. Just as I said in the beginning, we have to have a healthy defense industry. We have to have one that is interested in getting Government contracts. We certainly don't want a situation that is so rigid, stilted, and restrained that we can't get the procurement. We have to have it. We have to have the best.

Mr. STAATS. We will be happy to—

Chairman PROXMIRE. At the same time, we have to have the information so we know what we are doing.

Mr. STAATS. We will be happy to spell out our thoughts on the subject.

(The following letter was subsequently received from the GAO:)

COMPTROLLER GENERAL OF THE UNITED STATES,
Washington, D.C., November 25, 1968.

B-159896

Hon. WILLIAM PROXMIRE,
Chairman, Subcommittee on Economy in Government, Joint Economic Committee, Congress of the United States.

DEAR MR. CHAIRMAN: This will summarize for the record our discussions during your hearings on November 11, 1968, and later in your Office, as to various alternative methods of conducting a study of realized profits by industry on defense procurement.

We believe that our Office would be severely handicapped in attempting such a study because, without additional broad legislative authority, we could not expect to obtain access to necessary industry records. We would be without authority to demand such access and, because of our role as the auditing arm of Congress, industry would not be likely to provide access on a voluntary basis.

Other alternatives include a study by the Bureau of the Census which already gathers certain financial data from industry as a part of its normal operations. There is also the possibility that the study could be conducted by the Joint Economic Committee itself with its own staff, possibly augmented by appropriately qualified personnel on loan from our Office, Department of Defense, or other Federal agencies.

The alternative we favor, however, is some organization that is neither Government nor industry-oriented—a university, foundation, or some similar academically oriented organization that will have no beneficial interest in either the study or its results. Let me emphasize here that we do not necessarily suggest creation of a new quasi-Governmental body, such as the Hoover Commission, solely for this purpose. Rather, we have in mind the utilization of an existing organization such as may be found in the departments of business administration of colleges and universities or, perhaps, one of the non-profit research organizations.

The advantages in a study by such a non-aligned organization are two-fold. First, in our opinion, industry will likely be more candid in providing information essential to the study and, second, the results should be more widely accepted as accurate and un-biased by industry and the public as well.

Sincerely yours,

ELMER B. STAATS,
Comptroller General of the United States.

Mr. STAATS. Before we depart, Mr. Chairman, we have developed a current status report on actions as we understand them that have taken place on the 16 recommendations contained in the committee's April 1968 report, and we would be happy to supply that to you for the record, or otherwise as you wish. It is an effort on our part to summarize what we understand the status of it is.

Chairman PROXMIRE. All right, we will put it in the record. It will be a fine addition to the record.

Mr. STAATS. Thank you very much.

Chairman PROXMIRE. Thank you, gentlemen.

(The report referred to follows:)

INFORMATION ON THE 16 RECOMMENDATIONS CONTAINED IN THE APRIL 1968 REPORT OF THE SUBCOMMITTEE ON ECONOMY IN GOVERNMENT, JOINT ECONOMIC COMMITTEE, ON "ECONOMY IN GOVERNMENT PROCUREMENT AND PROPERTY MANAGEMENT"

1. The subcommittee once again urges the greater utilization of competitive bidding to satisfy the requirements of defense procurement, and reversal of the tendency to award contracts by noncompetitive negotiation.

This recommendation appears to be for the attention of the Department of Defense and the civilian agencies involved (GSA, NASA, AEC).

2. Legislative action should be taken to insure postaudit rights of the Government under the Truth in Negotiations Act.

Public Law 90-512, September 25, 1968, provides agencies postaudit rights under the Truth in Negotiations Act (discussed on page 3 of statement).

3. When audits reveal that defective cost or pricing data have been certified by a contractor, despite the fact that accurate, current, and complete data were available to him, the case should be referred to the Justice Department for appropriate action.

An official of the Department of Defense has advised us that they are taking action as indicated by the individual case. We were informed that in most instances, cases of defective pricing are covered by contractual remedies and that cases are usually only referred to the Department of Justice where fraud is indicated.

4. The GAO and GSA should take steps to insure that other Federal Agencies adopt the provisions of DOD Circular No. 57 as a minimum standards for the awarding of negotiated contracts.

The GSA is revising the Federal Procurement Regulations so that they will substantially conform to provisions of DOD Circular No. 57. The GAO will of course observe compliance by Federal agencies of the revised regulations when they are issued. GSA has not yet indicated a release date.

5. The Bureau of the Budget should issue a uniform policy for guidance of Federal agencies and contractors regarding the use of price differentials under the Buy American Act.

It is our understanding that there has been no change in the Bureau of the Budget's position on the use of price differentials under the Buy American Act as expressed to the subcommittee during the hearings in 1967.

6. "The inventorying of all Government-owned automatic data processing equipment (ADPE), including equipment furnished to contractors, should be completed as soon as possible and kept current so as to prevent unneeded future purchases."

The ADP Management Information System, required by BOB Circular No. A-83, dated April 20, 1967, provides for inventorying all Government-owned and leased ADP equipment, including equipment furnished to contractors. The last published inventory report was issued by GSA and showed data as of June 30, 1966.

GSA is developing a current inventory as of June 30, 1968, and we understand that almost all of the information required of the departments and agencies has been received.

- According to GSA's liaison officer for the Management Information System, the current inventory report should be available around the first of December 1968.
7. GSA should make it possible for smaller manufacturers of ADPE to furnish part of the Government's requirements. Specifications should not be designed around the products of certain companies which have the effects of eliminating competition and stifling the incentive of smaller manufacturers.

GSA is attempting to carry out this recommendation. We are informed that letters have been written to peripheral equipment manufacturers asking whether the firms wished to place their equipment on the Federal Supply Schedule. We understand that 19 firms have so far expressed themselves in the affirmative.

In addition, GSA is conducting a study looking toward a program of actions to be taken by agencies with regard to procurement of peripheral equipment. The first phase of the study is expected to be completed within six months.

8. The DOD must make a much greater effort to enforce its stated policy that contractors provide their own facilities, equipment, tooling, and materials incident to the performance of Government contracts.
9. The DOD must make a much greater effort to encourage contractors to replace Government-owned equipment when it becomes inefficient or outmoded, and to require economic justification from any contractors requesting replacement of equipment at Government expense.

In April 1968, the Department of Defense revised its policy to emphasize that maximum reliance would be placed on the use of privately-owned production equipment in connection with the performance of defense contracts. On September 30, 1968, the policy was published in final form in Defense Procurement Circular No. 63. The revised policy states that facilities will not be provided to contractors for expansion, replacement, modernization, or other purposes unless the furnishing is for use in a Government-owned contractor-operated plant, operated on cost-plus-fixed-fee basis; to meet mobilization requirements; to meet a need that cannot be met by any other practical means or is determined to be in the public interest. The policy further provides that in the latter case new commitments to furnish Government facilities will not be made unless the contractor expresses in writing his unwillingness or financial inability to acquire the necessary facilities

or that he will be unable to obtain delivery of the equipment in time to meet defense requirements. In addition the policy provides that new facilities will not be furnished unless the existing equipment is inadequate or existing equipment cannot be economically furnished.

In another action to further limit Government investment in contractor-owned facilities, the Assistant Secretary of Defense (Installations and Logistics) issued a memorandum to the military departments and the Defense Supply Agency stating that equipment having a unit cost of less than \$1,000 would no longer be furnished to contractors for any purpose. This memorandum was included in Defense Procurement Circular No. 61.

10. Where costs of production have been reduced as a result of replacement or modernization of equipment at Government expense, appropriate contract adjustments and price reductions should be made.

On April 15, 1968, the Armed Services Procurement Regulation was revised to require a "Facilities Equipment Modernization" clause in facilities contracts. Under this clause, when the Government modernizes or replaces equipment being used by the contractor, the contractor would be required to return to the Government the net savings actually realized from the use of the modernized or replaced equipment. This clause is required for firm fixed-price contracts or subcontracts, or fixed-price contracts or subcontracts with escalation.

11. Immediate steps should be taken to collect full payment for past, present, and future use of Government-owned property, and to establish an adequate system of use records.

A Defense Procurement Circular issued in June 1967 requires DOD personnel to (1) review any unauthorized use of industrial plant equipment (IPE) and institute recovery action where money may be due the Government and (2) review all facilities contracts to assure adequate rental collection.

In connection with the establishment of an adequate system of use records, the Department of Defense has undertaken a study of the feasibility of maintaining records of equipment utilization on a machine-by-machine basis. A 90-day test conducted at 19 contractors' plants was recently completed. The contractors selected were required to maintain records on the number of hours each machine with an acquisition cost of \$25,000 or more was used for DOD, other Government, or commercial work. A variety of different record-keeping procedures were used which should provide DOD with a wider spectrum of alternative methods. Both recurring and nonrecurring costs were determined, so that reasonable estimates can be made of the cost of maintaining these utilization records on varying equipment acquisition cost levels.

DOD officials have determined that contractors will be required to maintain machine-by-machine utilization records for high-value equipment. The results of the test should enable DOD to determine how best to establish this recording procedure.

12. The inventorying of all Government-owned property on loan to contractors should be expedited by all defense agencies. Proper controls should be established for each class of property.

In early 1967, DOD inaugurated a reconciliation program to bring contractor-held inventories of production equipment into line with the records of the Defense Industrial Plant Equipment Center. The program was due to be completed in December 1969. In March 1968 the Assistant Secretary of Defense (Installations and Logistics) requested that the reconciliations be completed by December 1968. A special record-to-record reconciliation was requested in order to get a quick appraisal without waiting for the completion of physical inventories at all locations. As of July 1, 1968, two-thirds of the 2,100 locations had completed their physical inventory reconciliations and as of July 30, 1968, all but 43 of the contractors concerned had completed their special reconciliation.

DOD is in the process of making changes to the Armed Services Procurement Regulation to improve controls over Government property in the hands of contractors. The changes are expected to provide that if a contractor does not establish, maintain, and administer an approved system for control of the property or comply with written instructions of the contracting officer, any loss or damage to such property shall be presumed to have resulted from a failure to do so. Administratively, when a contractor fails to establish or maintain an approved system, a written deficiency report would be made under the Contractor Performance Record procedures.

13. A system of uniform rental rates should be established for the use by all contractors on an equitable basis who have been furnished Government-owned property.

Defense Procurement Circular Number 61 contains a revised schedule of uniform rental rates to be charged in leasing Government-owned equipment for Government and commercial use. The new schedule increases the monthly rental rate for equipment less than 3 years of age. The Armed Services Procurement Regulation Committee is also still considering a new policy under which contractors would be charged rent for all Government Industrial Plant Equipment in their possession.

In our opinion, these steps are not really addressed to the problem area where rental rate computation inequities occur. The gross rent liability is generally determined from the rental rate prescribed by the Armed Services Procurement Regulation, i.e., machine-by-machine. However, the computation of a rent credit for the rent-free Government work can be made according to the relationship of various factors—such as sales, labor hours, or machine hours.

As indicated in our November 1967 report to the Congress, it is our opinion that the determination of both the gross rent liability and the rent credit for rent-free use on a machine-by-machine basis would be more accurate and more equitable than the various methods presently in use.

DOD officials have stated that the matter of how rent can best be administered and applied continues to be under study. They have indicated to us that, when their position regarding rent has been established, it will be discussed and coordinated with the GAO.

14. A thorough review should be made of any misuse or unauthorized use of Government property in the possession of contractors. Penalties should be assessed for unauthorized or improper use of such property.

DOD has recently approved two major changes to its Armed Services Procurement Regulation concerning misuse and unauthorized use of Government property. The first change deals with a thorough evaluation of contractor Industrial Plant Equipment utilization. It requires regular evaluation surveys by property administrators, and contractor-written procedures to control the utilization of equipment, establish minimum utilization levels, and promptly return any equipment not utilized at these levels.

If these new provisions are properly and aggressively implemented, they should lead to improvements in several aspects. However, we still feel as indicated in our November 1967 report, that, in order to protect the Government interest, the Government should prescribe the standards and information needed to manage its equipment, including the extent and manner of use.

The second change contains new policy regarding commercial Industrial Plant Equipment usage controls. The policy states the conditions under which the commercial usage of equipment is justified; requires detailed written justification from contractors seeking approval of the Office of Emergency Planning for greater than 25 percent non-Government use of the equipment; and more precisely defines the criterion of more than 25 percent non-Government use.

In connection with assessing penalties for unauthorized use, DOD has developed a new rental penalties clause. In substance, the change states that a waiver of rental penalty for misuse can be granted only by the head of an agency rather than by the local contracting officer, as previously permitted. The revised clause allows the waiver only when circumstances amounting to gross inequity justify such a waiver.

15. GAO is requested to advise the subcommittee as to collection action taken or planned by DOD resulting from GAO Report B-140389. Action taken regarding these contractors should be extended equally to all similar contractors holding a Government property.

DOD has completed its reviews of all the companies cited in our report and has made collections of approximately \$66,000 from five companies. DOD has stated that, in each of the cases reviewed for collection, careful study was made to determine if additional amounts were collectible under contract terms, and that, where this was so, action was initiated and such collections were obtained. As shown in the above comments on recommendation number 11, DOD personnel were required to review all facilities contracts and unauthorized use of equipment and to take action to assure adequate rental collection, where appropriate.

16. GAO is requested to continue to investigate the adequacy of controls over Government property furnished to contractors, including property held under contracts with agencies other than DOD, such as NASA and AEC.

As recommended, we are continuing to investigate the adequacy of controls, including those applicable to property held under contract with agencies other than DOD.

According to its records, the National Aeronautics and Space Administration has about a half billion dollars worth of equipment in contractor-owned plants. We are now reviewing the adequacy of agency control over and the utilization of such equipment at selected locations. A large portion of the NASA equipment held by contractors is located in facilities utilized almost exclusively in support of the space program; we do not, therefore, expect that commercial utilization of such equipment will prove to be a significant problem.

With respect to the Atomic Energy Commission which has about \$5 billion worth of equipment, almost all is located in Government-owned contractor-operated plants. These contractors are engaged in government work exclusively and there does not appear to be a problem of utilizing Government equipment for commercial purposes. We are, however, reviewing AEC's overall accountability for such equipment.

Chairman PROXMIRE. Our next witness is Murray Weidenbaum, professor of economics at Washington University, St. Louis, who is an outstanding expert in this field, and has a very interesting paper. Professor Weidenbaum, go right ahead.

STATEMENT OF MURRAY L. WEIDENBAUM, PROFESSOR OF ECONOMICS, WASHINGTON UNIVERSITY, ST. LOUIS, MO.

Mr. WEIDENBAUM. Thank you, Mr. Chairman. Thank you for the kind remarks.

It is a great pleasure to be asked to participate in the subcommittee's study of the economic impact of military procurement. I should like to focus on three main questions.

HOW TO INCREASE THE EMERGENCY OF MILITARY PROCUREMENT

1. What is the future outlook for military budgets? If the achievement of peace in Vietnam will lead to further arms reduction and even arms control and disarmament, then the question of military procurement becomes less important. However, as I will explain, I believe that the indications point to high and rising levels of defense preparedness and, hence, of military procurement over the coming decade. Thus, the subject of the present inquiry will become of even greater importance in the future.

2. How efficiently do we use the resources devoted to the military effort? This question is a fundamental part of any economic study of military procurement. Rather than treating efficiency as an abstract concept, I will focus instead on two key indicators of efficiency: the degree of competition for military business and the level of profits on defense contracts.

3. How can the efficiency of military procurement be increased? The hearings before this committee have brought to light major shortcomings in military procurement practices and some improvements have been made. However, many of the efforts at greater regulation of defense companies have generated, I believe, adverse side effects on private initiative and entrepreneurship. Thus, I will try to indicate what steps can be taken to achieve the twin objectives of increasing the efficiency of military procurement and strengthening the private enterprise system.

THE OUTLOOK FOR MILITARY BUDGETS

When we attempt to project the future trends in military spending, we are really looking at the period following peace in Vietnam. It is extremely difficult to estimate the nature and size of a cutback in mili-

tary spending following peace in Vietnam. A return to the pre-Vietnam defense level is generally envisioned to involve a reduction in the neighborhood of \$15 billion from current levels, although specific estimates range from \$30 billion down to close to zero. The full amount of Vietnam "savings" is not likely to be realized. There will be close interrelationships between the size of post-Vietnam cutbacks and general attitudes toward military spending. A restrictive attitude on military spending after peace in Vietnam could result in far sharper reductions in the defense budget than otherwise.

Even to devote the same amount of real resources to defense programs as prior to the war will require a substantially higher level of expenditures than in 1965—that is, before the Vietnam buildup—because of the sizable pay raises for the Armed Forces and civilian personnel and the increased costs of weapons and supplies that have occurred in the last 3 years. Depending on when peace is achieved, the new base could be anywhere between \$60 to \$70 billion. The dollar cost of the new base expands over time because of further pay and price rises. There also are several "built-in" increases.

Chairman PROXMIRE. You say the new base will be \$60 to \$70 billion, you are talking about the new base without the inflationary elements in it, without the allowance for the increased pay and without the allowance for the increased cost of weapons?

Mr. WEIDENBAUM. No, sir. That is precisely why I give you a range of \$60 to \$70 billion. If we had peace in Vietnam right now, the non-Vietnam base would be closer to \$60 billion. If peace is delayed another year or so, the base would be closer to \$70 billion.

Chairman PROXMIRE. What was the budget, as you calculate it, because there are different methods I suppose of calculating what includes defenses, but what was the defense budget, say, in 1964 before we started escalation? We were spending money in Vietnam but much, much less.

Mr. WEIDENBAUM. It was about \$50 billion.

Chairman PROXMIRE. About \$50 billion; all right.

BUILT-IN INCREASES

Mr. WEIDENBAUM. The dollar costs of the new base expands over time because of further pay and price rises. There are also several built-in increases.

For example, under existing law, the pay of the Armed Forces and civilian employees of the Military Establishment is scheduled to rise by over \$2 billion between the fiscal years 1969 and 1970, in order to establish comparability with private wage scales.

Also, several weapon systems are in early stages of production and the large expenditures are scheduled to come in the next year or so—examples, among many, include several nuclear carriers and destroyers, the Poseidon and Minuteman III missiles, and the Sentinel ABM system. These built-in increases are all aside from the future consequences of any decisions currently being made or which will be made by the incoming President to bolster our long-term arsenal of strategic and tactical weapon systems.

One indication of future congressional action is the recent report of the Preparedness Investigating Subcommittee of the Senate Armed

Services Committee. Reflecting a year of detailed study and hearings dealing with strategic forces, the committee urged, "Prompt decisions should be forthcoming for the deployment of additional and more modern weapon systems and improvements to existing weapon systems * * *"

The committee specifically recommended rapid development of a new long-range strategic bomber and an accelerated research and development effort on an advanced ICBM. It also has under way studies of tactical requirements for aircraft, missiles, and ships, and we can presume that similar recommendations will be forthcoming.

MILITARY BUDGET PROJECTIONS

It might be helpful to consider some military budget figures prepared under different assumptions. The numbers in table 1 are my own estimates. As a base, we can take the current fiscal year, 1969, at about \$78 billion.

Personally, I arrive at that figure in either of two ways: continuation of the war in Vietnam plus restraint on non-Vietnam military programs or peace in Vietnam with initiation of several new weapons systems. Permutations and combinations are obvious. With continuation of the war and something less than restraint, total defense spending could reach \$80 billion or more. In contrast, peace with budgetary restraint might lower DOD expenditures to \$76 billion or so.

TABLE 1.—ALTERNATIVE EXPENDITURE PROJECTIONS OF DEPARTMENT OF DEFENSE—MILITARY FUNCTIONS (ASSUMPTION)

[Fiscal years. In billions of dollars]

	Vietnam	Other military	1969	1970	1971	1972	1973
Status quo.....	Some new programs.....	80	86	89	92	95	
Do.....	Restraint.....	78	83	85	87	87	
Peace.....	Some new programs.....	78	72	72	75	78	
Do.....	Restraint.....	76	70	68	68	68	

Note: "Status quo" projections assume no fundamental escalation in the U.S. commitment in Vietnam. "Peace" projections assume termination of hostilities early in calendar year 1969.

Mr. WEIDENBAUM. Moving ahead to fiscal year 1970, price and wage increases alone would raise military spending by somewhere in the neighborhood of \$5 billion. Hence, continuation of the war could result in a military budget of \$83 billion. With peace early in calendar year 1969, I would estimate military spending at about \$70 to \$72 billion—

Chairman PROXMIRE. It is interesting that when Mr. Nitze testified before the Appropriations Committee, I asked him what he expected the budget to be after Vietnam, assuming peace in Vietnam, and he said then—this was 4 or 5 months ago; no, I guess it was in June—that it would be about \$75 billion. That is very close to what you have.

You say peace with budgetary restraint in contrast might lower DOD expenditures to \$76 million.

Mr. WEIDENBAUM. I was not aware of that testimony. I am pleased to learn of that.

Chairman PROXMIRE. That was in executive session, but of course that testimony would not be secret, at least I hope it would not be. It is not now. [Laughter.]

The typical defense contractor is in the asset size of \$250 million or higher.

DECLINE OF SMALL BUSINESS

How small a share for small business?

Small firms receive a thin slice of military business. In the fiscal year 1968, small business firms received only 18 percent of DOD prime contracts. However, this average conceals a good part of the actual forces at work.

Table 3 shows that there is great variation in small business shares within the military market.

TABLE 3.—*Small business share of military purchasing, fiscal year 1968*

[Percent of total awards to business]	
Category	
Construction	64
Textiles and clothing	61
Subsistence	56
Procurements of less than \$10,000	50
Miscellaneous hard goods	39
Services	26
Fuels and lubricants	22
Ordnance weapons	17
Tanks and automotive vehicles	14
Ships	12
Ammunition	11
Electronics and communication equipment	11
Aircraft	3
Missiles and military space systems	2

Chairman PROXMIRE. Small business share has been declining, has it not?

Mr. WEIDENBAUM. Yes, sir.

Chairman PROXMIRE. Along with competition?

Mr. WEIDENBAUM. Yes, sir; since the beginning of the Vietnam war. For example, the small business share ranges from a high of 64 percent for construction to a low of 2 percent for missile and space systems. Small business concerns receive relatively large proportions of contentional procurements—construction, textiles, clothing, subsistence, and small purchases—and relatively small proportions of the items with a high input of science and technology, such as aerospace systems.

SUBCONTRACTING—LACK OF INFORMATION

Military subcontracting is one area where the potential for small business participation is great and it is the area where we have the least information. Until 1963, the Pentagon reported on the proportion of prime contracts which were subcontracted out. It came to about one-half over the years. Such data are no longer available.

Chairman PROXMIRE. Why is that?

Mr. WEIDENBAUM. I do not know.

Chairman PROXMIRE. About that time that I got a bill passed providing for a small business subcontracting program, including officials in the Defense Department whose job it was to do all they could to help small business get contracts, and so forth, and I am startled to see they do not report on subcontracts.

Mr. WEIDENBAUM. The Department of Defense does report regularly on the percentage of the subcontracts of a large sample of its primes that go to small business. I am surprised that in the same questionnaire they do not ask for the information they used to ask for, and that is the split of how much is done in-house and how much is subcontracted out. I cannot see any—

Chairman PROXMIRE. Could you just take a minute or two to tell us why this is significant and why this would be useful?

Mr. WEIDENBAUM. Well, by and by large the major role of small business—

Chairman PROXMIRE. I am not talking about small business. You say they do give some report on that. But I am talking about the overall subcontracting.

Mr. WEIDENBAUM. That is just the point, Senator. We know what proportion of subcontracts go to small business, but we do not know what proportion the prime contractors decide to keep in-house or get the military to let them keep in-house as opposed to subcontracting out in the first place.

Chairman PROXMIRE. I see.

Mr. WEIDENBAUM. The major potential for widening the role of small business in military procurement is to increase the subcontract ratio; and this is precisely the information which since 1963 is no longer available.

Chairman PROXMIRE. The other major way to do it is to provide for more advertised competitive bidding. Small business gets a great deal more of this than they do of the negotiated awards, for many reasons, but they do. Of course, it is very hard to increase that.

Mr. WEIDENBAUM. And certainly in the case of large weapons systems it is clearly—

Chairman PROXMIRE. They cannot.

Mr. WEIDENBAUM. The potential role is clearly at the first or second or third tier of subcontractor level.

It would be helpful to know more about this large segment of the military market. Some tabulations of subcontracts by type of product or industry would be useful. This would enable us to explore the nature of competition for subcontracts.

DECLINE OF COMPETITIVE NEGOTIATED CONTRACT AWARDS

How competitive is the military market?

The Department of Defense reports that 42 percent of its contracts were awarded by competition in the fiscal year 1968. This is down from 47½ percent in 1967. However, the drop is not due particularly to a shift in competitive forces, but results from changes in reporting brought about by the work of the Comptroller General and of this committee.

It is a little difficult for me to keep a straight face when reporting that only since May 1967 does there have to be more than one bidder before an award is classified as competitive.

Chairman PROXMIRE. Where did you get that 42-percent figure; those are the ones that are not negotiated with a single source?

Mr. WEIDENBAUM. My source of information is the Department of Defense report, "Military Prime Contract Awards and Subcontract Payments."

Chairman PROXMIRE. You are just talking about the contracts that are not negotiated with a single source, when you say 42 percent. In other words, 57 or 58 percent are negotiated with a single source. They obviously have no elements of competition in them at all.

If you are talking about so-called competitive negotiated bidding, that is three-quarters of everything that is left; is that right?

If you are talking about advertised competitive bidding, you are down to about 11 percent.

Mr. WEIDENBAUM. The figure of 42 percent competitive is based on the analysis of all Defense Department contracts for military functions in fiscal 1968 other than work performed by other Government agencies.

Chairman PROXMIRE. I am just talking about what you mean when you say "competitive."

Mr. WEIDENBAUM. Well, of the 42 percent, only a small portion is formally advertised. In other words, 11.5 percent is formally advertised.

Chairman PROXMIRE. Well, as long as we understand what you mean when you say "42 percent," because I think that squares with what we just heard.

It would seem that there is an apparent discrepancy between your statistics and those of the Comptroller General. There is not. We are just talking about different categories when you talk about competition.

Mr. WEIDENBAUM. Yes; I believe we are both using the same Department of Defense data.

Chairman PROXMIRE. All right. Very good.

DEGREE OF COMPETITION

Mr. WEIDENBAUM. It would be helpful to have comprehensive statistics on individual competitions, showing the actual number of companies that really respond with bids, the nature of the winners and of the losers. Meanwhile, we can try some indirect methods of analyzing the degree of competition for military business, and this I have done in a rough way.

HOW MUCH TURNOVER AMONG MILITARY SUPPLIERS

One method is to examine the turnover among the major defense contractors. Table 4 shows the turnover between 1958 and 1967.

TABLE 4.—TURNOVER AMONG MAJOR DEFENSE CONTRACTORS, 1958-67

Top 100 contractors, 1967	Ranking in 1958					Total
	1 to 25	26 to 50	51 to 75	76 to 100	Below 100	
1 to 25.....	18	3	1	1	2	25
26 to 50.....	4	8	5	1	7	25
51 to 75.....	1	3	2	3	16	25
76 to 100.....	0	1	3	3	18	25
Total.....	23	15	11	8	43	100

ENTRENCHMENT OF DOMINANT FIRMS

The entrenchment of the dominant firms is striking; 18 of the top 25 in 1967 also were in the top 25 in 1958.

The relatively low turnover among the top firms in the military market, which are mainly the large aerospace and electronics companies, results in good measure from the substantial barriers to both entry into and exit from the markets for major weapon systems.

The entry barriers here mainly take the form of scientific and engineering capabilities required to design and produce modern aerospace weapons. The exit barriers, in contrast, can be inferred from the many unsuccessful attempts these companies have experienced in penetrating commercial markets.

In contrast, considerable mobility is evidenced in the ranking of the firms which have substantial but lesser shares of military business. Of the next 75 firms, 43—more than half—were not on the list of the top 100 defense contractors in 1958. Between 1965 and 1966 alone, 28 percent of the firms on the top 100 list were replaced. These shifts, which occurred primarily among nonaerospace firms, also reflect the changing product mix of military procurement and, hence, the influence of technology rather than a shift in competitive forces.

A decade ago, the large missile programs brought many firms into the military market as suppliers of mechanical ground support equipment, fabricators of silos and builders of tracking stations. The decline in missile procurement and the rise of ordnance for limited war is requiring a different set of technical capabilities and a new variety of industries.

HOW CONCENTRATED IS MILITARY PROCUREMENT

Another indirect method of estimating the amount of competition is to examine the degree of concentration of sellers in the major product categories. Such statistics do not reveal the number of competitors or the intensity of competition for individual contracts. The data do indicate the extent to which different firms are active in the various segments of the military market.

CONCENTRATION RATIOS

There has been considerable discussion of the validity of concentration ratios as measures of industrial concentration and competition. They should not be taken as gospel. The concentration ratio is a fairly crude approximation but, so far, it is the only thing we have which fits the requirements of economic theory that it have some relevance to market behavior. As a general statistical matter, the greater the concentration the lower the odds in favor of competitive behavior.

I call the committee's attention to table 5 which contains some concentration ratios for the military market. It covers the contract awards by the Air Force in 1966.

TABLE 5.—MARKET CONCENTRATION IN U.S. AIR FORCE PROCUREMENT, FISCAL YEAR 1966

Market category	Size (millions)	Percent of contracts	
		Top 4 firms	Top 8 firms
Aircraft engines.....	\$2, 185	86	92
Combat vehicles.....	590	65	79
Airframes and spares.....	4, 760	56	79
Noncombat vehicles.....	999	55	68
Petroleum.....	1, 279	38	54
Ships.....	1, 436	37	54
Missile and space systems.....	4, 395	35	56
Construction.....	1, 856	34	36
Weapons.....	524	31	39
Other aircraft parts.....	1, 054	24	37
Building supplies.....	412	23	38
Electronics equipment.....	3, 995	22	35
Ammunition.....	2, 899	21	31
Services.....	3, 041	18	24
Textiles and clothing.....	1, 286	13	20
Subsistence.....	1, 102	8	12
All other supplies and equipment.....	1, 464	7	12

It can be seen that the implicit degree of competition varies widely among the product categories. Four firms account for 86 percent of the engine contracts and for only 8 percent of subsistence.

Chairman PROXMIRE. You say four firms account for 86 percent of the engine contracts. Are there one or two firms that get most of it?

For example, I think the argument that there are four firms that account for 98 percent of the automobile production in this country does not give a fair picture of the concentration. General Motors accounts for half or more.

Mr. WEIDENBAUM. Two firms, United Aircraft and General Electric, account for 65 percent of Air Force contracts for aircraft engines in that year.

Chairman PROXMIRE. Which is the larger, and how much does that account for?

Mr. WEIDENBAUM. Excuse me?

Chairman PROXMIRE. Which is the bigger?

Mr. WEIDENBAUM. United Aircraft is No. 1 with 36 percent, General Electric is No. 2 with 29 percent. Then AVCO is third with 14 percent.

Finer breakdowns—such as fighters, bombers, et cetera, in the aircraft category, for example—would show a greater degree of concentration.

In order to analyze the data—in terms of the engine, Senator, AVCO does not produce the large kind of engines that, say, United and GE produce, but the finer the degree of breakdown, the higher the concentration ratio is found.

Chairman PROXMIRE. So you get some categories in which you only have one source, others in which you have only two. So when you talk about aircraft engines having four and the leading firm having 36 and the next 29, it does not look too bad, but when you break it down with the big engines or particular kinds of engines, you find that you often have only one or two firms that can sell to the Government.

Mr. WEIDENBAUM. Well, in terms of the big engines, generally two, United Aircraft and General Electric. I cannot think offhand of a situation where one of those will let the other one go scot free without making a serious competitive effort. It would be in a sense a two-company competition.

Chairman PROXMIRE. Well, when you have a tremendous increase such as we have had in military procurement for Vietnam and so forth, you could certainly have a situation where one firm has just gotten more than it can handle and the other firm is the only one available, just a matter of timing, could that happen or not?

Mr. WEIDENBAUM. Conceivably it could happen. I am not aware that this is the case in the large engine category.

OLIGOPOLY IN THE MILITARY MARKET

Chairman PROXMIRE. Well, again, to be as fair as possible, do you think or would you conclude that you always have some degree of competition in these areas that you are discussing here? You have—

Mr. WEIDENBAUM. Yes, sir.

Chairman PROXMIRE. If they wished to, they can get at least two firms to bid or to competitively negotiate or something.

Mr. WEIDENBAUM. In this analysis of the Air Force market, so to speak, I have come across no case even approaching monopoly.

Chairman PROXMIRE. But it is rife with oligopoly.

Mr. WEIDENBAUM. Well, that is just the point I make in the next part of my testimony. It is competition between—

Chairman PROXMIRE. Duopoly, triopoly, quadropoly.

Mr. WEIDENBAUM. I use the term oligopoly to sort of serve as an umbrella here, and I draw upon the work of Messrs. Kaysen and Turner—Turner, the former Assistant Attorney General in Charge of Antitrust.

They developed standards for measuring concentration, they suggest that high seller concentration, oligopoly—where you have relatively few, when there are two or three or four firms competing in a large market—that high seller concentration, oligopoly, occurs when the largest eight firms control 33 percent or more of the sales of an industry. They group oligopoly into two categories:

Type 1, heavily concentrated industries, exist where the largest eight firms make at least half of the industry's sales.

In type 2 oligopolies—moderately concentrated industries—the first eight firms make a third or more of the sales but less than half.

HEAVILY CONCENTRATED INDUSTRIES

Of the 17 major Air Force product categories, in four cases, eight companies account for 50 percent or more of the market—type 1 oligopolies; aircraft engines, combat vehicles, airframes, and missile and space systems, the highly concentrated markets.

MODERATELY CONCENTRATED INDUSTRIES

In eight other market categories, eight firms receive a third or more of the contracts—category 2 oligopolies, substantial oligopolies, non-combat vehicles, ships, petroleum, construction, weapons, aircraft parts, building supplies, and electronics. Only five unconcentrated markets show up—ammunition, services, textiles and clothing, subsistence, and all other supplies. Some of these—

Chairman PROXMIRE. Have you had a chance to break down the amount of procurement in each of these types, the portion of the \$43

billion of Federal procurement that would fit type 1 and type 2 and so forth, so we have some notion of the portion of procurement that is in a highly concentrated industry?

Mr. WEIDENBAUM. In an earlier study which in a sense is the backup of my testimony, I have a table that does that, if I may turn to it.

Chairman PROXMIRE. If you could have it for the record that would be fine, there is no necessity that you supply it right now, but I think it would be very interesting to see and we would be in a better position to evaluate your position.

Mr. WEIDENBAUM. The figures are as follows, if I may.

Roughly 6 percent of Air Force procurement, this is on a somewhat different basis but it is all available, 6 percent—I am sorry, 25 percent of Air Force procurement in 1966 was in groups where eight firms accounted for 50 percent or more of the market. Twenty-five percent—another 29 percent were in markets where eight firms accounted for one-fourth to one-half of the market, and 46 percent of the contracts went to markets where eight firms account for less than a quarter of the market.

Chairman PROXMIRE. Now these figures would make it, again recognizing that further breakdowns would be very desirable, but these figures would suggest that the very low portion of advertised competitive bidding and the relatively low proportion of negotiated competitive bidding is unjustified, very unjustified, and the fact that it is declining is even more unjustified, again subject to an analysis of a finer breakdown which, as you indicated, might show a greater degree of concentration.

Mr. WEIDENBAUM. I think that is the key to it, because this very gross degree of breakdown in the table I have in the back up here, showing how this market, Air Force procurement, compares to the total manufacturing in the United States, does not show it particularly more concentrated. It shows that in a sense American industry as a whole is fairly concentrated and military procurement is a mirror of that.

However, if we had more detailed breakdowns of concentration ratios, it would show up higher.

HOW PROFITABLE IS DEFENSE WORK?

The high degree of seller concentration in the military market would lead us to expect that profit rates are higher than average. This is precisely what my analysis to date shows, although I should caution the committee that there are differences on this score.

The Logistics Management Institute, on the basis of a somewhat different approach, came up with quite contrary findings. Their study covered many smaller companies and many firms which are not primarily dependent on military contracts and the data they used were supplied primarily by special questionnaires.

I took a sample of the large defense contractors that do three-quarters or more of their business with the Government and compared them with a sample of similar sized industrial corporations that obtain most of their sales in commercial markets. The data I used are standard published data.

The results are contained in table 6. As shown in the table, and as is well-known, defense companies operate on much smaller profit mar-

gins, defined as profits as a percent of sales, than do typical industrial corporations. However, as a result of the large amounts of Government-supplied capital, which are not reflected on the books of these companies, the major defense contractors report a far higher ratio of capital turnover—dollars of sales per dollar of net worth.

PROFITS AS A PERCENT OF INVESTMENT

The higher turnover rates more than offset the lower profit margins. Hence, the defense companies' return on net worth—net profits as a percent of stockholders' investment, which is the preferred method of measuring profitability—is considerably higher—17.5 percent, for my sample of large defense companies, versus 10.6 percent for my sample of similar size nondefense companies during 1962-1965.

TABLE 6.—COMPARISON OF DEFENSE AND NONDEFENSE ORIENTED CORPORATIONS

Financial characteristics	Average of sample of defense firms		Average of sample of industrial firms	
	1962-65	1952-55	1962-65	1952-55
Profit margin on sales (percent).....	2.6	3.0	4.6	4.5
Capital turnover.....	6.8×	6.1×	2.3×	2.9×
Return on net worth (percent).....	17.5	18.6	10.6	13.0

Chairman PROXMIRE. This is really startling if you can show that it is comparable.

In other words, what you are saying is that when these 2 years, these two periods of 2 years, defense profits rose from 10.6 percent to 17.5 percent, and by percent I am talking about profits in relationship to stockholders' investment; is that correct or not?

Mr. WEIDENBAUM. No, sir.

What this shows is that defense profits from my sample in the middle fifties, 1952 to 1955, were 18.6 percent. They declined a bit too, during the period 1962 to 1965, to 17.5 percent. In contrast, the sample of commercial companies experienced a much sharper profit decline, 13.0 percent to 10.6 percent. So that defense companies in both periods showed higher profits than nondefense companies, and the difference between the two widened.

The middle fifties were a period of very rapid economic expansion and very high rates of profit in the American economy as a whole.

For background, I hope it is not interpreted in a partisan way, but the period 1952 to 1955 you will recall was during a Republican Presidency and the period 1962 to 1965 was during a Democratic Presidency, and I offer that for whatever it is worth.

Chairman PROXMIRE. Can you draw any conclusions based on the 1952 to 1955 period as a period that included the Korean war and the post-Korean war, and it would be a little more useful, it would seem to me, if you had other figures, maybe they are not available but if you had figures showing 1950 to 1952 compared to 1966 through 1968 or 1966 and 1967, something of that kind.

What I am talking about here is a period which shows that average sample of defense firms, the profit margin was low, 2.6 percent, the return on net worth was 17.5 percent, which is far higher than the average return in private industry, nondefense firms.

Mr. WEIDENBAUM. Yes, sir.

Chairman PROXMIRE. Substantially higher, I would say 75 percent higher; is that right?

Mr. WEIDENBAUM. That is right.

CONGLOMERATE MERGERS OBSCURE DEFENSE PROFITS

Chairman PROXMIRE. And this was before the Vietnam war.

Now is it fair to conclude that, on the basis of any studies that you have or any data that you have, that the profits are now higher than they were during the pre-Vietnam war escalation period?

Mr. WEIDENBAUM. I have not analyzed the impact of the Vietnam war on profitability for a variety of reasons.

One is the technical point that given the trend toward conglomerate mergers affecting the aerospace industry and large defense suppliers, Martin-Marietta, McDonnell-Douglas, North American Rockwell, we no longer get the data in published statements.

Chairman PROXMIRE. That is interesting, another interesting reason to be concerned about conglomerate mergers that had not occurred to me.

This obscures the opportunity for determining the profitability of defense firms, does it not?

Mr. WEIDENBAUM. My understanding is there are strong elements in the accounting profession pushing for the conglomerates to report results, both sales and profits by division.

Chairman PROXMIRE. You still would not have the net worth though. That is something else.

Mr. WEIDENBAUM. Not unless they choose to do so, but this of course underscores the importance of the study you were discussing earlier with Mr. Staats.

EXPERIENCE DURING WARTIME PERIODS

Chairman PROXMIRE. What was the experience in previous wartime periods? Did the profits of defense firms rise or decline during the Korean war in relation to net worth?

Mr. WEIDENBAUM. My recollection is that profits of several of the large defense contractors rose very sharply during that period.

Chairman PROXMIRE. I would think they would. Even if their return, even if their profits on sales, declined because their volume obviously goes up sharply?

Mr. WEIDENBAUM. Well, but there was an interesting aspect of defense procurement during the Vietnam war that was not present during the Korean war, and that was, during the earlier period we had not only the expansion of the defense contracts for the limited war, we had the beginning of the cold war so to speak, so we had a major increase in defense contracts for strategic weapons.

This was a period of major procurement of B-47's, B-52's which were not used in Korea, but were used to rebuild our strategic arsenal that had declined substantially between the end of World War II and the beginning of Korea.

In contrast, our strategic arsenal had been maintained at a much higher level between Korea and Vietnam.

INCREASE IN PROCUREMENT, 1964-68

Chairman PROXMIRE. You can make no conclusion on the fact that procurement has gone up from \$26 billion to \$43 billion between 1964 and 1968, and again I do not want to press you on this because we want to get as accurate an estimate as possible, but you would not conclude that that would necessarily indicate a higher return on net worth for defense contractors?

Mr. WEIDENBAUM. Well, there are two conflicting aspects here.

One is that the requirements of the Vietnam war brought companies back into the military market, that is, nonaerospace, nonhigh technological companies that had not been a big factor in the interwar period, so the defense dollars are being spread more widely.

When we look at the geographic distribution of the defense contracts and when we look at the industrial distribution of the contracts since the Vietnam war, you see they are distributed more widely, food, clothing, Army ordnance. That would explain why margins would not come down.

To the extent that individual companies obtained rapid increases in Government orders for a given product line, notably aircraft for Vietnam, I would expect the so-called learning curve to take hold; that is, decreasing unit costs.

PROFITS OF DEFENSE FIRMS AND NONDEFENSE FIRMS

Chairman PROXMIRE. That is what I would conclude. At any rate, what your table 6 shows is the average sample of defense firms, which you have done your very best to make as objective a selection as possible, that the defense firms are earning substantially more than non-defense firms?

Mr. WEIDENBAUM. That is right.

Chairman PROXMIRE. During both the 1952-55 period and 1962-65 period, and there is every reason to suspect and no reason not to suspect that you have the same situation, and perhaps a higher return on invested capital for defense firms, at least on the basis, as you say, of the unit cost system, than for nondefense firms.

Mr. WEIDENBAUM. We would suspect so, but I do not know if we can make a strong statement about it.

LMI STUDY

Chairman PROXMIRE. At this point, would it be a good thing for you to give us—because I am going to ask Defense when they appear tomorrow, about their LMI study, Logistics Management Institute defense study—your own reason for the direct contradiction where you show a higher profit for defense firms than nondefense firms and they show the reverse?

They show two things: They show, No. 1, a lower profit and, No. 2, they show a declining rate of profit, indicating we ought to be concerned about the health of the defense industry, and we ought to be looking for ways for providing them to make more money.

Mr. WEIDENBAUM. So far as a declining rate of profit, I do show a very small decline between the 1950's and the 1960's, and as they carry their data forward a few more years—

Chairman PROXMIRE. Well, you show a much more, much clearer decline for nondefense firms during that period, 30 percent.

Mr. WEIDENBAUM. Yes. But basically, the reason I think that LMI came up with different results is certainly no reflection, I do not think, on the ability of either the LMI and/or myself to master the higher reaches of arithmetic. I am willing to accept the accuracy of their computations.

The key difference is the nature of the sample. Very clearly, I described this study of mine as an analysis of the large specialized military contractors, those Government-oriented corporations who do more than three-quarters of their work for the Government over extended periods of time.

DATA FOR SMALLER AND MEDIUM-SIZED COMPANIES

These are what—incidentally, I have used the phrase, “the locked-in defense contractors.” In contrast, LMI used a much wider sample. They covered, first of all, many smaller medium-sized companies, companies that do not depend so overwhelmingly on Government business. Many of the companies in their sample do most of their work in commercial, industrial consumer markets.

VOLUNTARY SUBMISSIONS

Chairman PROXMIRE. Would not any professional—these days we are all concerned about polling—any professional pollster, Mr. Scammon or anyone else, would almost faint with shock if you said the way to determine profits or anything else using the LMI system is about as bad as you could derive—what they have done, as I understand it, is to send out inquiries throughout defense industry to determine whether or not profits are higher or lower through the defense contractors, then they have tabulated the ones they have received back.

Anybody who has conducted any kind of a poll knows this is about as unreliable as you can get, especially in this kind of an area. After all, if you are a contractor enjoying increasing profits, you are not going to be so anxious to reply on a voluntary basis, this was completely voluntary, to the Government's inquiry or to LMI's inquiry or to any other agency's inquiry as to what your profits are.

If your profits are low, you are going to be telling everybody that you cannot make money out of it. I found that to be true in my State. People are always willing to tell you that these Government contracts are worthless, that they are more painful than they are profitable, and therefore you get a very inaccurate—predictably inaccurate—response.

Mr. WEIDENBAUM. This no doubt is a serious problem.

Chairman PROXMIRE. This is what LMI has done, as I understand it. They have tabulated results of volunteer responses without making any computation to account for the kind of persons who would respond, the kind of firms I should say that would respond.

Mr. WEIDENBAUM. I believe they have a fairly wide sample with responses in each of the major categories.

Chairman PROXMIRE. And a very biased response group.

Mr. WEIDENBAUM. I think the fundamental difficulty, perhaps, is a different one, or perhaps a second difficulty. I have not looked at the

unpublished worksheets of LMI and I cannot say how representative their sample is.

What really concerns me is the following: If my study focuses almost entirely on the giant—the largest—prime contractors, and their study is so heavily weighted with medium-sized, smaller, nonspecialized defense contractors, the way I can reconcile the two results is as follows:

DATA FOR LARGE COMPANIES

The large companies that do most of their business with the Government have done a very good job of adjusting to the so-called McNamara reforms, such a good job that their profit rates are relatively higher, relative to nondefense firms than prior to the McNamara reforms.

On the contrary, the smaller, less specialized defense companies that cannot afford to devote as much in the way of staff resources in following the ASPR's and contract negotiations, et cetera, have not done as well in adjusting to the changes in defense procurement contracting. Hence, the way I can reconcile the two studies is that the large firms are doing quite well but the smaller, medium-sized and less specialized firms perhaps are the ones who are truly showing the decline in profitability of defense work.

But that is surmise. You cannot be certain unless you see the unpublished data.

Chairman PROXMIRE. It would seem to me if you are going to rely just on the people who reply, volunteer to reply, you cannot make a useful conclusion on any basis, whether these are the typical small firms or the large firms. There may be a large number of medium-sized firms doing well who would not reply; why should they? This is voluntary. But your observations are extremely interesting, too.

Mr. WEIDENBAUM. At this point I would like to link up the two threads of my analysis.

MILITARY MARKET HIGHLY CONCENTRATED

First, we have found that despite substantial rivalries for individual defense contracts, the markets for major portions of the military market are highly concentrated; they well can be characterized as competition among the few.

LARGE FIRMS REALIZE HIGHER PROFITS

The second major point follows logically from the first, the major firms that hold entrenched positions in the military market experience profits substantially above those of commercially oriented corporations of similar size. Hence, if we can attract more firms into this market, two related accomplishments can occur: the high seller concentration may be reduced and the greater competition is likely to bring profit rates down to more normal levels. The concluding section of my testimony suggests ways of doing this.

INCREASING THE EFFICIENCY OF MILITARY PROCUREMENT

Before presenting some positive suggestions for increasing the efficiency of military procurement, I would like to point out how not to go about it.

As I observe the cumulative effect of the close military-industry relationship, I am struck by the extent to which the Government is taking on the traditional role of the private entrepreneur while the companies are acquiring many of the characteristics of a Government agency or arsenal. Policy changes supposedly designed to increase efficiency must take account of and, I should hope, avoid these unintended side effects.

EFFECTS OF MILITARY-INDUSTRIAL RELATIONSHIP—WHAT ARE THE UNINTENDED SIDE EFFECTS?

In its long-term dealings with its major suppliers, the Department of Defense gradually has taken over directly or indirectly many of the decisionmaking functions which are normally the prerogatives of business management. This public assumption of, or active participation in, private decisionmaking includes such basic aspects as the choice of which products the firm is to produce, the source of capital funds, and the internal operation of the firm.

RESEARCH AND DEVELOPMENT

By awarding massive contracts for research and development, the Department of Defense has come to strongly influence or determine which new products its contractors will design and produce. Hence, the decisions to embark upon a military product research and development program are made primarily not by the sellers but by the buyer, who bears the risk of not recovering its technological investment. Defense contractors do sponsor and fund some of their own R. & D. effort.

COST ALLOCATION FOR R. & D.

However, the bulk of their R. & D. is performed under Government contract and much of the remainder is charged as allowable overhead on their Government production contracts.

Chairman PROXMIRE. That is a very interesting and, I think, a shocking observation.

Would you explain the statement, the bulk of the defense contractors' R. & D. work is performed under Government contract and much of the remainder is charged as allowable overhead on their Government production contract?

Mr. WEIDENBAUM. Well, in a sense R. & D., and we are talking about the big ones, is an end product, is an end product which the contractors sell to the Government. In other words, develop a new ICBM, develop a new strategic aircraft for the Pentagon. This is a product which the defense firm is selling to the Government. Hence it does it under a contract. That is the first part.

This has been standard procedure for decades, and it is certainly no new development.

The second point gets at the question, what sort of costs should be chargeable to a military contract, a Government contract? You know we talk about cost-plus contracts, what goes into the cost base is critical and there has been negotiation over the years as to how much of the so-called I.R. & D., the independent research and development effort sponsored by the company, is a standard cost of doing business, and

hence, like our light bulbs and so forth are chargeable pro rata to the Government contract.

My understanding is this is a subject of considerable negotiation each year between the military and the leading contractors, and the percentage of the corporate sponsored research which is allowable as overhead varies from year to year. It is certainly something way less than 100 percent. It depends in good measure on the extent to which the military considers a research program relevant to the military mission, but it gives the company some initiative for undertaking military related R. & D.

Chairman PROXMIRE. In other words, what you are saying, I want to be sure I understand this, you are saying that the bulk of the defense contractors' R. & D. work is performed under Government contract and that the remainder which is perhaps not for the Government but is for the commercial market, that some of this is chargeable as overhead on Government production contracts or not?

Mr. WEIDENBAUM. No, sir; I must clarify that.

In the case of the aerospace industry, which industry receives the largest proportion of R. & D. contracts, over 90 percent of the aerospace industry's R. & D. was funded by the Government contracts, namely military, in 1964, the year I have here. That ratio has been fairly constant over the years.

Chairman PROXMIRE. All right.

Mr. WEIDENBAUM. Now the remainder of their military-related R. & D., much of that is charged to their production contracts, not their commercial contracts.

Chairman PROXMIRE. Yes; but if 90 percent of their R. & D. work is paid for and so forth by the Government and much of the remainder—

Mr. WEIDENBAUM. Of their military-related R. & D.

Chairman PROXMIRE. I see. But you do not see any problem involved in their using the Government-paid-for R. & D. in their commercial operations?

Mr. WEIDENBAUM. One of my recommendations deals with patent rights on Government contracts.

Chairman PROXMIRE. All right.

GOVERNMENT-SUPPLIED PROPERTY

Mr. WEIDENBAUM. The answer is "Yes."

The Military Establishment also supplies the bulk of the plant and equipment used by its major contractors and a major part of the working capital that they require. A survey of 13 of the largest defense contractors covering 1957-61 revealed that the cost of Government-supplied property exceeded the amount of gross company property.

"PROGRESS" PAYMENTS

During the early 1960's there was an attempt to reduce this Government investment. However, during the Vietnam war, Defense Department expenditures for additional plant and equipment to be supplied to its contractors have risen sharply, from \$56 million in fiscal year 1965 to an estimated \$330 million in 1967. Also, approximately \$5 billion of outstanding progress payments are held by defense contractors.

WORKING CAPITAL

Some individual defense firms reported that such Government supplied working capital exceeds their total book assets. Military procurement regulations provide specific incentives against the use of private working capital. Progress payments equal to 80 percent of the costs incurred on Government contracts generally are provided without interest charge to the contractor.

Chairman PROXMIRE. Do you think the recent steps taken which the Comptroller General just described to us this morning will make a significant change in this?

Mr. WEIDENBAUM. I do not believe that the changes he described will get at this question of working capital. The changes he described deal with the important question of fixed plant and equipment—decrease the Government investment in that—but I fail to see where the DoD deals with this question of working capital, and I will have specific recommendations on that.

In contrast, should these companies decide to rely on private sources for working capital, their interest payments may not be charged to the contract and, hence, must come out of their profits.

Presumably, this arrangement results in smaller total cost to the Government because of the lower interest rates paid by the U.S. Treasury on the funds that it borrows. However, the result also is to increase the extent to which public rather than private capital finances the operations of defense contractors. Hence, the financial stake that the military establishment has in its contractors is increased further.

Chairman PROXMIRE. What do you mean by working capital? Certainly, the usual concept of working capital is cash receivables and inventory. Are you talking about some other interpretation or definition?

Mr. WEIDENBAUM. I am an economist, not a CPA so I must find my layman's terms, so to speak. Essentially, what I am talking about is the inflow of funds needed by a contractor during the production period to pay his employees, his suppliers before the end product is completed and delivered to the customer. Typically, in the commercial economy the manufacturer finances the work in progress through his own funds and through loans from banks and similar financial institutions. This is not the typical case except in a small way in defense contracts. In large, particularly large, long leadtime defense procurement, the military, the Treasury Department technically, pays on a pay-as-you-go basis, as the contractor incurs the costs. Roughly 80 percent of the costs are reimbursed currently prior to the completion of production, prior to the delivery of the end item to the Government. This, as I see it, is a free provision of working capital. In the case of the commercial—

Chairman PROXMIRE. There are a lot of advantages in this and I can imagine that the contractors would be especially the smaller contractors, and medium sized contractors, would be, in serious straits if they took on a big Government contract, for them big, if they didn't have something of this kind. I have had contractors in Wisconsin, we don't have many, but the few that we have had who have desperately been trying to get the payments that still remain owing to them from the Government, and the smaller firms are really having a tough time. This is one of the elements that enables small business to get defense contracts.

Mr. WEIDENBAUM. Mr. Chairman, given the fact that if they supply their own working capital, the expense of raising and supplying their working capital comes out of the profits itself not an allowable cost, that is the key problem. This forces your defense, particularly your small defense contractors to come hat in hand asking for and depending on the promptness of the military in disbursing progress payments because they, in a sense, don't have access to private capital markets except at the penalty of the interest coming out of their profits.

Essentially, my point is here is a great opportunity for substituting private capital for Government capital. I wouldn't abolish progress payments, but I would eliminate the negative incentive against the use of private working capital.

Chairman PROXMIER. I will have to think about that one. I just don't know enough about it. It is the first time it's come to my attention and I want to look into it, it is very interesting.

Mr. WEIDENBAUM. Thank you. I should point out that the present arrangement results in a lower total cost to the Government over the long haul because of the lower interest rates paid by the U.S. Treasury on the funds that it borrows. In the short term, were we to make interest an allowable cost and substitute private capital for Government capital, we might get a substantial reduction in defense expenditures as the rate of progress payments declines.

The result, however, of the present system is to increase the extent to which public and not private capital finances the operations of contractors; hence the financial stake that the Military Establishment has in its contractors is increased further.

PROCUREMENT LEGISLATION AND REGULATION

Finally, perhaps the most pervasive way in which the Department of Defense assumes the management functions of its contractors is through procurement legislation and regulation. Pursuant to the Armed Services Procurement Act, the Armed Services procurement regulation requires military suppliers to accept on a "take it or leave it" basis many standard clauses which give the military contracting and surveillance officers numerous powers over the internal operations of these companies. These unilaterally determined grants of authority vary from matters of substance to items so minor that they border on the ludicrous. It should be realized that these restrictions generally have been imposed to prevent specific abuses which may arise; however, the cumulative and long-term impacts on company initiative and entrepreneurship are rarely considered.

The authority given to the customer includes power to review with veto power decisions as to which activities to perform in-house and which to subcontract, which firms to use as subcontractors, which products to buy domestically rather than to import, what internal financial reporting systems to establish, what type of industrial engineering and planning system to utilize, what minimum as well as average wage rates to pay, how much overtime work to authorize, and so forth. An example of the more minor matters covered in the detailed and voluminous military procurement regulations is the prescription that the safety rules followed in the offices and factories of the contractors must be consistent with the latest edition of the Corps of Engineers' safety manual.

WHAT POSITIVE STEPS CAN BE TAKEN?

In examining possible changes in military procurement, I would like to emphasize the desirability of reducing and not increasing that close, continuing dependence of the specialized military suppliers on the Defense Establishment. Some of my recommendations may be interpreted as aiding the defense companies and others as attacking them. My intent is to do neither. The purpose of the following suggestions is simply to improve the effectiveness and efficiency of military procurement.

INTEREST ON WORKING CAPITAL AS AN ALLOWABLE COST

One simple way of reducing the financial dependence of defense companies on the Government is to make interest on working capital an allowable cost on military contracts. Interest on indebtedness is certainly a standard cost of doing business and should be recognized as such. Unlike the rapid and uncertain expansion of defense work in the early 1940's, where progress payments essentially started, military contracts are now an established feature of American industry. The Treasury no longer needs to serve as banker.

Chairman PROXMIRE. You conclude that this would save rather than cost money.

Mr. WEIDENBAUM. I think it would; in the short run, it would save money. In the long run, there would be a slight increase in interest expense absorbed through the contracts. I think here it is a question of, in the long run, weighing the benefits of reducing the arsenalization, if you will.

Chairman PROXMIRE. At any rate, you think the amount of money involved is relatively small and the benefit of less dependence on the Federal Government would be worth it.

Mr. WEIDENBAUM. Yes, sir; the benefits would exceed the costs, as I see it.

STREAMLINE PROCUREMENT REGULATION

A second way of strengthening the private entrepreneurial character of defense industry firms is to streamline and reduce the variety and scope of special provisions in procurement legislation and regulations. Let defense companies develop their own safety rules to discourage employees from skidding on factory floors. We seem at times to forget why in the first place we prefer to use private enterprise rather than Government arsenals to develop and produce most of our weapon systems. It is not because private corporations are better than Government agencies at following rules and regulations—at doing it by the numbers. It is precisely for the opposite reason. We hope that private enterprise is more creative, more imaginative, and more resourceful.

Chairman PROXMIRE. I think we all agree with that but I think until we look at the specific regulations it's pretty hard; this is a generalization to say we can reduce them. After all, one of the things Congress has done in hearings like this—and legislation that develops out of them—is to require the Defense Department to provide more detailed regulations.

Mr. WEIDENBAUM. Senator, here I think is where a benefit-cost analysis is necessary.

Chairman PROXMIRE. I think this is a good constructive position. I don't differ with your view at all, but I am just wondering how we go about it.

Mr. WEIDENBAUM. I think what is needed is a broad-gaged analysis of the total impact of these procurement regulations on the defense firms, the long-term significance in terms of what happens—

Chairman PROXMIRE. You mean about every few years we ought to, if we can, could, start clean to the extent we could, wipe out all the old ones and then determine what is absolutely essential and keep that and eliminate those that are not essential for the purpose of protecting the taxpayers' enormous expenditure.

Mr. WEIDENBAUM. But I think the viewpoint, the standard of essentiality, has to be a broader one. In other words, most of the regulations that I am familiar with have come about to correct a specific real abuse that has been uncovered either by a congressional committee or by GAO or by the Pentagon itself.

However, I have failed to see the Government, either the legislative or the executive branch, take a look at the ASPR's in total and see what cumulative effect this is having on that large branch of private industry which does most of its business with the Government.

Let me give you one indication which to me was very—

Chairman PROXMIRE. Of course, one of the astonishing things is here you are, you are a brilliant professor and you have contributed greatly to our understanding, and you would think that the people who are affected by this, the defense contractors, who aren't usually shy and don't hesitate to speak their mind when they feel strongly about things, would come up and tell us.

DISENGAGEMENT AND ARSENALIZATION

Mr. WEIDENBAUM. Well, first of all, Senator, I have been very surprised in my work in the past year or two, the main thrust has been what I call "disengaging" and a little piece has been on the profitability, the defense industry has chosen to take the one aspect which they consider unfavorable and give it all their attention and publicity and ignore the part which I think corresponds to theirs as well as to the Nation's best interest, and it is this question of disengagement. Perhaps the point is they have tried in earlier years and have gotten discouraged or in a sense maybe this shows that arsenalization has proceeded further than we realize.

Chairman PROXMIRE. I think the most useful thing we can do is to try to be as specific as possible in the regulations that you either reduce or eliminate. To the extent that you do that, fine, but I think the generalization makes it very hard for us as a committee to make recommendations that are going to be, really going to have any force. The regulations, as we know, you are right, they are infinite, they are great, they are growing and too little effort is made to reduce them, but unless you at least give several pretty good hard-hitting examples in addition to that safety one—

Mr. WEIDENBAUM. Let me give you one overriding example.

Chairman PROXMIRE. All right.

MR. WEIDENBAUM. When I worked on my Ph. D. thesis in the 1950's, the ASPR's were an important source document. There was one loose-leaf binder containing the ASPR's. In doing my current analysis, I sent to GPO for the current edition of the ASPR's. I didn't get a looseleaf binder, I got two boxes. One box was the ASPR's of say, 1963, and the other box was the revisions and amendments since then. Those things have grown tremendously, and people who follow them day to day, I don't think they realize the very massive expansion in this detailed Government regulation of industry.

INCREASE COMPETITION

If I may turn to my third and final recommendation for improving the efficiency of military procurement, it is to increase competition for military contracts. I would like to offer six alternative ways of increasing the number and variety of companies competing for military business:

BROADENING OF THE COMPETITIVE BASE

1. *Broaden the competitive base.* This could be accomplished by encouraging commercially oriented companies to consider military work as a possible source of diversification for them. The two previous recommendations concerning interest on working capital and streamlining procurement procedures should help on that score. Also, defense companies could be encouraged to diversify into commercial markets. It may be natural for procurement officials to favor firms whose interests are not "diluted" by commercial work. However, the diversified company may also be the more efficient one in the long run. Certainly, the diversification of industry both into and out of the military market would reduce the present tendency for a relatively small number of companies to become primarily dependent on military business.

DESIGN IN FEDERAL LABS—COMPETE PRODUCTION

2. *Emphasize production rather than R. & D. as the major point of competition.* This could be done by doing more of the design work in Federal laboratories and making the designs available to the various private companies who would bid on the production work. Substantial precedents exist for this approach. NASA did the primary development work on the Saturn rocket booster, and subsequently commissioned private industry to produce the boosters. Alternatively, the design and development work could be done in the private sector but the companies competing for this kind of work would not be permitted to bid on production contracts.

BREAKOUT SUBSYSTEMS

3. *Break out more subsystems for competition.* Even during the heyday of the weapon system contractor concept, some key subsystems were supplied separately, notably aircraft engines. More attention to breaking out major elements, either during the development or production stages, might increase the number and types of firms competing for prime contracts.

WIDEN PARTICIPATION IN SUBCONTRACTS

4. *Widen the participation in subcontracts.* Much of the subcontract dollars go to companies that are prime contractors on other systems. More attention in the award of subcontracts could be paid to small business and other industries not actively participating in the military market as primes.

REDUCE COMPETITIVE ADVANTAGE OF GOVERNMENT ASSETS

5. *Reduce the competitive advantage of using Government assets.* Some thought should be given to reducing the competitive advantages that accrue to the dominant primes that hold on to Government-owned plant and equipment for long periods of time. Please note Mr. Staats' work in this area which should help. The free provision of these assets also explains their high-profit rates. The simplest approach, of course, would be to curtail the practice of furnishing plant and equipment to long term Government contractors and, instead, to give them greater incentives to make their own capital investments.

TIGHTEN PATENT POLICIES

6. *Tighten patent policies.* In general, contractors get to keep free of charge the patent rights they obtain from research on Government contracts. This, of course, puts the "ins" at a competitive advantage over the "outs." It is interesting to note the double standard. When these same contractors award contracts to research institutes, they insist that the client and not the contractor retain the patent rights.

I would like to suggest that substantial study and attention be given to the pros and cons of these alternative means of improving the efficiency of military procurement. The end result—promoting competition and reducing concentration in the military market—would simultaneously strengthen both our national security and the private enterprise system.

Essentially the study of the economic impact, of the efficiency of military procurement faces the important task of using the alternative means of improving efficiency without either converting the companies to unimaginative arsenalized operations or letting them obtain windfall profits because of the Government's inability to drive hard enough and intelligent enough bargains. The answer is neither simple nor apparent. In part, however, it does lie in governmental policymakers and administrators constantly being aware of the need to steer that difficult middle course between Government arsenalization of industry, on the one hand, and private interests obtaining high profits unrelated to either the investments they have made or the risks they have borne on the other.

Thank you, Mr. Chairman.

GOVERNMENT IN-HOUSE CAPABILITY

Chairman PROXMIRE. How would you feel about Government's in-house capability in keeping the ability to use its arsenals, and so forth, to produce weapons, and having production facilities available as a check against the efficiency and so forth of the contractors? Do you

have any notion on how much it should maintain for that purpose?

Mr. WEIDENBAUM. I can't get very enthusiastic, in most cases, of having military arsenals where we have competitive commercial markets. I have done a little analysis of the areas where we have arsenals and where we don't, and I am intrigued by the fact that very sensibly where such cases as in automobiles we have large arrays of alternative firms who will produce trucks, autos, motor vehicles, we have not developed and apparently there is no need for Government arsenals. Hence, to the extent that we have a competitive private economy, which I would assume is a desirable end product in its own, this reduces the need for maintaining arsenals.

There is another economic criterion—which can do the task more effectively and cheaper. There is a Budget Bureau circular, of course, covering essentially nondefense areas, talking about Government competition with business, and the standard as best as we can measure it is for a given dollar outlay will the Nation get more defense in this case, more weapons systems if they are produced in the private sector or in the public sector. I think the best check is not to set up two competing alternative production systems, one public and one private, but to make sure that our private enterprise system is sufficiently competitive that we do have a wide enough array of private firms competing for Government business that our objectives of economy and efficiency are adhered to.

NEED FOR MORE INFORMATION

Chairman PROXMIRE. This is a very, very fine paper, most useful, and I especially appreciate the specific recommendations you make on improving the procurement practices. Certainly, however, in order to make these effective, we do need more information.

For example, you stress widening the participation in subcontracts. We don't even know, as you pointed out, since 1963, how much is subcontracted. It is very hard for us to make much of a case in some of these instances where we don't have the data, we don't have the information. It is hard for us to really know what we are talking about. You make a strong argument in general terms we don't have subcontracting sufficiently, but it is very hard to prove the point, isn't it, without that data?

Mr. WEIDENBAUM. I think it is a very legitimate question to ask the Defense Department when they testify.

Chairman PROXMIRE. This would be very important, it seems to me at least of equal importance, for more independent business to be engaged in subcontracting.

Mr. WEIDENBAUM. Precisely.

Chairman PROXMIRE. So we can get more competition. It is very hard to argue with people who say you can't expect 100 or 150 firms to compete for a big missile system. Of course, you can't. But you can expect many firms to compete for the component parts that go into it that can be subcontracted, with strong, vigorous, and effective subcontracting programs to do it with.

Mr. WEIDENBAUM. One of the things that would be helpful to know is whether the subcontract ratio is held up at 50 percent, to what extent are these subcontracts going from one of the top 100 defense contractors to another one of the top 100 defense contractors to another one of the top 100 defense contractors.

Chairman PROXMIRE. That is significant, and also of great significance, it seems to me, is to what extent the subcontracting system itself is competitive. In other words, if you subcontract to one firm on a sole-source basis, that may or may not be helpful. If you ask for advertised bidding for your subcontracts to the extent that you can break them down that way, this can be a very significant element in reducing the costs.

Mr. WEIDENBAUM. And I believe the first step is, as you indicated, to get more information into the public records so we can make some intelligent analyses of competition for subcontracts.

Chairman PROXMIRE. Professor Weidenbaum, thank you very very much.

We will resume our hearings tomorrow in this room at 10 o'clock when we will hear from Mr. Knott of General Services Administration, Mr. Malloy of the Defense Department, and Mr. Petty, also of the Defense Department.

The committee will stand in recess until 10 o'clock tomorrow morning.

(Whereupon, at 12:55 a.m., the committee recessed until Tuesday, November 12, 1968, at 10 a.m.)

ECONOMICS OF MILITARY PROCUREMENT

TUESDAY, NOVEMBER 12, 1968

CONGRESS OF THE UNITED STATES,
SUBCOMMITTEE ON ECONOMY IN GOVERNMENT
OF THE JOINT ECONOMIC COMMITTEE,
Washington, D.C.

The subcommittee met, pursuant to recess, at 10:05 a.m., in room 1202, New Senate Office Building, Hon. William Proxmire (chairman of the subcommittee) presiding.

Present: Senator Proxmire.

Also present: John R. Stark, executive director; and Richard Kaufman, economist.

Chairman PROXMIRE. The Subcommittee on Economy in Government of the Joint Economic Committee will come to order.

We are happy to welcome as our first witness this morning the distinguished administrator of the General Services Administration, Mr. Lawson B. Knott, and his staff. Mr. Knott, go right ahead.

STATEMENT OF HON. LAWSON B. KNOTT JR., ADMINISTRATOR OF GENERAL SERVICES ADMINISTRATION; ACCOMPANIED BY JOE E. MOODY, DEPUTY ADMINISTRATOR; HARRY R. VAN CLEVE, GENERAL COUNSEL; H. A. ABERSFELLER, COMMISSIONER, FEDERAL SUPPLY SERVICE; AND JOHN G. HARLAN, JR., COMMISSIONER, PROPERTY MANAGEMENT AND DISPOSAL SERVICE, GENERAL SERVICES ADMINISTRATION

Mr. KNOTT. Thank you, Mr. Chairman.

It is a pleasure to be with you and to bring to this hearing some of the principal members of my staff: my deputy, Mr. Joe Moody, on my left; Commissioner Abersfeller, of our Federal Supply Service; Commissioner Harlan of our Property Management and Disposal Service; and Mr. Harry Van Cleve, our general counsel.

PROGRESS IN DEVELOPING THE NATIONAL SUPPLY SYSTEM SUPPLY SUPPORT RESPONSIBILITY

We have tried, Mr. Chairman, to pick up some of the items of particular interest from the prior hearings and since my last report which was in November of 1967, the Department of Defense has transferred supply support responsibility to GSA for approximately 17,000 items. The inventory value of these items is \$43 million with projected annual sales of \$86 million. Since 1962, some 68,000 items in 65 pri-

mary GSA Federal supply classes with an inventory value of \$142 million and a projected annual sales volume of \$189 million have been transferred from the Department of Defense to GSA for supply management.

SUPPLY MANAGEMENT FUNCTIONS

Several Supply Management functions previously performed by the Defense Supply agency in these 65 classes were also transferred to GSA. These functions include coordinated procurement of certain military managed items, provisioning support, management of general mobilization reserves, industrial mobilization planning, and procurement support for overseas Army and Air Force activities on selective items which they may not procure overseas due to gold flow restrictions.

COMMERCIAL VEHICLE PROCUREMENT

Agreement was also reached between DOD and GSA to transfer the DOD procurement responsibilities for commercial passenger carrying vehicles and trucks up to 10,000 pounds gross vehicle weight from the Department of the Army to GSA. This transfer of responsibility, effective July 1, 1968, consolidated the procurement of approximately 28,000 military vehicle requirements totaling about \$60 million with the GSA civil agency procurement of about 30,000 vehicles approximating \$73 million annually. Combined annual requirements amount to about 58,000 vehicles at an estimated value of \$133 million. All of this, of course, is in furtherance of the concept of development of the national supply system.

FUTURE ACTIONS

Future actions in our continuing implementation of the national supply system include a joint review of 54 additional Federal supply classes now managed by the Defense Supply Agency to determine primary management assignment. Representative commodities are lumber, air purification equipment, insecticides and rodenticides, books and pamphlets. In addition, actions are underway to eliminate or reduce to a minimum approximately 1,000 dual managed items stocked in the GSA and DSA supply systems. We are also participating in a joint study with DOD to determine the best method to provide support for spare parts, components, and tires and tubes covering those vehicles procured by GSA. We expect to complete this study early in the spring of 1969.

Of course, the system works the other way, too, and this is illustrated in the next subject of fuel transfers.

FUELS TRANSFER

A time-phased plan was initiated July 1, 1968, for DSA support of civilian requirements for fuel. Assumption by DSA of depot stocked packaged fuel products support is scheduled for January 6, 1969. Gathering of civilian requirements data and the establishment of new DSA regional contracts for bulk fuel products is in process. Estimated value of contracts being transferred is \$100 million for fiscal year 1970. Transition of support for bulk fuels as distinguished from packaged fuels is scheduled for completion on November 1, 1969. This extended

schedule provides for continuity of Government-wide support without disruption of current GSA or DSA contractual arrangements.

ELECTRONICS TRANSFER

In the field of electronics, the assumption by DSA of support of civilian agency requirements for electronic items scheduled to be effective November 1, 1968, has been delayed pending a determination of agency responsibility for preparation, publication and maintenance of catalog material.

We are continuing our efforts with concerned agencies to find a solution to these cataloging problems and expect to have the matter resolved by the end of this fiscal year.

SUBSISTENCE STUDY

In coordination with VA, DHEW, and DSA, we have made substantial progress toward standardization of subsistence, and in establishing the framework for expanded utilization of subsistence by civil hospitals and institutional agencies and by military hospitals.

We are pleased to report completion of the standardization program for perishable subsistence and both military and civil agencies have concurred in the publication and use of a "Subsistence Guide for Hospital Feeding Programs." This subsistence guide is being printed and will be distributed in December 1968 to all hospitals and agencies with institutional feeding programs at which time DSA will be the primary source of supply for these perishable subsistence requirements. In the meantime, 60 VA and PHS hospitals and four large Indian schools have been using DSA by cross-servicing agreements as an optional source of supply. DSA sales to these activities amounted to \$3.4 million in fiscal year 1968 as compared to sales of \$2.0 million in fiscal year 1967.

The standardization of nonperishable subsistence was begun in January 1968, with participation of VA, DHEW, and DOD. We expect to complete this standardization effort by December 31, 1969, at which time assumption of centralized Government-wide supply responsibility will be reconsidered by DSA.

MEDICAL ITEMS STUDY

A commonality study of medical materiel as used by DOD, VA, and DHEW was initiated in February 1968. Professional medical officials in VA and DOD must determine the extent to which common specifications and standardized application can be achieved. There are approximately 14,000 medical items in the DSA and VA supply system many of which are technical in nature and require extensive examination. This study is expected to be completed by June 30, 1970, at which time we will have a basis for determining whether there are advantages of centralized Government-wide management.

TRUTH IN NEGOTIATIONS

Your committee's April 1968 report recommended legislative action—consistent with DOD Defense Procurement Circular No. 57, No-

vember 1967—to insure that contracting officers or their authorized representatives have a postaudit right of access to performance records of contractors holding contracts on which certified cost or pricing data were required to determine whether defective cost or pricing data had been submitted. The postaudit provision of Defense Procurement Circular No. 57 was made a statutory requirement by Public Law 90-512, approved September 25, 1968, which amended that portion of the Armed Services Procurement Act relating to truth in negotiations.

The report of your committee also recommended that GAO and GSA take steps to insure that our Federal agencies adopt the provisions of Defense Procurement Circular No. 57.

Federal procurement regulations providing for postaudit access to contractor records and a complete updating of coverage with respect to the requirements for cost or pricing data which is consistent with the requirements of Defense Procurement Circular No. 57 (as codified in ASPR Revision No. 30, September 1968) and the requirements of Public Law 90-512 have been drafted, circulated to agencies for comment, and are now being readied for publication. It is expected that the revisions will be published in the FPR by the end of November.

INVENTORY MANAGEMENT

We consider the function of inventory management to be one of the most important elements of any supply system. Therefore, we have placed great emphasis upon improving the methodology used in requirements determination, acquisition, management, and utilization of items handled through our storage and distribution system.

NATIONAL INVENTORY CONTROL CENTER

Through our National Inventory Control Center nationwide stocks are made available to meet needs which cannot be satisfied from stocks within a given region. Stocking patterns are being varied based on regional demand coupled with an automatic order referral system to assure reliable supply service.

A computer-oriented redistribution and disposal system has been developed which automatically directs redistribution of stocks based on transportation costs, weight, and location of demand to assure the most economical utilization of total inventories.

In addition we are currently working on improvements in the areas of leadtime forecasting, development of safety levels, and refining economic criteria used in the decisionmaking process.

ADVERTISED VERSUS NEGOTIATED PROCUREMENT

Turning now to the matter of advertised versus negotiated procurement of supplies and equipment in fiscal year 1968, procurement dollars expended by GSA totaled \$709 million (excluding \$51 million procured from mandatory Government sources).

Chairman PROXMIRE. I must interject here, Mr. Knott, to point out that what you have in your statement here seems to be contradicted by the testimony yesterday of the Comptroller General. In your statement you say GSA procurement dollars totaled \$709 million for fiscal

year 1968 of which 74 percent or \$528 million was spent on a publicly advertised competitive bid basis.

Yesterday we had testimony from GAO to the effect that only 52 percent of GSA procurement last year was spent on a competitive bid basis, and let me say that this is not simply something that GAO pulled out of the air without reference to your own figures. They took your own chart which is prepared by the General Services Administration, Office of Finance, entitled "Procurement by Civilian Agencies 12 Months Ended June 30," which shows total amount of procurement for fiscal 1968 of \$1,059,433,839. It shows advertised, total amount advertised, had competitive procurement \$550,695,000.

Now, this, as I say, was taken by GAO from your own publications. It seems to be an accurate computation that your procurement, competitive procurement, has diminished, as it shows on a chart which they prepared all from your own data, that whereas in 1963, 73 percent of your procurement was competitive; 64 percent in 1964; 1965, 54 percent; 1966, 54 percent; 1967, 58 percent; and this year only 52 percent. Now, how do you explain that in view of the fact that GAO took that from your own data?

Mr. KNOTT. I am convinced, Mr. Chairman, that almost any statistical report that is not accompanied by a narrative report, particularly in a complex field of this kind, leaves something to be desired. We have been aware of that in recent discussions with GAO, and we are going to develop a narrative report which I think will be more informative for everyone concerned.

Mr. Abersfeller has gone into this thoroughly and I believe that he can provide you with the basic rationale behind these statistics. I think one of the problems is that we are dealing with advertised versus negotiated in its broadest sense when quite often negotiation follows advertising.

Chairman PROXMIRE. What we are trying to do though is to get comparable figures, to find out what has happened to your advertised competitive bidding, which is one kind that almost all Members of Congress recognize—members of the public recognize—being completely competitive.

When you have negotiated competitive, there is some question. There is some question as to how effective that kind of procurement is, at least cost data are much more important in assessing it, and they have taken figures which, as I say, come from your own reports.

And they have tried very hard to make them comparable from your own reports and they do show this diminution in advertised competitive bidding over this period.

Mr. KNOTT. Well, if you will allow me, Mr. Chairman, I would like Mr. Abersfeller to comment on this. I think the changing of certain types of purchases has some bearing on this.

Chairman PROXMIRE. It may be an explanation, but I want to know whether or not their figures, their taking of your figures, is correct or whether the figures you gave me just this morning are correct.

MISTAKE IN COMPUTATION

Mr. ABERSFELLER. The figures are not the same, Mr. Chairman. In the first instance there was a \$110.3 million mistake in the report that you have. That has been corrected.

Chairman PROXMIRE. From this?

Mr. ABERSFELLER. Yes, sir; that figure should be \$949 million—\$949,105,717.

Chairman PROXMIRE. You mean instead of the total procurement being \$1,059 million it should be—

Mr. ABERSFELLER. \$949,105,717.

Chairman PROXMIRE. How did you make that big a mistake? It is a pretty big one.

Mr. ABERSFELLER. The particular procurement involved was procurement we had negotiated for the Air Force's so-called phase II procurements on automatic data processing equipment. Under the ground rules of this report, orders which are placed against contracts let by other agencies are to be reported by the agency placing the order and not the agency making the contract.

SMALL BUSINESS SET-ASIDES

In addition we have always considered in our previous testimony before this committee that small business set-asides are, in fact, competitive advertised procurements.

Chairman PROXMIRE. Well now, you have those small business set-asides on this sheet under a heading labeled negotiated procurements. This is your own determination.

Mr. ABERSFELLER. Mr. Chairman, this report is primarily for the Small Business Committee. Treating small business set-asides as negotiation could be correct when we consider that they qualify as negotiation under section 302(c)(1), one of the 15 exceptions to advertising permitted by the Federal Property Act. As a practical matter, however, they are not negotiated. They are awards which result from restricted advertising (100 percent set-aside), or partial set-asides after advertising. These procurements are advertised in precisely the same fashion as others are, except that only small businesses are eligible to receive awards on total or partial set-asides.

Chairman PROXMIRE. The important thing to me is whether it is comparable and if you have treated small business set-asides as advertised competitive bidding in the past, consistently in the past, then you are absolutely correct to do it this time. If you have treated them as negotiated in the past then if we want a comparable figure to determine what is happening to your procurement we have to treat them the same.

Mr. ABERSFELLER. Exactly, and we have treated them as advertised in our past testimony. Our records reflect—

Chairman PROXMIRE. Then, did your own GSA people make a mistake in putting this together—did they include small business set-asides as competitive procurement in 1963, 1964, and 1965, and then drop it in 1966?

Mr. ABERSFELLER. I don't know the figures that you have, Mr. Chairman. I do know this that the 52 percent that was spoken to yesterday does treat small business set-asides as having been negotiated.

There is another minor problem here—

Chairman PROXMIRE. You mean it does treat it as having been negotiated and excludes it?

PROCUREMENT FROM ESTABLISHED SOURCES

Mr. ABERSFELLER. That is right. It does treat it as having been negotiated which we think is wrong.

There is another minor problem. At the extreme right of the report there are three columns headed "From Established Sources." These are procurements which are ordered by agencies against Federal Supply Schedule contracts and if one were to do this precisely that total figure should be deducted from the total procurement figure before the percentages are drawn. With that understanding, our GSA-wide percentages of advertising procurement, considering small business set-aside as having been advertised, range from 78 percent in 1964, to 76 percent in 1968. The figures we were talking about in the administrator's testimony this morning, are for the Federal Supply Service alone.

Chairman PROXMIRE. Give me the figure in the first place for total procurement for 1963 through 1968 and then give me the figure for your competitive advertised procurement.

Mr. ABERSFELLER. I don't have the figure for 1963, Mr. Chairman. I start with 1964 in my data.

Chairman PROXMIRE. All right, let me have it.

Mr. ABERSFELLER. The total procurement on the adjusted basis was \$837.3 million for 1964. Of that \$654.2 million was advertised.

Chairman PROXMIRE. All right.

Mr. ABERSFELLER. Percent advertised was 78 percent.

Chairman PROXMIRE. All right, sir.

Mr. ABERSFELLER. \$183.1 million was negotiated.

Chairman PROXMIRE. Do you have them for the next—give them to me just for 1968.

Mr. ABERSFELLER. 1968, \$895.8 million, this is GSA-wide.

Chairman PROXMIRE. All right.

Mr. ABERSFELLER. Advertised was \$682.4 million, 76 percent advertised; \$213.4 negotiated.

Chairman PROXMIRE. To the best of your knowledge, these are strictly comparable figures?

Mr. ABERSFELLER. Yes, sir.

Chairman PROXMIRE. They are on the same definition all along?

Mr. ABERSFELLER. Absolutely comparable figures.

Chairman PROXMIRE. You see what concerns the staff, and which they have called to my attention, this seems to be a very, very small increase in procurement over a period of years in which the Federal Government was tremendously increasing its expenditures. The budget 1964 to 1968 is a very big increase. This is a very modest increase, and it seems that perhaps something was inadvertently omitted.

Mr. ABERSFELLER. No, sir; these are actual, accurate comparable figures.

Chairman PROXMIRE. If that is the best you can do let's go ahead.

PROCUREMENTS UNDER \$100 EXCLUDED

Mr. ABERSFELLER. Mr. Chairman, I want to point out certain things this report does exclude, certain minor data. For instance it excludes procurements under \$100.

Chairman PROXMIRE. All I can ask is that the computation be as comparable as possible.

FOREIGN PROCUREMENTS EXCLUDED

Mr. ABERSFELLER. It excludes foreign procurement.

Chairman PROXMIRE. The only observation I can make we have had a strong thrust in Government for more competitive procurement. It has deteriorated absolutely, very slightly, 78 percent to 76, but we haven't made any progress. What is the reason for that?

SOME ADVERTISED PROCUREMENTS REJECTED

Mr. ABERSFELLER. In some instances we often reject all bids after advertising and negotiate them, to get better prices.

Chairman PROXMIRE. The reason I raise this is many people would say after all 76 percent that is terrific. Defense has a tough time getting competitive bidding because they procure different items. They procure big missile systems and so forth. GSA, as I understand it, has a greater opportunity to get advertised competitive bidding because of the relatively smaller items that you procure.

Mr. ABERSFELLER. But we do have circumstances where we first set out to advertise and then negotiate because the prices bid under advertising are not, in our view, reasonable. We have the circumstance of standardization of motor vehicles used overseas, which results in sole source procurement or negotiation. As you know we procure for the State Department, Peace Corps and AID overseas. We buy the fertilizer required for use overseas by the Agency for International Development, and because of the specifications problems involved, these purchases must be negotiated. We have, I think, a good system for assuring ourselves that we do not negotiate for supplies which can be competitively advertised.

NEED FOR DEVELOPMENT SPECIFICATIONS

We have changed procurement method for about 13 items from negotiated procurement to advertising. Magnetic tape is one of the items. There was a time about a year ago that our magnetic tape was bought on what we call a multiple award schedule, which was negotiated. Last January we entered into a contract on a competitive basis. Incidentally we saved nearly \$9 million in the process since we were, for the first time, able to develop specifications. I don't think we ought to suggest to the committee, Mr. Chairman, that we are at the end of this. We do have a resource problem in the development of specifications. You cannot get competition unless you can develop specifications which apply equally to all bids. It is in this effort that we are now concentrating our work.

Chairman PROXMIRE. Thank you very much. Go ahead, sir.

Mr. KNOTT. We were dealing with the percentages of advertising for supplies and equipment. Seventy-four percent or \$528 million of the total including all small business set-asides was expended on a publicly advertised competitive basis.

Chairman PROXMIRE. Could I just interrupt, Mr. Knott, to say that the staff has suggested to me, I think very wisely, that we ought to have

data for all these years 1963 to 1968 for the record so we can reconcile them and be exactly sure what we are talking about because there has been a very serious conflict between two authoritative agencies in the Government on whom we all rely and you testified, Mr. Abersfeller has testified, that this table that you put out was seriously mistaken in at least two respects so we ought to get the data clear and comprehensive so that we can compare it.

Mr. KNOTT. We will go back to each of those fiscal years from 1964, we will explain—

Chairman PROXMIRE. 1963.

Mr. KNOTT. What the figures were reported and what they should have been.

Chairman PROXMIRE. We would like them from 1963.

Mr. KNOTT. Yes, sir.

(The following table was subsequently supplied by Mr. Knott:)

GSA TOTAL PROCUREMENT, ADVERTISED AS A PERCENT OF TOTAL—BASED ON "REPORT ON PROCUREMENT BY CIVILIAN EXECUTIVE AGENCIES," STANDARD FORM 37

	Fiscal year 1963		Fiscal year 1964		Fiscal year 1965		Fiscal year 1966		Fiscal year 1967		Fiscal year 1968	
	Actual	Reported	Actual	Reported	Actual	Reported	Actual	Reported	Actual	Reported	Actual	Reported
Total GSA	\$812.2	\$812.2	\$848.8	\$848.8	\$930.0	\$930.0	\$1,050.1	\$1,050.1	\$1,095.0	\$1,095.0	\$949.1	
Minus estimated sources	-6.0		-11.5	-11.5	-63.0	-63.0	-129.5	-129.5	-65.9	-65.9	-53.3	
Adjusted GSA total	806.2	812.2	837.3	837.3	867.0	867.0	920.6	920.6	1,029.1	1,029.1	895.8	709.0
Total advertised	593.6	593.6	542.7	542.7	506.4	506.4	567.4	567.4	633.3	633.3	550.7	454.0
Set-asides (advertised)	+59.4	+59.4	+111.5	+111.5	+160.6	+160.6	+138.6	+138.6	+142.7	+142.7	+131.7	+74.0
S.B. of "other" negotiated	+79.4	+79.4	+103.2	+103.2								
Total advertised	653.0	732.4	654.2	757.4	667.0	667.0	706.0	602.0	776.0	776.0	682.4	528.0
Advertised percent of total GSA	81	190.2	78	190.5	77	77	77	83	83	83	75.4	74

¹ The percentages of 90.2 percent for fiscal year 1963 and 90.5 percent for fiscal year 1964 incorrectly included "other" negotiated purchases from small business as "advertised" on the assumption that such purchases would normally be made on a competitive basis although not formally advertised. The adjusted figures are 81 percent for fiscal year 1963 and 78 percent for fiscal year 1964.

² The 83 percent for fiscal year 1966 was FSS only and was incorrect. The adjusted figure for total GSA is 77 percent.

³ 75 percent rounded down.

⁴ Actual for fiscal year 1967 was 75.4 percent rounded to 76 percent. Should have been rounded to 75 percent.

⁵ The percentage of the 74 percent reported for fiscal year 1968 was also FSS only and included only purchases actually paid by GSA funds. The adjusted GSA wide figure is 76 percent.

Note: The adjusted percentages for total GSA purchases shown in the "act" column in each fiscal year (1) excludes purchases from established sources which cannot be split between advertised and negotiated, and (2) includes all small business set-asides as "advertised." Explanation of differences from previously reported percentages are set forth above.

Mr. KNOTT. Twenty-six percent or \$181 million of the total was expended on a negotiated basis and includes \$25 million procured under multiple-award schedule contracts and \$156 million in other negotiated procurements including—

\$34 million in purchases under \$2,500;

\$122 million in purchases where excessive prices or nonresponsive bids were received after formal advertising, authority of AID not requiring advertising was used, the public exigency would not permit of the delay incident to formal advertising, and other authorized exceptions.

While this \$154 million in procurements by GSA are properly reportable as negotiated, I wish to emphasize what Mr. Abersfeller has said, that the methods and procedures under which these procurements are made require the maximum publicity and competition consistent with the particular circumstances of each transaction.

FEDERAL SUPPLY SCHEDULE CONTRACTS

GSA also enters into Federal supply schedule contracts and other contracts against which using agencies place orders. Federal supply schedule contractors have reported that orders received during fiscal year 1968 totaled \$1,179 million, of which \$173 million were under publicly advertised contracts and \$1,006 million were under negotiated multiple-award contracts. A contract in the amount of \$110 million was also negotiated covering ADP equipment for the Air Force against which they will place orders. In addition, GSA made contracts totaling \$5 million where payment was made direct to contractors by using agencies.

I wish to assure you, Mr. Chairman, that we will continue to require the use of formal advertising procedures to the maximum extent possible. This includes the further development of our specifications.

AUTOMATIC DATA PROCESSING INVENTORY

In accordance with Bureau of the Budget Circular A-83, April 20, 1967, which established the requirement for an ADP management information system, we have completed and are maintaining a Government-wide inventory record of ADP equipment and other management data such as cost and utilization. This inventory includes all Government-owned and Government-leased ADP equipment and such equipment that may be Government furnished to contractors. It does not include analog computers or electronic data processing equipment which is built or modified to special Government design specifications and is integral to a weapons system. The last complete submission of all inventory data by Federal agencies, now in the data bank, was as of June 30, 1967. However, the ADP equipment inventory is being maintained on a current basis through agency submissions and GSA processing of actual gains and losses of equipment as each inventory change occurs. Based on submissions by agencies of such inventory change data since June 30, 1967, there were 3,905 computers in the Government located in 1,492 organizational units as of June 30, 1968. This compares with 3,692 computers in 1,353 organizational units reported by agencies as of June 30, 1967.

ADP COST REPORTING EXCLUSIONS

ADP cost reporting requirements of BOB Circular A-83 exclude: (1) analog computers, (2) computers built to Government specifications and integral to a weapons system, (3) computers at classified locations, and (4) process control computers.

ADP COST REPORTS

Costs required to be reported are salaries; equipment rentals, purchases, supplies and maintenance; site preparation; and contractual and reimbursable services. The total such costs reported by agencies from fiscal year 1963 through fiscal year 1967 and the amounts of these costs for the Department of Defense are shown in table I, appended to this statement. Actual costs for fiscal year 1968 are currently being compiled.

BOB also required agencies to resubmit all inventory data and other required data as of June 30, 1968. We have recently received the last agency submission and are currently assembling, editing, and processing this data covering fiscal year 1968. We expect to issue a printed inventory and related management reports within a month.

ADP AND GOVERNMENT-OWNED EQUIPMENT

In addition, continuing analysis of the current data is being made in order to provide for maximum use of Government-owned equipment in lieu of making new procurements and in reaching well-informed management decisions in the areas of ADP procurement and resource utilization. The management information system has been used in a number of instances to determine the best buys that should be made using the ADP fund. Through the use of this information and the fund, we have been able to effect purchases during fiscal year 1968, which will result in reduced costs estimated at \$4 million over the period of planned use of the equipment. The management information system data will continue to be used for decisionmaking in the Governmentwide automatic data processing program and we have established a system which will permit quick response to all day-to-day management and information needs.

ADP SHARING

In fiscal year 1968, ADP sharing is estimated at \$70.6 million at commercial rates and was accomplished at a Government cost of about \$48.6 million, which resulted in an estimated cost avoidance of \$22 million as compared to fiscal year 1967 comparable amount of \$17.2 million. The \$48.6 million of Government cost includes an estimated \$10.8 million of sharing which was provided to Government agencies on a nonreimbursable basis.

EXCESS ADP

Government-owned ADP equipment declared excess to the needs of owning agencies having an acquisition cost of \$52.8 million was reassigned during fiscal year 1968 to Federal agencies thus avoiding new procurement. This includes reassignment of Government-owned excess

equipment to authorized Government contractors as Government furnished equipment to be used in the performance of their contracts. These reassignments have the effect of reducing purchases of equipment chargeable to the Government. In addition, equipment costing \$10.4 million was donated to State agencies for educational or other purposes.

FEDERAL DATA PROCESSING CENTERS

On July 1, 1968, the 11 GSA internal regional data processing centers were converted to Federal data processing centers to provide available services to all Federal agencies. Other agency operated Federal data processing centers include the National Bureau of Standards which has been operating under a delegation of authority from GSA since July 1967. This center services NBS and a large number of agencies and departments in the Washington metropolitan area. GSA has also delegated to NASA for fiscal year 1969 authority to operate a Federal data processing center at Huntsville, Ala. In fiscal year 1970, the first full year of operation of this center by GSA, we project a potential reduction in user costs of \$687,000.

ANNUAL EXPENDITURES FOR ADP

Chairman PROXMIRE. At this point I would like to ask about the ADP. We had testimony last year from Mr. Staats in which he answered a question from Congressman Curtis who asked:

What is it we spend now, about \$2 billion a year for computers or is it above that figure now?

Mr. Staats:

If we include the classified weapons and uses of them it is a little over \$3 billion but for direct Government costs it is around \$2 billion.

Now, I note not only in your testimony which was given us but in a table, table I, you show that in 1967 that the total cost DOD and, I guess the total you have got is \$1,495 billion; is that correct?

Mr. KNOTT. Yes.

Chairman PROXMIRE. Would I add \$925 million to that or is it included? Why is there this discrepancy—Mr. Staats saying it was \$3 billion overall, and direct Government costs around \$2 billion?

COST OF CLASSIFIED ADP NOT REPORTED

Mr. KNOTT. Our data, in accordance with the BOB circular, excludes analog computers, computers built to Government specifications and integral to a weapons system, computers at classified locations, and process control computers.

Chairman PROXMIRE. Why are those excluded?

Mr. KNOTT. We feel that the report would not be as useful a management tool, if those computers were included.

Chairman PROXMIRE. Well, is the amount that we have involved classified? Mr. Staats gave us a rough estimate of what it was. I presume it wasn't an infringement of classification?

Mr. KNOTT. I don't think it is the amount.

Chairman PROXMIRE. This would be very interesting and useful to us if we knew how much the Government was investing in this overall system.

1964 ESTIMATE: \$3 BILLION

Mr. KNOTT. Mr. Abersfeller, do you have any more definitive information than this on what it might be?

Mr. ABERSFELLER. Yes, sir.

The Comptroller General's estimate, in his testimony last year, Mr. Chairman, was based on an estimate contained in a Bureau of the Budget report to the President in 1965. This report resulted from a study in 1964 under the guidance of an advisory committee headed by Mr. Ramspeck and a project staff headed by Mr. Clewlow who is now with the Department of Defense. They estimated the Government's costs for the business kind of computers we are talking about were \$1 billion.

Chairman PROXMIRE. That was back in 1964?

Mr. ABERSFELLER. Yes, sir.

They had also estimated that contractor-owned, contractor-operated equipment, dedicated to Government work was equal in size. They also estimated that the classified and unique military applications computer total was equal to the other two groups (\$1 billion more). It was generally estimated to total \$3 billion for 1964.

1967 ESTIMATE: \$3.5 BILLION

Now, if those two estimates are accurate, you would add \$2 billion to the figures we have shown you and it would be approximately \$3.4 billion for 1967.

Chairman PROXMIRE. Your estimate then is \$3.4 billion overall for all of these, in all of these, categories?

Mr. ABERSFELLER. That is predicated on the accuracy of the 1964 estimate, but our 1967 figures include contractor-owned computers.

Chairman PROXMIRE. But one of the categories involving at least a billion dollars or more is the contractor-owned?

Mr. ABERSFELLER. The contractor-owned.

Chairman PROXMIRE. Which is devoted to Government contracts?

Mr. ABERSFELLER. That is correct, yes, sir.

Chairman PROXMIRE. So if you exclude that the actual Government-owned would be in the area of around \$2 billion or a little more, between \$2 and \$2½?

Mr. ABERSFELLER. It would be \$2,495,000,000 if the current estimate is correct.

Chairman PROXMIRE. I see.

Then you would say the Federal Government is spending how much each year on ADP overall?

Mr. ABERSFELLER. Well, we know in 1967 it was approximately a billion and a half—\$1,452 billion. Again, if those earlier estimates are correct—

Chairman PROXMIRE. This is unclassified? We are also spending at least a billion on the classified.

Mr. ABERSFELLER. We don't have any cost data on classified. But if the \$1 billion of the \$3 billion in the 1964 document for unique military applications were added to the \$1,495,000,000 in our 1967 data, then the Federal Government was spending nearly \$2½ billion for computers in 1967.

UNUSED ADP

Chairman PROXMIRE. There have been charges, I know you are familiar with them, that automatic data processing equipment has been lying unused in some places while in great demand in others. How does the Government make sure that this expensive equipment is used to its fullest extent so that the taxpayer gets full value? You have indicated to some extent you are holding down procurement but this is expensive as well as being desirable because it increases productivity and efficiency. How do you hold down your costs in this area?

Mr. ABERSFELLER. One of the things we find most useful is the management information system about which the Administrator has testified, Mr. Chairman. Among other things, the management information system tells us machine by machine as to its use, and in working in close coordination with the Department of Defense, NASA, and AEC who are the three principal users of ADP, we are slowly but surely making more utilization of the equipment at hand.

COMPARISON OF GOVERNMENT AND PRIVATE ADP UTILIZATION

Chairman PROXMIRE. Do you have enough information now so you can compare the utilization of Government-owned computers with the utilization of private computers?

Mr. ABERSFELLER. We have no information at the moment on utilization of private computers, Mr. Chairman.

Chairman PROXMIRE. Isn't that, or shouldn't that be, fairly readily available?

Mr. ABERSFELLER. I don't know.

Chairman PROXMIRE. It would be an interesting comparison if it doesn't cost too much to get it, and I should think it might provide some kind of guidance.

Mr. ABERSFELLER. I think we should make an effort. I would like to point out—

INCREASED UTILIZATION OF ADP

Chairman PROXMIRE. Also more pertinent perhaps to know how the utilization factor has been proceeding over time, for the last 4 or 5 years. Have we been using, do you know, have we been using the ADP more, a greater proportion of the time that it is available?

Mr. ABERSFELLER. Our utilization has gone up for our computers in the last 3 years that we—

Chairman PROXMIRE. Can you give me figures on that?

Mr. ABERSFELLER. I don't have them with me, I would like to provide them for the record.

Chairman PROXMIRE. Do you have figures with you for this past year?

Mr. ABERSFELLER. Well, I can give you these figures. In 1966 the unused time was 370,000 hours a month. In 1967 it was 379,000 hours a month, and in 1968 estimated—we don't have the actual yet—271,000 hours. So—

Chairman PROXMIRE. The same months?

Mr. ABERSFELLER. A month. This is an average month, Mr. Chairman.

Chairman PROXMIRE. An average month for the whole year?

Mr. ABERSFELLER. An average month for the whole year. You have to multiply it by 12 to get the whole year.

Chairman PROXMIRE. Is that a better performance in view of the fact you have more equipment?

Mr. ABERSFELLER. Yes, sir.

Chairman PROXMIRE. It sometimes is hard to evaluate them unless we know what it represents. Does this represent 50 percent idle time or 25 percent or what? When we are talking about time, are we talking about a 168-hour week?

Mr. ABERSFELLER. The way this was computed, it was based on total time available for use.

Chairman PROXMIRE. It is hard to get more than 168 hours a week.

Mr. ABERSFELLER. The 271,000 hours a month, is the unused time available.

Chairman PROXMIRE. But you cannot give me a figure right now on what percentage that is?

Mr. ABERSFELLER. No.

Chairman PROXMIRE. All right.

Mr. ABERSFELLER. And I would prefer to wait until the end of this month at which time we will have accurate 1968 information and then we can give you the 1966, 1967, 1968 data.

Chairman PROXMIRE. Give us what you can within the next day or two that is available to you and at the end of the month give us additional data.

Mr. ABERSFELLER. All right, sir.

(The following was later supplied:)

COMPARABLE AVERAGE MONTHLY UNUSED (IDLE) TIME AVAILABLE FOR SHARING WITHIN 50 STATES

	Fiscal year 1966	Fiscal year 1967
Number of computers available for sharing.....	1,815	1,958
Total maximum potential monthly hours of use (720 hours per computer).....	1,306,800	1,409,760
Number of unused hours per month available for sharing.....	369,952	378,768
Percentage unused hours available for sharing of total maximum potential hours of use (percent).....	28	26
Average number of unused hours available for sharing per computer.....	204	193

PERIPHERAL EQUIPMENT MANUFACTURERS

Mr. KNOTT. In testimony before your committee last year, it was brought out that there were 50 independent peripheral equipment manufacturers interested in providing their products to the Government. As we agreed, we have contacted all 50 of these manufacturers 19 of whom had previously been solicited. Four of the 19 held fiscal year 1968 Federal Supply Schedule contracts. Our purpose was to include in our Federal Supply Schedule contracts as many of these concerns as were interested with whom we could reach mutually satisfactory contractual arrangements. Our initial efforts resulted in responses from 13 who indicated that they were not interested in contracts and 19 who indicated an interest. Eighteen others did not respond to our inquiries. To date, we have received nine offers from the 19 firms which indicated an interest. We have awarded contracts to two of these companies and are negotiating with the other seven.

In our letter to you of December 18, 1967, we advised that it was possible for the Government to separate central processing units from peripheral computer system requirements in order to offer individual components for quotation, provided adequate technical and other resources were available. We are continuing to study the entire area so

that we can reach determinations as to the feasibility, including economic consideration, the resource requirements, and resource availability for this method of procurement.

During fiscal year 1968 Government purchases and leases of general purpose computers and punch card equipment amounted to \$147 million and \$277 million, respectively, for a total of \$424 million. These purchases and lease dollars include procurements with contractors holding Federal Supply Schedule contracts who report the dollar volume against their contracts. It also includes—

Chairman PROXMIRE. I want to interrupt for just one moment to say I am delighted to see your efforts to get more bids from peripheral manufacturers, and I think that is one constructive contribution of this committee, I take it, because we did call that to your attention.

Mr. KNOTT. Yes, sir.

Chairman PROXMIRE. And we had good testimony before the committee by a peripheral manufacturer who indicated how anxious they were to do it.

OTHER ADP PROCUREMENT

Mr. KNOTT. Yes.

It also includes \$2 million of procurements not placed against Federal Supply Schedule contracts as reported by agencies in accordance with GSA regulations issued in August 1967. Procurements were also based upon negotiated contracts. In this connection, it should be noted that while our Federal supply schedule contracts establish multiple sources of supply and terms and conditions, individual procurements of systems involve competitive selection procedures as provided for in BOB Circular A-54. This circular requires equal opportunity and appropriate consideration to all companies who offer equipment capable of meeting the system performance specifications.

These individual ADP procurements are negotiated because ADPE systems specifications are based on performance requirements which are not oriented to any specific manufacturer's product or technical equipment specification in order to insure free competition among all suppliers. Since the ADPE performance characteristics are susceptible to levels of attainment through a large number of alternatives based on the design and mix of ADP hardware and software available from vendors, it is essential that the Government be in a position to consider changes to these performance requirements during negotiations in order to insure to the Government the advantages of price and performance offers which provide for lowest overall costs.

Improved Federal supply schedule contractual terms and prices have been obtained from ADP equipment manufacturers and related suppliers. These actions have, and will continue to produce, significant benefits and economies to the Government. The improvements for fiscal year 1968 include 30 day rent-free transfer period, rental use terms changed from limited to unlimited use per month, reduction in hourly parts usage charge in maintenance of Government-owned equipment, and delay in general commercial price increase for Government. These benefits, together with continuing prior-year items, resulted in reduced costs of about \$20.3 million for fiscal year 1968. The improvements for fiscal year 1969 include prompt payment discounts, long-term leasing arrangements, improved purchase option credits, special purchase plans, improved purchase guarantees, and

shorter discontinuance notices. In fiscal year 1969, we have also included for the first time in Federal supply schedule contracts for computers a maximum order limitation which has the effect of requiring separate procurements for all requirements above this limitation. Although we have very limited experience at this point, we expect use of this procurement technique will reduce costs.

DELEGATIONS OF PROCUREMENT AUTHORITY

As a result of the Comptroller General decision of November 21, 1967, agencies were advised that delegations of procurement authority were required from the Administrator, General Services Administration, when their requirements were to be met by actions other than the utilization of Federal supply schedule contracts. Our procurement assistance efforts are beginning to pay off. We have, through our review of requests for proposals—RFP's—and request for delegations of procurement authority, been able to improve the procurement process. We have also been able to obtain reduced costs by about \$43.3 million in fiscal year 1968 on a number of individual procurements which we have undertaken for agencies.

CONTRACTORS' REFUSAL TO SUPPLY ADP COST OR PRICING DATA

We have had some difficulty in obtaining cost or pricing data when such data are required pursuant to the Truth-in-Negotiations Act. This relates primarily to procurement of what is known as first-of-a-kind computers. Companies in the computer industry have refused, on a number of occasions, to furnish cost data in connection with the system. These refusals have been based on the contention that, even though the computers are not yet available, they are part of the commercial line of the company involved or are potentially to be available on the commercial market at some future date. As a result of problems encountered by the Atomic Energy Commission in July 1967, we pursued this matter further with all major computer manufacturers, but were not successful in obtaining firm commitments from producers as to the provision of such data, and we so advised the Comptroller General in March 1968. When a potential contractor, whose equipment meets the valid requirements of an agency and whose costs are the lowest, refuses to submit the required data, the Secretary of the department or head of the agency concerned has no alternative but to waive the cost data requirements. We will continue to attempt to persuade the industry to furnish cost data, when required, and to clarify any misunderstandings on industry's part regarding exceptions to the requirement for these data. If we are unsuccessful in these efforts during calendar year 1969, we will consider proposing appropriate legislation early in calendar year 1970 which will require the submission of such data.

Chairman PROXMIER. It is your understanding that the Truth-in-Negotiations Act would require—at the present time require—that these data be derived?

TRUTH-IN-NEGOTIATIONS ACT NOT MANDATORY FOR GSA

Mr. KNOTT. That is true, but it was not directed toward any agencies other than the Department of Defense, Coast Guard, and NASA. It does not cover GSA. GSA has elected, however, to use it, and we find its procedures very helpful.

You raised the question last year as to whether it might be worth while to make it mandatory on GSA, and while we may be moving in that direction, we are hopeful that we can get information that we need without it. There has been some improvement, but I am not prepared to say—

Chairman PROXMIRE. Well, this seems to me to be most unfortunate, because I think it is perfectly proper for the Government to secure this kind of information. We need it. After all, the taxpayer shouldn't be asked to spend this kind of money without knowing, without getting this.

What are the names of the companies who have refused, do you have them?

Mr. KNOTT. Mr. Abersfeller?

Mr. ABERSFELLER. Well, actually, all of the companies have refused.

Chairman PROXMIRE. All of them?

WAIVER OF TRUTH-IN-NEGOTIATIONS ACT

Mr. ABERSFELLER. Most of the major companies. I might point out, Mr. Chairman, that the head of the agency can waive the requirement of the current Truth-in-Negotiations Act, and that is what we have been doing. Some companies have qualified their refusal. They say, as an example, they will provide cost and pricing data, but where there is a difference of opinion between the Government and the company as to applicability, they will make a decision to comply or not to bid.

Chairman PROXMIRE. But they have not provided the information?

Mr. ABERSFELLER. That is correct.

Chairman PROXMIRE. What are the major companies?

Mr. ABERSFELLER. Beg your pardon?

Chairman PROXMIRE. Do you have the names?

Mr. ABERSFELLER. The companies we have talked to are Burroughs, Control Data, General Electric, Honeywell, IBM, RCA, and Univac.

NEED FOR NEW LEGISLATION

Chairman PROXMIRE. You feel that if we are going to get this information on the basis of present experience we are going to have to have legislation simply making it mandatory; in other words, giving the GSA the same authority that the Department of Defense has at the present time?

Mr. KNOTT. It may come to that, Mr. Chairman. We would like a little more time, and we hope that the companies will conclude that this is not a desirable step, and not necessary.

Mr. ABERSFELLER. I would like to clear up one issue, Mr. Chairman, and that is we have not been refused in those instances where it is an R. & D. contract and where there is nothing like it or to be like it on the commercial marketplace. The companies are quite willing to provide it then because they build it from the ground up. But with respect

to equipment which is the first of its kind and which they contend are not in their commercial line, the companies do not want to provide, nor do they provide, the information.

Chairman PROXMIRE. Why not? What is their reason?

Mr. ABERSFELLER. Well—

Chairman PROXMIRE. Or do they simply say they won't give it to you?

CONTRACTORS CLAIM LACK OF KNOWLEDGE OF COST DATA

Mr. ABERSFELLER. One company told me they didn't know. You asked me. I don't know.

Chairman PROXMIRE. Really? They don't know? They didn't know themselves?

Mr. ABERSFELLER. Sir?

Well, really, I think there is some credence to that point of view. If one—

Chairman PROXMIRE. They don't know their own cost data, their own pricing data?

Mr. ABERSFELLER. They know what it costs, but they don't know how to prorate their overhead costs of that one particular piece because they don't know how many they are going to sell. That is their big contention. For instance, if they put \$5 or \$10 million in a project that results in a highly sophisticated computer and if they are going to sell 1,000, it is one figure, and if they are going to sell only 10, it is another figure. But anyway, the others give somewhat different reasons. Some of them say the item is proprietary, and therefore they are not willing to release the data.

Chairman PROXMIRE. And about the best you can do is ask, and then they tell you they don't know. The others simply won't tell you.

Mr. ABERSFELLER. Well, that is correct; yes, sir.

COST AND PRICE DATA ESSENTIAL

Chairman PROXMIRE. Well, it is very useful to know that, and it seems to me that cost and pricing data in this area certainly is essential, and I see no reason where DOD should have it and you should not have it, and I think this is an excellent recommendation. It is a shock that they refuse to give you this information.

Mr. KNOTT. We have elected to use it, Mr. Chairman, in the major architect-engineer contracts, for example. This is an area where we are negotiating for professional services. We have elected to use it in these areas and where that information has been denied, and it rarely is, we simply terminate negotiations and select another architect. We are attempting to use it in every area of GSA's procurement, where we think it is beneficial and helpful and where it would bring us closer to the actual cost picture.

Chairman PROXMIRE. Yes.

Mr. KNOTT. Just a word, Mr. Chairman, about our stockpile disposal.

COST AND PRICE DATA REFUSALS FOR DEFENSE ADP

Chairman PROXMIRE. Let me understand, you procure all ADP, including ADP for defense, don't you?

Mr. ABERSFELLER. We either procure it or we delegate the procurement authority.

Chairman PROXMIRE. Well, does this refusal apply to the ADP you buy for defense?

Mr. ABERSFELLER. Yes, sir.

Chairman PROXMIRE. So it is just a gimmick, an omission in the law which prevents you, if we had a provision that defense procures it they can get this information under the law as a mandate.

Mr. ABERSFELLER. Well, I think the same law is applicable, Mr. Chairman. I defer to our general counsel.

Chairman PROXMIRE. As I understood your testimony, you say you don't have the authority.

Mr. ABERSFELLER. I don't contend DOD has either.

WAIVER OF TRUTH IN NEGOTIATIONS ACT

Mr. VAN CLEVE. We don't have statutory authority under the Truth in Negotiations Act but the Truth in Negotiations Act itself contains a provision permitting waiver of the requirement for submitting data if the head of the agency determines he must waive that requirement. The act itself permits the waiver of the requirement, and a similar waiver is permitted under our regulations. Waivers have been used where these first-of-a-kind computers are being offered.

Chairman PROXMIRE. Well, why is it necessary to waive cost data requirements if a contractor refuses to submit data?

Mr. VAN CLEVE. If the computer which is being offered meets all of the requirements of the using agency and is the lowest in price, but the manufacturer refuses to submit the data, then we must either waive the requirement for submission of the data or buy a computer which would cost more or not do the job as well, providing we could find a manufacturer who would submit such data.

Chairman PROXMIRE. I see.

Well, Mr. Knott, thank you very much. If there is anything in the remainder of your testimony you would like to stress or highlight—why fine, we could put it in the record.

STOCKPILES OF STRATEGIC AND CRITICAL MATERIALS

Mr. KNOTT. We merely wanted to indicate—and we do by chart—the progress of our strategic and critical material disposal.

Chairman PROXMIRE. Yes, it is very significant. Why don't you read that particular, those two paragraphs, they are short.

STRATEGIC AND CRITICAL MATERIALS DISPOSAL

Mr. KNOTT. As manager of the Nation's stockpiles of strategic and critical materials, the General Services Administration performs all of the steps necessary to keep the stockpile materials in a state of readiness for defense purposes. We also dispose of materials no longer required for emergency needs in a manner consistent with our mandate to avoid undue market disruption. Table II shows annual sales exceeding \$2.8 billion from the beginning of fiscal year 1959, when major emphasis was placed on stockpile disposals, through fiscal year 1968. Fiscal year 1968 sales were \$207.4 million.

EXCESS STOCKPILES—\$3.2 BILLION

At this time there still remain some \$3.2 billion in materials that are excess in stockpiling needs. The direct benefits which accrue to the Government and to the taxpayer from the disposal of stockpile excesses include the recovery of moneys invested in unneeded inventories and other costs associated in carrying the inventories, including reduction of recurring storage costs.

The disposal of real property—

Chairman PROXMIRE. Do I construe that as meaning that the disposal has fallen off rather sharply?

Mr. KNOTT. Yes, it has. The peak year, 1966, was the year in which some of the larger inventories, including aluminum, were disposed of. During the 89th Congress there were some 40 measures passed affecting as many commodities which was helpful. During this past session of Congress there were only about five measures enacted. They involved disposal of commodities of less worth.

Chairman PROXMIRE. In other words, you have disposed of the properties that were easy to, relatively easy to, dispose of?

Mr. KNOTT. That is true.

Chairman PROXMIRE. And now you are down to properties that are more difficult to dispose of?

Mr. KNOTT. That is true, and particularly those where there would be a sizable impact on domestic markets.

Chairman PROXMIRE. Well, I hope that you can continue to vigorously dispose of these commodities for many, many reasons. You know them and you have specified and indicated some of them in this brief.

Mr. KNOTT. We are running now, as of this time, about \$10 million ahead of last year at this time so there is some indication—

Chairman PROXMIRE. But last year was way down.

Mr. KNOTT. That is true, but we are around \$65, \$66 million so far and if we can get some legislation in some areas during the next Congress, I think we may move ahead, and some commodities simply will not move at one time, but will move at another. We had an excellent example in bismuth which we held for a number of years, and were not able to dispose of it. However, we recently were able to dispose of it at twice the amount of the Government's investment in the stockpile. So it is a matter of market conditions.

Chairman PROXMIRE. And it is a matter of whether or not Congress acts.

Mr. KNOTT. Oh, yes; decidedly so. There has been some tightening up with some congressional concern that perhaps we were moving too rapidly.

Chairman PROXMIRE. We have \$3.2 billion tied up in materials that are excess to stockpiling needs that are more than we need, \$3.2 billion, and it makes sense for us to liquidate that.

Mr. KNOTT. Absolutely, we certainly agree with that. We would like to have the authority to move with it as the circumstances and the marketplace would permit us to do.

Chairman PROXMIRE. Very good.

STATUS OF MANAGEMENT OF EXCESS REAL PROPERTIES

Mr. KNOTT. The revised Bureau of the Budget Circular A-2, dated April 5, 1967, has not resulted in the anticipated impetus to the iden-

tification and reporting of excess real property not required to meet program objectives. During fiscal year 1968, holding agencies reported excess to their requirements 589 properties having an acquisition cost of \$386.06 million as compared to 756 properties having an acquisition cost of \$913 million reported in fiscal year 1967.

During fiscal year 1968, 64 excess real properties were transferred to other Federal agencies for continued use, an increase of five over fiscal year 1967.

A substantial reduction in the amount of appropriated funds needed for new acquisition was effected during fiscal year 1968 by exchange of 14 federally owned properties for other privately owned properties needed by Federal agencies. The 14 properties having a value of \$1.97 million were exchanged for properties and cash having a value of \$2.14 million.

During fiscal year 1968, GSA sold a total of 327 properties valued at \$72.08 million for prices totaling \$77.5 million. These sales returned the proceeds to the land and water conservation fund, placed the properties in productive use with accompanying benefits to the local and national economies and returned the properties to the local tax rolls.

In accordance with our normal procedures, prior to public sales, State and local governmental agencies and eligible nonprofit organizations are given notice by GSA of the possible availability of surplus real property for health, education, park and recreation, historic monument, wildlife conservation, and public airport purposes, without charge or at a price discount, and afforded the opportunity of submitting a plan for the acquisition and use of the property. During fiscal year 1968, 127 properties having an original cost to the Government of \$142 million were disposed of at discounts for non-Federal public use.

LEASING OF INDUSTRIAL EQUIPMENT

Finally, we have noted the recommendations in your report concerning the need for better controls over Government-owned equipment which has been made available to industry.

In this regard, pursuant to Department of Defense directives, GSA has executed leases with two commercial firms covering 11 machine tools from the national industrial reserve. The companies involved are engaged in the production of military items under Defense-rated orders which could not be associated with a single military contract. The leasing of these tools was recommended to DOD by the Business and Defense Services Administration and approved by the Office of the Assistant Secretary of Defense. Uniform rental rates are assessed in accordance with Office of Emergency Planning document DMO 8555.1A, effective July 1, 1968.

Our contracts require the lessee to maintain records, satisfactory to GSA, so it can be determined that the contractor is using the equipment in accordance with the terms of the lease. These records will be reviewed by our inspectors on the occasion of each semiannual inspection.

This concludes my prepared statement, Mr. Chairman. If you or any members of your subcommittee have any questions you may wish to ask we shall be happy to answer them at this time or furnish the desired information for the record.

TABLE I.—TOTAL ADP COSTS REPORTED BY AGENCIES (FISCAL YEAR 1963 THROUGH FISCAL YEAR 1967)

[Dollar amounts in millions]

Fiscal year	Total (including DOD)	DOD Total	DOD percent of total
1963	\$785	\$504	64
1964	1,096	733	67
1965	1,112	699	63
1966	1,284	805	63
1967	1,495	925	62

GENERAL SERVICES ADMINISTRATION STOCKPILE DISPOSALS

(Millions of Dollars)

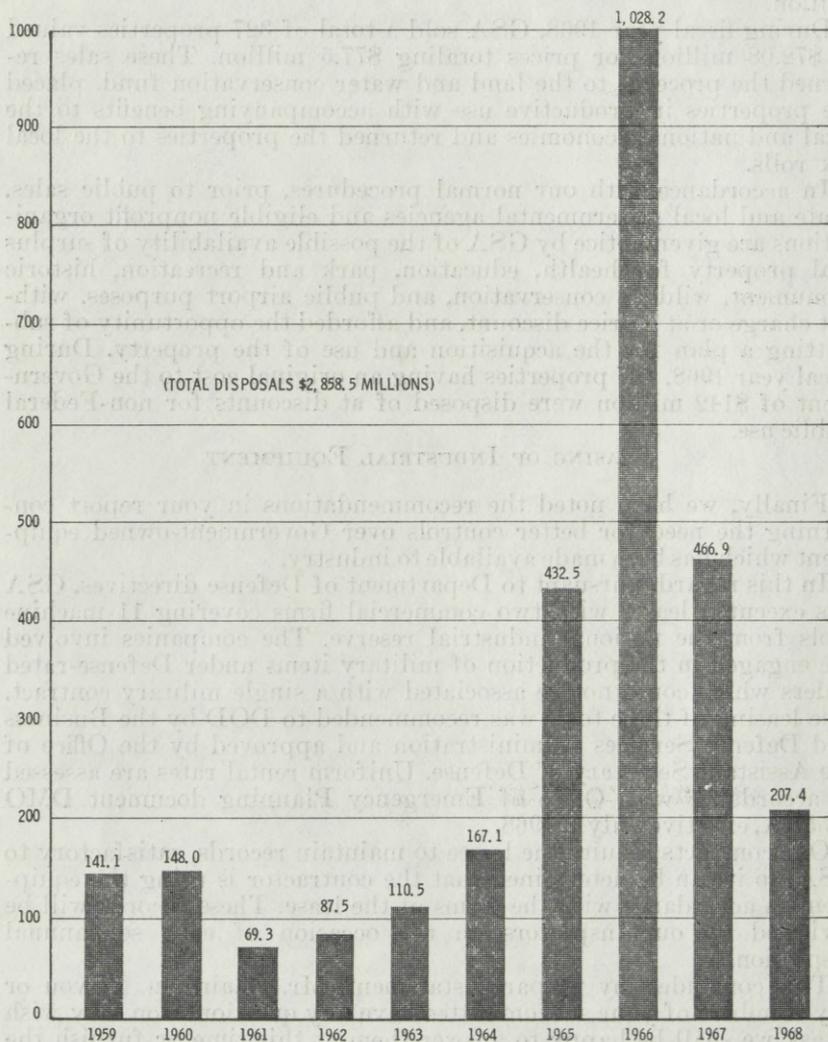


TABLE II

Chairman PROXMIRE. All right, sir. Thank you very, very much. It has been fine and helpful testimony and we very much appreciate it.

Mr. KNOTT. Thank you.

Chairman PROXMIRE. Our next two witnesses are together, John Malloy, Deputy Assistant Secretary of Defense for Procurement, and William B. Petty, Director of Defense Contract Audit Agency.

Gentlemen, we welcome you and we are delighted to have you, and your testimony is going to be extremely interesting to us and to many others.

All right, sir, go right ahead.

STATEMENT OF HON. JOHN M. MALLOY, DEPUTY ASSISTANT SECRETARY OF DEFENSE FOR PROCUREMENT; ACCOMPANIED BY HYMAN ZARETZKY, DIRECTOR OF SUPPLY MANAGEMENT POLICY; RICHARD CARR, DIRECTOR OF PRODUCTION SERVICES; AND WILLIAM B. PETTY, DIRECTOR, DEFENSE CONTRACT AUDIT AGENCY, DEPARTMENT OF DEFENSE

Mr. MALLOY. Mr. Chairman, I am John M. Malloy, Deputy Assistant Secretary of Defense for Procurement. I am appearing as the principal Defense witness in response to your letters of October 10 and 18 in the absence of Assistant Secretary Morris. I will present our overall statement and answer the subcommittee's questions in the area of defense procurement. I will be assisted in other areas by Mr. Hyman Zaretsky on my far right, Director of Supply Management Policy and Mr. Richard Carr on my immediate left, Director of Production Services.

Mr. W. B. Petty, Director of the Defense Contract Audit Agency is also present on my immediate right as you requested. In response to the subcommittee's request Mr. Petty also has a prepared statement and will present it today.

Our overall statement covers the subjects in which the subcommittee indicated a special interest last November; matters reviewed in the subcommittee's report of last April 23, as well as the subjects identified in your recent letters. For ease of presentation we have subdivided our statement into three parts:

Part A—Procurement matters:

Part B—Control of Government-owned property in the hands of contractors;

Part C—Supply management and the national supply system.

PART A—PROCUREMENT MATTERS

This part of our statement will deal with the following five subjects:

1. Our response to the three recommendations contained in the committee's April report relating to procurement.
2. A discussion of profits on defense contracts.
3. A discussion of cost controls in defense contracting.
4. Status of implementation of Public Law 87-653, the Truth in Negotiations Act.
5. Training program in procurement.

COMPETITIVE VERSUS NEGOTIATED PROCUREMENT

1. COMMENTS ON RECOMMENDATIONS IN YOUR APRIL REPORT

Recommendation No. 1.—The subcommittee once again urges the greater utilization of competitive bidding to satisfy the requirements of defense procurement, and reversal of the tendency to award contracts by noncompetitive negotiation.

Competition does produce lower prices to the Government and the amount of competition has dramatically increased since 1961 as a result of continuous efforts by all Defense officials concerned—

Chairman PROXMIRE. May I interrupt? You say competition has dramatically increased, when by every calculation that I have seen it has declined.

Now true competition by formal advertisement for bids is down to almost a record low of 11.5 percent as brought out yesterday by the Comptroller General, down from 13.4 percent a year ago, down from almost 17 percent a few years ago. How do you explain that sharp and consistent and steady decline and how can you say at the same time in your statement the amount of competition has dramatically increased?

Mr. MALLOY. Mr. Chairman, in this portion of my statement I am not talking about formal advertising; I am using competition in the general sense, in the sense we normally use it. Formal advertising becomes a subhead under the general term of competition.

Chairman PROXMIRE. Then you are talking about competitive negotiating; is that what you mean?

Mr. MALLOY. That is correct; plus formal advertising.

Chairman PROXMIRE. Let's take a look at that category for a minute. Isn't it true that advertisements for bids are not used for that type of award? The contenders are chosen by somebody in the Pentagon, and not by the market.

SET-ASIDE PROGRAM

Mr. MALLOY. That is really not true, Mr. Chairman, in this sense. Let me just take one example that we call negotiated procurement. It has to do with our set-aside program for small business concerns and labor surplus area concerns. Here we use the exact procedures of formal advertising, including the formal bid opening, national advertisement throughout the country, the exception being the restriction of the bidders to small business concerns.

Chairman PROXMIRE. Are you saying that the set-aside programs to small business are classified as negotiated even though you have price competition and advertised price competition among the small business firms that are eligible?

Mr. MALLOY. We are technically required by the law to call this type of procurement negotiated procurement. But as I was saying it is the exact same procedure. There is the restriction of the bidders who can bid to the small business firms.

Chairman PROXMIRE. GSA testified less than an hour ago when we were discussing this with GSA that set-aside should be and was properly classified as advertised competitive bidding.

Mr. MALLOY. Yes, sir; I heard the testimony. I believe they also said that as a matter of technicality they must classify it in their statistics as negotiation. They lumped it into their figure with their formally advertised figure because in their judgment it is essentially the same thing. I think there is a reasonable basis for doing that—but we categorize it strictly according to the law which means that we call it negotiated.

Chairman PROXMIRE. Anyhow you haven't changed that, Mr. Malloy, over the past few years, we are talking about trying to get comparable figures, and the figure that we have given consistently is that advertised competitive bidding of all kinds under all definitions has declined. Are you telling me that it is increased, it is a larger proportion?

COMPETITIVE NEGOTIATION

Mr. MALLOY. No, sir, I was not talking about advertised competitive bidding. I am still talking about negotiation and I was making the point that in one part of our negotiated procurement that is competitive, we use the exact same procedures as formal advertising but we call it negotiation and count it in our statistics as negotiation. In our other competitive negotiation we publicize the fact that we are going to do the buying freely throughout the country. We have mailing lists. Many of these mailing lists have dozens and dozens of suppliers. Contractors can come to our buying offices and get on our mailing lists for negotiated procurements. We publicly announce what we are going to buy and we solicit all known sources.

Chairman PROXMIRE. I am not complaining about that necessarily. I just want to get the figures as clearly as I can and I want to understand what we mean by negotiated competition because it is kind of a contradiction just in those two words.

SOLE BIDS IN COMPETITION NEGOTIATION

As I understand it up until the second quarter of fiscal 1968 an award could be classified as competitive negotiated or priced competitive even if only one bid was received.

Mr. MALLOY. We had a statistical gathering technique that we had used for many years before last year, which was different than we now use, and which was based essentially on the number of sources solicited. Under those ground rules it was possible, although it was not usual, to have a multiple solicitation with only one bid received that counted as negotiated competitive procurement. We have changed those ground rules this year as a result of suggestion from your committee and from the General Accounting Office.

DATA ON SUBCONTRACTING

Chairman PROXMIRE. Let me just ask, yesterday we received testimony that data on subcontracting used to be provided by the Department of Defense, by your agency, but it has not been available since 1963. Is that correct?

Mr. MALLOY. Mr. Chairman, there is undoubtedly some confusion on this subject because we have, and I am prepared to provide, detailed

information on the subcontracting that our prime contractors do to small business concerns. We keep very precise figures.

Chairman PROXMIRE. That is available. I mean all subcontracting?

Mr. MALLOY. Years ago, I think it was 1957 to about 1963—we gathered from our reporting prime contractors the total amount of their subcontracted work and then subheads of information under that.

During that time it was perfectly obvious that the total amount of subcontracted work was staying within a narrow band—on an average from about 48 percent of the total to about 52 percent of the total. Hence we knew what the figure was, and we did not need to be gathering data every year to reconfirm an obvious figure. When we went back to the Bureau of the Budget under the Federal Reports Act procedures to extend this reporting procedure the suggestion was made that we could save some money since we knew the subcontracting figure, by eliminating some industry reporting, which we did.

But I can say today, as I advised another committee of the Congress recently, where the same subject came up, that approximately 50 percent of the amount of money that is placed by us under prime contracts is subcontracted.

COMPETITION IN SUBCONTRACTING

Chairman PROXMIRE. You say you have the information? How competitive is subcontracting, what amount of subcontracting to the large contractors, using any classification you desire to use?

Mr. MALLOY. If I might take fiscal year 1968, Mr. Chairman, the number of large contractors reporting in this system that we have established was 886. The military subcontracts placed by those contractors totaled \$15,225 million. Of that amount \$6,496 million was awarded to small business concerns and \$8,729 million was awarded to other business concerns. That leaves a percent of the total subcontracted work by these contractors awarded to small business concerns was 42.7 percent. The comparable percentage figure in fiscal year 1967 was 43.3 percent, and the fiscal year 1966 comparable figure was 41.9 percent.

Chairman PROXMIRE. Do you have any data on the competition for subcontracting, whether this was by advertised competitive bidding or whether this was sole sources or—

Mr. MALLOY. I do not have that. I would say, Mr. Chairman, that practically none of it would be by formally advertised procedures because this is a type of procurement that is conducted by business concerns, certainly not in the way the Government conducts it.

Chairman PROXMIRE. Would you say that most of it is single source procurement?

Mr. MALLOY. I would not know how to judge that, Mr. Chairman. I do not have data on it, and one would have to understand the basis on which we define a single source.

Chairman PROXMIRE. Then you don't have any information on how competitive the subcontracting situation is?

Mr. MALLOY. I don't have any statistical compilation of that. We have procedures in which we look at this on a case-by-case basis. Under our small business subcontracting program any contractor who has defense business over \$500,000, where there are subcontracting op-

portunities, has to establish a formal procedure where he designates key individuals in his organization to be cognizant of helping small business concerns. Under that program we also make him keep statistics on a case-by-case basis. I think we do have a cutoff of \$10,000 but on all procurements over \$10,000 these major prime contractors are required to keep data on the number of sources solicited—the number of small business sources solicited and whether or not a small business concern was considered at all.

NEED FOR INFORMATION ON SUBCONTRACTORS' PROFITS

Chairman PROXMIRE. This is a good program and I approve it. But what I am talking about is the competitive nature of the subcontracting procedure. In other words, if you have most of it—you say almost none of it, or none of it, is on an advertised competitive basis and if most of it is negotiated with a single source, it would seem here that information on profits of subcontractors would be very useful and would indicate whether you have a situation where the Government is paying too much, especially in view of the fact that most of our procurement, our primary contracting is with a single source negotiated, and if their procurement, in turn, is based on procurement from a single source without real competition, then those costs would become very, very important. Do you follow me?

Mr. MALLOY. Mr. Chairman, I don't want to give the impression that I indicated in any way that most of the procurement by our prime contractors was negotiated through a single source.

Chairman PROXMIRE. You said you didn't know.

Mr. MALLOY. I testified I did not have statistical data.

Chairman PROXMIRE. You knew it wasn't advertised competitive bidding.

Mr. MALLOY. I made the general statement that this is a type of procedure which is normally not used in commercial business. Hence there would be no statistics to keep. My general impression is that since a great many of our prime contractors are placed on a competitive basis and since there is considerable rivalry at subcontract level for subcontract business that it is a highly competitive environment.

DECLINE OF COMPETITION

Chairman PROXMIRE. Let me just go back one step and I don't want to detain you too long on this one point, important as it is. We have established the fact that advertised competitive bidding has declined, and declined sharply and steadily, over the last few years.

Yet you say the competition is growing or rising, and, you say, dramatically increased since 1961. Here is a document entitled "Military Prime Contract Awards and Subcontract Payments or Commitments, July 1967-June 1968, Office of the Secretary of Defense" and I am reading from page 32:

Military prime contracts awarded after competitive price—or technical proposals totaled \$18,034,000,000 and represented 42.1 percent of the net amount of procurement during fiscal year 1968 compared to \$20,614,000,000 and 47.5 percent during FY 1967.

The first figure was for 1968. This seems to me to be a decline and a sharp decline and a significant decline and this is the category on which you are relying, it seems almost incredible, for your statement to claim that competition has dramatically increased.

TREND SINCE 1961

Mr. MALLOY. Mr. Chairman, the general basis for the factual statement in my prepared statement was the fact that in fiscal year 1961 the percentage of our total contract dollars that were awarded on a price-competitive basis was in the neighborhood of 32½ percent. That went gradually up to through 1967 to 44.4 percent and this past year has dropped back to, in fiscal year 1967—the latest statistics is 37.7 percent. So there has been a considerable increase in the amount of our price-competitive business over that long period of time.

Chairman PROXMIRE. Now, are you including—you are not including or are you including that 37.7 figure, advertised competitive bidding, as well as negotiated?

Mr. MALLOY. Yes, sir; our figure that we use for price competition does include formal advertising because we consider that to be price competitive.

SINGLE BID "COMPETITIVE" AWARDS

Chairman PROXMIRE. You say that price competition has ranges between 37 percent and 44 percent of total dollars awarded during the past 4 years. How many of those dollars were awarded in a single bid situation?

Mr. MALLOY. I don't believe I have it.

Chairman PROXMIRE. What percentage of those awards were single bids?

Mr. MALLOY. I don't believe I have that.

Chairman PROXMIRE. Give us those figures for the record if you have them.

Mr. MALLOY. I certainly will try.

(Mr. Malloy's office subsequently informed the subcommittee that these data are not gathered, and hence unavailable.)

COMPETITIVE NEGOTIATIONS

Chairman PROXMIRE. Under the present procedures the contractors who are permitted to bid in this competitive negotiated category are selected by someone in the Pentagon. As few as two or three are selected, are they not? You say there are two or three?

Mr. MALLOY. It would be quite unusual to have two or three but it would be possible and undoubtedly does happen. We have many, many suppliers, sometimes on a competitive negotiated procurement, well over 100 competing for our business.

Chairman PROXMIRE. If you can give us a little more than just the number of single bids we would like to have the numbers of two bids and three bids if you can get that for us.

I interrupted you, I am sorry, right after your first sentence, but we discussed some of it. But why don't you go ahead.

(Subsequent information supplied by Mr. Malloy states that these data are not collected, and hence unavailable.)

FORMAL ADVERTISING

Mr. MALLOY. True price competition with award to the lowest responsible and responsive bidder—has ranged between 37.7 and 44.4 percent of total dollars awarded during the past 4 years, depending upon the type and volume of commodities purchased in each year. The subcommittee has stressed greater use of formal advertised contracting; however, this is only a fraction of total price competitive awards. It represents only those which are susceptible to procurement under the meticulous statutory rules known as "formal advertising." These rules are primarily applicable to highly standardized, commercial, off-the-shelf items. These rules require a foolproof specification which any bidder, anywhere, can precisely interpret without discussion with the buying agency. Bids are received in sealed envelopes and, after public opening, the award is automatic to the lowest qualified bidder.

NEGOTIATION EXCEPTIONS

Obviously, the majority of defense expenditures for military items cannot be awarded through such procedures. Hence, about two-thirds of our price competitions are conducted under one of the 17 negotiation exceptions authorized in 10 U.S.C. 2304, formerly the Armed Services Procurement Act; but there is no dearth of keen price competition in such purchases.

"LOCK INS"

It is also true that over half of defense procurements in a typical year do not lend themselves to either of the above forms of price competition. In many of these remaining cases there is intense competition based upon the capabilities of the bidders to perform research, development, and design work. In the case of large weapon programs, such as missiles and aircraft and in mobilization-type items, such as ammunition—once a production base has been established, it is usually the only practical source for continuing production which many run for several years.

Chairman PROXMIRE. Why is that? I have heard a lot of people question the wisdom of that. Why is a contract with the only practical source for continuing production once a production base has been established—aren't we referring to lock ins and military monopolies here?

Mr. MALLOY. There are two primary reasons why there is not much flexibility, Mr. Chairman. No. 1 would be the cost and No. 2 would be the time it would take to get another source into production.

Chairman PROXMIRE. I understand the time and there are occasions certainly in a war period at least for some procurements this might be absolutely essential, but in the Vietnam period with few new weapons systems urgently needed, this shouldn't be much of a factor. Is it true that once research and development designs have been completed you don't have competition for production?

Mr. MALLOY. This is not always true.

Chairman PROXMIRE. In most cases?

Mr. MALLOY. Well, it is true in most cases in your very large major complex weapons systems such as your aircraft and your missiles. It

is less true as you get down into the componentry and into less complex articles.

PARALLEL R. & D. DEVELOPMENT

Chairman PROXMIRE. Didn't you used to have more of the parallel R. & D. development before you went into the production so that you could have competition for production, have really effective bidding for it?

Mr. MALLOY. Well, over the years and even still today, Mr. Chairman, we do have some parallel developments, and this, as an alternative, is considered in every case. Sometimes it is a wise way to proceed if your amount of research and development is relatively small as against the amount that will be involved in the production program.

UNDERSTATED BIDS

Chairman PROXMIRE. You see, what we are concerned about is the fact that there is a real tendency under the present system to have understated R. & D. bids in order to get locked in and you get well on the production contracts. That is a suspicion and a lot of people feel it is merited.

Mr. MALLOY. Well, it is a problem that is present when you cannot complete the whole program. That is why we have tried as best we can, and have been somewhat successful in getting total programs under a competitive basis initially. When we are developing complex weapons against tight time schedules, the options and alternatives available are much more restrictive, obviously, than if you are dealing in a common item with a marketplace that is established.

Chairman PROXMIRE. We are, but I just hope that you consider more seriously getting back to what seemed to be more common.

Mr. MALLOY. Mr. Chairman, this, of course, presents one of the great challenges in our buying program.

Chairman PROXMIRE. All right, go ahead.

FOLLOW-ON PROCUREMENTS

Mr. MALLOY. In our annual procurement statistics, these continuing programs must be classified as noncompetitive since they are follow-on procurements from such established sources.

In summary, every individual procurement is carefully evaluated by trained personnel whose first objective is to obtain competition wherever possible. We are satisfied that an outstanding job has been and is being done in this respect.

POST-AUDIT RIGHTS

Recommendation No. 2.—Legislative action should be taken to insure post-audit rights of the Government under the Truth in Negotiations Act.

Congress, as you know, has enacted Public Law 90-512 dated September 25, 1968, giving the Government the right of access to contractor and subcontractor books and records relating to the negotiation, pricing, or performance of the contracts to determine the accuracy of the cost and pricing data required to be submitted under the "truth in negotiations" statute.

DEFECTIVE PRICE REFERRALS TO JUSTICE DEPARTMENT

Recommendation No. 3.—When audits reveal that defective cost or pricing data have been certified by a contractor, despite the fact that accurate, current, and complete data were available to him, the case should be referred to the Justice Department for appropriate action.

The purpose of Public Law 87-653, the Truth in Negotiations Act, was to assure that contractors display for Government negotiators all factual data affecting that price. The law provides that in the event this data is later found to be defective—that is, inaccurate, incomplete, or noncurrent—the contract price shall be adjusted to exclude any significant sums by which it may be determined by the head of the agency that such price was increased because of the defect.

As the law provides, and as implemented by the Armed Services Procurement Regulation (ASPR), if the cost or pricing data certified by the contractor, upon which the Government relied, is later found to be defective and the amount is significant, a price adjustment is sought—regardless of the contractor's lack of knowledge of the defect. Thus, the Government has a contractual remedy to recover unwarranted price increases.

The subcommittee recommendation to refer defective pricing cases to the Department of Justice is interpreted as applying to actions in which the Government's remedy is an action based on fraud. We will continue to pursue this avenue of relief where it is appropriate.

2. PROFITS ON DEFENSE CONTRACTS

Turning now to your letter of October 10, you stated that you would like representatives of the Department of Defense (DOD) to comment on profit-gathering systems. Your letter stated:

Specifically, the committee is interested in learning what the Department of Defense is doing to develop a comprehensive and complete study of realized profits from which meaningful conclusions can be drawn as to the effectiveness of the various types of contracts being used.

To be fully responsive to the committee's request, we will discuss the events leading to the development of the current in-house reporting system which gathers negotiated profits initially agreed to and profits realized from selected types of Defense contracts. Thereafter, we will discuss the reasons for our undertaking a separate profit study with the Logistics Management Institute (LMI). We will discuss the result of both of these efforts in as much detail as the committee wishes.

It is the policy of the DOD to utilize profit to stimulate efficient contract performance. For each contract in which profit is negotiated as a separate element of the contract price, the aim of negotiation is to employ the profit motive so as to impel efficient contract performance.

THE WEIGHTED GUIDELINES

The weighted guidelines is a method of establishing the contracting officer's prenegotiation position on profit. This technique was introduced in 1964 to provide contracting officers with an improved method of developing a contract profit objective. The weighted guidelines

method is used in substantially all negotiated contracts where cost analysis is performed, that is, those contracts that do not involve price competition. The arithmetic calculations which the contracting officer is required to perform are set forth in ASPR 3-808.4 in order to give appropriate weight to performance, risk, projected costs, and other factors. This system for determining profit objectives in negotiated contracts is the latest refinement of the basic system which has been used in military procurement for many years.

a. The DOD in-house profit review system

When the weighted guidelines procedures were introduced in fiscal year 1964, the DOD established a profit review system. The purpose of this system was to determine the effect of the procedures on defense contract profits and to determine how well contracting officers were complying with the guidance on application of individual factors. The reporting system covers all contracts of \$200,000 or more which are negotiated on the basis of cost analysis by each of the military departments. Excluded from this system are: formally advertised contracts, contracts negotiated on a price competition basis, cost-no-fee contracts, labor-hour contracts, and time and material contracts.

This system collects profit data by type of contract, by company, by buying activity, by commodity, and by type of work, distinguishing between development and production. The system also collects data on the percentage assigned to individual weighted guideline factors, initial Government profit objective, the contractor's proposed profit rate and the profit rate negotiated. This system reports on negotiated or going-in profit rates of all basic types of contracts including firm fixed-price. The coverage on completed contracts, that is, realized profits, includes all contract types except firm fixed-price.

DOD PROFIT DATA NOT MADE PUBLIC

The detailed data generated by the system is periodically distributed to key personnel within the military departments. It has not been distributed publicly up to this time, but we do not rule out such publication at some future date.

Chairman PROXMIRE. Why shouldn't it? It seems to me this is data the public has a right to get if they have a right to get anything. You don't argue there is any classification in the matter here. The taxpayer is spending more for defense than anything else. It's an enormous burden, and it seems to me he has a right to know what this shows, what the cost data show and what the profits show. Why should you conceal this?

Mr. MALLOY. Mr. Chairman, we—

Chairman PROXMIRE. I am not charging you, personally, of course, I am talking about the policy of the Defense Department.

Mr. MALLOY. Mr. Chairman, we really have no desire at all, and have no intention, of concealing this type of information.

Chairman PROXMIRE. You are concealing it when you don't make it available.

Mr. MALLOY. Part of it was published as a portion of the LMI report. We have been considering and are still considering making public the key elements of this data. We have not done so up to now for practical reasons; namely, we wanted to be sure that the data were accurate.

We wanted to be sure that there was enough data so that people could make meaningful conclusions from it. Since it was somewhat technical we were afraid we might mislead people rather than inform them. I think that we might all agree that certain portions of this data would perhaps not be in the Government's interest to publish in any event.

Chairman PROXMIRE. If there is anything that is classified, I can understand and I think everybody would agree that it should not be disclosed, but as far as the public being deceived because the data are incomplete or that you may not make accurate calculations with the great efficiency that the Department has developed and that we all recognize over the past few years, it seems to me that it would be appalling if they couldn't tell us—give us this kind of information with some accuracy.

ONE QUARTER OF ANNUAL PROCUREMENT REVIEWED

Let's take a look at the way profits are reviewed in this system you have got here. Of the \$43 billion worth of procurement, how much would be reviewed? You have given us a series of exceptions.

Mr. MALLOY. I believe that we cover in our in-house system something like \$11 billion, Mr. Chairman. I just don't have those figures in front of me. This is out of the total universe of dollars placed with contractors last year.

Chairman PROXMIRE. Of the \$43 billion, you would review about \$11 billion, or about one-quarter.

Mr. MALLOY. It is not that we are reviewing.

Chairman PROXMIRE. You would subject it to this kind of scrutiny.

Mr. MALLOY. This \$11 billion is the amount that is in our statistics—in this particular in-house profit study that I mentioned. You remember that I also mentioned that we only get reports on contracts, for example, above \$200,000; and certain others are excluded because they are placed by formal advertising, for example, and for other reasons. I do have a reconciliation—that I don't have right in front of me—which takes \$43 billion and shows the itemized exclusions.

Chairman PROXMIRE. Provide that for the record. We would very much like to have that; because, as I understand it, 57 percent or something like \$26, \$27 billion is negotiated with a single source and yet only \$11 billion apparently is subject to this kind of review. At any rate a reconciliation would be very helpful.

Mr. MALLOY. Yes, sir.

We have reconciled it pretty closely in our statistical gathering systems so we are quite close to the potential for gathering useful data.

(The office of Assistant Deputy Secretary Malloy subsequently supplied the following:)

Estimated applicability of cost/profit reporting to prime contract awards, fiscal year 1967

	Billions
All contracts, except intragovernmental orders.....	\$43.4
Less transactions without fiscal year 1967 profit determination:	
Increase in letter contracts and change orders: Profits to be negotiated in subsequent year.....	2.6
Net increase in incremental funding: Profits were negotiated and reported in prior years.....	2.0
Cost-no-fee contracts.....	.8
Total	5.4
Total transactions with profits applicable.....	38.0
Less transactions not covered by DOD:	
Formally advertised contracts.....	15.8
Other price competitive contracts.....	12.8
Purchasing offices not required to report (overseas offices and small offices in the United States).....	2.5
Catalog price or other total price awards without competition; e.g., utilities	1.0
All other contracts under \$200,000.....	3.8
Total	25.9
Total coverage required by DOD.....	12.1
Amount reported on DD Form 1499 in fiscal year 1967.....	11.0
Shortfall in reporting.....	1.1

¹ About \$9,000,000,000 of these combined amounts (\$18,600,000,000) represent awards in petroleum, subsistence, clothing, automotive, air transport, sea transport, and construction industries.

INCREASE IN PROFITS

Chairman PROXMIRE. I have a document in front of me called "Profit Rates Negotiated on Select Prime Contracts," Office of Secretary of Defense, Director of Statistical Services. Written on it in handwriting is "For official use only." Is this the data from the review system that you described?

Mr. MALLOY. I believe that is, sir.

Chairman PROXMIRE. Well now, doesn't this data show, and it is not classified, and I am just going to read one sentence from the "Profit rates negotiated during weighted guidelines period, fiscal year 1964-67 averaged 9.4 percent against 7.7 percent during nonweighted guideline period 1959-63." In other words, it shows that profits have increased from 7.7 percent to 9.4 percent, which is a rather sharp increase in profits, at least for this very large segment of procurement which you have discussed and which is peculiarly susceptible to lack of competition and to the kind of cost systems and so forth that the contractors use. Is this figure correct?

GOING-IN VERSUS REALIZED PROFIT RATES

Mr. MALLOY. Mr. Chairman, those figures are accurate as they pertain to negotiated or what we call "going-in" profit rates. We adopted the weighted guideline policy in 1964, and shortly before that time, and since that time, we placed great emphasis on shifting from cost-plus fixed fee contracts to the higher risk type contract. Thus, we fully

anticipated that this shift would result in the average rates of profit by types of contract being increased. That has, in fact, happened. The data that we have on the realized profits under the "in-house" system—and we are getting more and more information on that—is showing that our contractors are not realizing the increase that is indicated by those statistics. As a matter of fact, the data that we have show that they are realizing just about the amount that was negotiated during the based period, 7.7 percent.

Chairman PROXMIRE. I want to come to that in a minute. You base that partly on the information you get from LMI.

Mr. MALLOY. No, sir, I am now talking about the data in our in-house. We get other data that supplements that in the LMI study.

Chairman PROXMIRE. Proceed.

LMI PROFIT STUDY

b. The logistics management institute profit review

Mr. MALLOY. The Logistics Management Institute published a defense industry profit review report in 1967. This study was performed at the request of the DOD in order to supplement our "in-house" data and provide a better capability of assessing the impact of the many new procurement and contracting policies introduced in the 1960's. Some of the principal changes were:

- Reduction in CPFV contracts;
- Shift to incentive and firm fixed-price contracts;
- Increased price competitive procurement;
- Increased contractor working capital requirements due to shift in types of contracts; and
- Increased contractor investment in facilities due to the adoption of more stringent criteria for the furnishing of Government facilities.

This study enlisted the voluntary participation of a significant segment of the defense hardware industry. This made it possible to gather data on profits realized under firm fixed-price contracts, and under contracts awarded competitively, thus providing data in an area not covered by the DOD "in-house" profit review system or by published company data. The LMI profit study is now being up-dated to include data for 1967. For those contractors providing data, care was taken by LMI to apply test checks against both the published statements of the company and certain other data published by the Federal Trade Commission and the Securities Exchange Commission.

GOING-IN PROFIT RATES

Chairman PROXMIRE. Before we go ahead with logistics management, I would like to go back to these figures. You showed—the only hard figures we have—you say that maybe the realized profits are considerably less, less than an increase and there may not be any increase at all as compared with the going-in profits, but the only hard figures we have, and you confirm that they are accurate, do show an increase from 7.7 percent to 9.4 percent over this period of 4 years from 1959 to 1963 for the first period and 1964 to 1967 for the second.

Now as far as the LMI is concerned, it would seem to us on the

basis of very fragmentary and admittedly unsatisfactory and inadequate information, we have that the Logistics Management Institute is really an in-house operation designed to justify DOD actions.

INFORMATION REQUESTED ON LMI

On October 10 and November 1, I requested certain information from DOD about LMI. We would like to know, first, the names of the LMI professional staff and their backgrounds and salaries, including the salary of the Executive Director; the amount paid by DOD to LMI on an annual basis since its inception; whether or not DOD is the sole source of income to the Logistics Management Institute or what the portion of its income from the Defense Department funds represent; whether or not the LMI staff are all or predominantly retired or formerly military or DOD personnel or have been previously employed by Defense contractors; whether LMI does work for any group other than DOD; does it subcontract out to universities; has LMI ever written a report critical of DOD practices or policies?

Mr. MALLOY. Well, Mr. Chairman, if I might comment on your observation with respect to LMI, I really don't consider that they are an activity to justify our actions. They are a nonprofit public service independent organization that was established in 1961 by Mr. McNamara as a way to increase the efficiency of Defense procurement and Defense logistics in general.

We feel they have been terribly helpful in doing this over the years. That is the universal judgment of those who are familiar with their work.

They very frequently write reports to us in which they suggest changes in our policy or in which they might disagree with what has been policy up to that point.

We in no way try to, nor do we, in fact, influence the contents of their report.

Chairman PROXMIRE. Then you do say they have written reports critical of DOD procurement practices and you say they disagreed with your policies?

Mr. MALLOY. They have recommended changes in our policies from time to time and that is what we expect from them if their analysis and study show that the policy should be changed.

In other instances they have been able to take concepts which have certain potential and through their studies indicate even greater potential.

DOES LMI DIFFER WITH PROFIT INTERESTS OF CONTRACTORS?

Chairman PROXMIRE. For example, I understand they recommended the weighted guidelines that resulted in increasing profits. What I am trying to get is whether or not this is a group that has made recommendations that would reduce costs, reduce procurement costs, and could be construed by some as to occasionally differ with the interests, the profit interests, of the contractors.

Mr. MALLOY. Mr. Chairman—

Chairman PROXMIRE. Can you cite any example of their making a recommendation of that kind, a recommendation of the kind that

could be construed as adverse to the interests of contractors, in the sense of reducing their profits?

Mr. MALLOY. Well, I am unable to answer quickly a question of that kind.

I will comment on their work in profits to which your question relates. They were used to assist the Department of Defense in constructing our present weighted guidelines profit policies. As a matter of fact, they did an outstanding job in helping us to set up what we regard, and I think what is universally regarded, as a more rational profit policy. LMI was quite instrumental in assisting us in that effort.

Mr. Chairman, in connection with your observation that you had requested certain information about LMI, that information has been provided to you in our letter of November 8, 1968.

LMI DATA NOT CERTIFIED

Chairman PROXMIRE. How reliable are data on profits and net invested capital submitted, delivered by contractors voluntarily to a DOD research group like LMI? Were the submissions certified?

Mr. MALLOY. I feel, and I believe LMI feels, that the data are reliable, Mr. Chairman. There was, of course, in the process of getting voluntary information, no requirement for certification. LMI did not just accept these data. They discussed it with each submitting contractor individually, and, as I indicated in my statement, they made other test checks of the contractors' data against other bench marks that were available, such as published financial statements.

LMI TEST CHECKS

Chairman PROXMIRE. What did the test checks applied by LMI show?

Mr. MALLOY. They showed generally that the data that we were receiving from the companies were consistent with the other known data.

Chairman PROXMIRE. Can you furnish these analyses to the committee?

Mr. MALLOY. I will check that with the LMI, Mr. Chairman, and advise you.

LETTER OF NOVEMBER 8 NOT RECEIVED

Chairman PROXMIRE. Let me say that we are looking forward to getting that letter which you sent on Friday, November 8. It has not been received. The staff hasn't received it, and I haven't received it. We got a letter on October 19 which didn't answer any of the questions we have asked about LMI, but we are looking forward to it.

Mr. MALLOY. Mr. Chairman, I have a copy of the letter here.

Chairman PROXMIRE. Fine.

Mr. MALLOY. And I will be glad to provide it right now.

Chairman PROXMIRE. All right. You are going to furnish the test checks for the record.

(The letter of November 8, referred to in the preceding colloquy and presented to the committee at the hearing follows:)

NOVEMBER 8, 1968.

Hon. WILLIAM PROXMIRE,
*Chairman, Joint Economic Committee,
 Congress of the United States, Washington, D.C.*

DEAR MR. CHAIRMAN: This letter provides the information requested in your letter of November 1, with respect to the Logistics Management Institute (LMI), to the extent available from the Defense Department. A copy of your letter to me and a copy of this response have been sent to LMI and Institute officials have been asked to contact your staff immediately to provide any additional facts which you wish.

LMI was formed in 1961 at the personal initiative of the Secretary of Defense. Its mission is to provide a small professional staff, with diversified consulting and research experience in procurement and logistics, to undertake problem-solving studies. Such a specialized nonprofit organization is able to apply its full time to such studies and to assure us of a continuity of expertise.

Each assignment undertaken by LMI is defined in a Task Order signed by the Assistant Secretary of Defense (Installations and Logistics). Since its formation, the Secretary of Defense has required that LMI confine its work to the Defense Department due to a great need for this type of support. Recently we advised LMI's trustees that it might accept non-Department of Defense assignments compatible with its nonprofit, public-service character, to the extent of 10% of its work effort.

Since its formation LMI has completed approximately 150 tasks. It currently has in process 18 tasks. Its assignments in the field of profit analysis have totalled four, one of which is still in process.

LMI's record of accomplishment has been outstanding. The cost of LMI's annual contract with the Defense Department has aggregated \$6.9 million since its formation in 1961 through June 30, 1968. Its current year contract is \$1.3 million. It has not been possible to precisely quantify the total cost reductions achieved as a result of their efforts; however, we think that this has been a very sound investment.

Recruitment, administration, and compensation of its staff is LMI's responsibility as an independent organization. The Defense Department does examine its cost structure in detail, as it does in other similar situations. The salary structure employed is reviewed and approved for reasonableness. I am confident that you will obtain all of the detail which you wish on the compensation of individual members by contacting Mr. William Finan, Executive Vice President.

We have inquired of Mr. Finan as to the background of the 22 members of his current professional staff. He has provided us with the attached material showing the names of the officers and professional staff, the date they were initially employed, previous employer, and education. You asked if I would verify information coming to your attention "... that all or the vast majority of the professional staff in LMI are either retired military or Department of Defense personnel, or have been previously employed by Defense contractors". As attached material indicates, the information coming to your attention was not correct.

During the annual budget reviews of the Department of Defense, the House Appropriations Committee has obtained and published a display of data relating to LMI. The House Government Operations Committee also considered the role of the Institute. For your ready reference, we are attaching citations to the published hearings.

Sincerely,

THOMAS D. MORRIS,
*Assistant Secretary of Defense
 (Installations and Logistics).*

LMI PROFESSIONAL STAFF, NOVEMBER 1968

	Year employed	Previous employer	Education
Officers:			
Wm. F. Finan, executive vice president	1963	The Diebold Group, Inc.	No degree.
George G. O'Brien, vice president	1962	Touche, Ross, Bailey & Smart	Ph. D., mathematics.
Harry M. Tayloe, vice president	1962	Datronics Engineers, Inc.	LL. B.
Frank M. Reynolds, vice president	1961	Institute for Defense Analyses	Do.
Professional staff:			
Pierpont B. Buck	1965	National Academy of Sciences	Ph. D., physics.
Richard T. Cheslow	1967	Atlas Chemical Industries, Inc.	M.B.A., business administration.
J. H. Denny	1962	Leahy and Co.	B.A., economics.
Thomas E. Dooley	1968	Resource Management Corp.	B.S., mathematics.
Lowell H. Goodhue	1962	The Goodhue Company of Savannah	B.A., economics.
Herbert L. Gurnee	1968	Stanford Research Institution	LL. B./B.A., Business administration.
Charles A. Kezar	1967	Battelle Memorial Institute	M.B.A., management sciences.
Walfred J. Larson	1968	The Boeing Co.	B.S., psychology; B.S., mechanical engineering.
George Marienthal	1967	U.S. Air Force (Obligated military service).	M.S., industrial engineering.
Wm. O. McWorkman	1962	The Boeing Co.	B.S., mechanical engineering.
Theodore O. O'Donnell, Jr.	1962	John I. Thompson & Co.	B.S., industrial engineering.
Perkins C. Pedrick	1963	Atlas Chemical Industries, Inc.	M.S., mathematics.
George B. Roche	1968	Management Technology, Inc.	JD, law, M.S., operation research.
Francis W. Shepherd	1966	Honeywell, Inc.	M.S., mechanical engineering.
Jack W. Smith	1968	U.S. Office of Education (Retired)	B.S., mathematics.
George W. Thompson	1967	Reserve officer, U.S. Air Force	C.P.A.
Charles Tiplitz	1968	General Precision, Inc.	M.A., economic planning, M.S. computer.
Armand B. Weiss	1968	Center for Naval Analyses	M.B.A., marketing.

CITATIONS TO PUBLISHED HEARINGS ON LMI

Systems Development and Management (Part 2), Hearings Before a Subcommittee on Government Operations, House of Representatives, Eighty-Seventh Congress, Second Session, July 1962 (Starting on Page 566).

Department of Defense Appropriations for 1968, Hearings Before a Subcommittee of the Committee on Appropriations, House of Representatives, Ninetieth Congress, First Session, Part 5, Operation and Maintenance (Starting on Page 96).

Department of Defense Appropriations for 1969, Hearings Before a Subcommittee of the Committee on Appropriations, House of Representatives, Ninetieth Congress, Second Session, Part 4, Operation and Maintenance (Starting on Page 170).

Mr. MALLOY. I will have to check that with LMI, Mr. Chairman, to see what information they have. In any event, we certainly can provide you with the methodology that was applied to check the data.

(The following material was subsequently supplied:)

Question. What methodology did LMI use to verify company data?

The requested information is as follows:

Answer. All of the companies submitted total company data (Sales, Capital, Profit), which were then stratified by Defense, Other Government and Commercial. LMI's methodology for verifying these data began with reconciliation with published financial statements.

Twenty of the 39 High and Medium volume companies were more than 70% defense in 1958; 13 of the 20 were more than 90%. In such companies, significant misallocation of capital would cause easily detected discrepancies in the commercial business profit rates. Absence of such discrepancies permits acceptance of the data and use of those companies' defense business profit ratios in comparative analysis of the data of the other companies. Submitted data on capital allocation which were not clearly understood were verified directly with individual companies.

Profit/sales ratios derived from the LMI sample companies were compared with information published by the Renegotiation Board. The data of the submitting companies showed higher average defense profits than did the data published by the Renegotiation Board which include all renegotiable Government business.

On those contract types (CPFF, CPIF, FPI) which were reportable under the DOD profit review system, average profit/sales ratios computed by LMI were compared with DOD in-house data. The profit/sales ratios on FFP contracts were not reportable to DOD and were evaluated by LMI through direct review of certain contracts which caused the actual ratios to be considerably lower than the expected ratios.

Allocations of capital to the commercial portions of the sample companies were compared with FTC-SEC data. Changes in defense capital ratios were traced to DOD changes in policy and to changes in the mix of contract types.

Chairman PROXMIRE. All right, sir, proceed.

LMI PROFIT STUDY

Mr. MALLOY. The data from the LMI profit study have been published and are available from the Defense Document Center. As the published study indicates, it does not cover the entire spectrum of defense contractors. The LMI analysis clearly established the representativeness of the data for high- and medium-volume companies. Representativeness of the low-volume company sample cannot be established with the same degree of certainty, so study conclusions were restricted to the high- and medium-volume companies—high volume in this context means defense sales of \$200 million and over annually; medium volume means \$25 to \$200 million in defense sales; low volume means \$1 to \$25 million in defense sales. We feel that this study, when combined with other available data, such as our in-house data and that available from the Renegotiation Board, provides a sound basis to depict the impact of Defense procurement policies.

Any comparison of the LMI study to the in-house data must take note of the fact that the in-house data does not subtract out unallowable-nonrecoverable costs which are actually incurred by contractors. Likewise, the LMI data must be adjusted from a sales to a cost base. When this is done, the data are comparable to the in-house data for CPFF, CPIF, and FPI contracts. A significant value of the LMI study is that it provides insight into an area—that is, realized profits on firm fixed-price and competitive contracts—that is not now, and should not be, routinely covered by a Government data reporting system. We will explain this further in commenting on your suggestion concerning periodic independent profit studies.

RENEGOTIATION BOARD

As you know, the Renegotiation Board—with certain exemptions—collects data on all contractors having renegotiable sales of \$1 million and over annually. In 1968, the Board's filings increased to 4,000 defense contractors from approximately 3,000 contractors during each of the previous 3 years. These filings, of course, include data from the 40 high- and medium-volume companies including the LMI study. We have interpreted the Renegotiation Board data—when purged of high- and medium-volume companies as defined in the LMI study—to represent a universe of data primarily on low-volume companies—and on

firm fixed-price contracts and subcontracts. We have reasoned that this conclusion has validity from the fact that 83 percent of the excess profit determinations during the 3-year period 1965-67, were made on companies categorized as low volume under the LMI classification procedures—doing business primarily on a fixed-price basis.

It is our belief that the data of the Renegotiation Board, the LMI, and the Defense in-house profit review system complement and supplement each other, and provide a comprehensive picture of the defense profit situation as it exists today.

BACKGROUNDS OF LMI STAFF

Chairman PROXMIRE. I would like at this point to read into the record from the letter you have just presented me the previous employer of the members of the LMI—their professional staff, that is, and I do this without any derogation of them. I am sure they are competent men and doing their very best and making a real contribution, but I would like to call attention to the previous employer, the previous relationship of most of these men. I do this recognizing that LMI can be very useful in many respects, but in having an objective view from the standpoint of trying to keep costs down and trying to be critical perhaps of inefficiencies, either in the Department of Defense or among contractors that would reduce spending by Government, it seems to me to leave something to be desired. There are only relatively few, so it will take me just a minute.

The previous employer—and I won't give the name of the staffs or officers—that will be available to the press or anyone who wants to see it, the Diebold Group, Inc.; Touche, Ross, Baily & Smart; Datronics Engineers, Inc.; Institute for Defense Analyses—those are the previous employers of the four officers.

Professional staff, previous employers: National Academy of Sciences; Atlas Chemicals; Leahy & Co.; Resource Management Corp.; Goodhue Co. of Savannah; Stanford Research; Battelle Institute; Boeing Co.; U.S. Air Force; Boeing Co.; John I. Thompson & Co.; Atlas Chemical Industries, Inc.; Management Technology, Inc.; Honeywell, Inc.; U.S. Office of Education, retired; Reserve officer, U.S. Air Force; General Precision, Inc.; and Center for Naval Analyses, were the previous employment of the professional staff, and I have indicated for the officers. So I think this gives a picture of the background of the men who serve on LMI, again without any criticism of them, but it seems to me it gives us a little clearer picture that this is not precisely the kind of a group, the kind of staff that would be oriented toward a very critical viewpoint or an objective viewpoint, I should say, toward defense contractors.

Again, this is a matter of judgment on the basis of those who would look this staff over, but that is my own judgment.

Mr. MALLOY. Yes, and I would, Mr. Chairman, draw the opposite conclusion from the same list.

Chairman PROXMIRE. Very well. Go ahead.

PERIODIC, INDEPENDENT PROFIT STUDIES

c. Proposal for periodic independent profit studies

Mr. MALLOY. In your letter of October 10, you asked that we express our views with respect to a proposal for an independent and impartial periodic study of defense profits—suggesting perhaps that this be done by a university, a foundation, or some similar, completely independent and impartial organization. While the DOD does not believe that a new study—particularly in the detail suggested—is needed for its purposes, it is not opposed to this proposal. Quite possibly, more comprehensive information relating to profits on all types of Government contracts would provide your committee and selected Government agencies with a data bank from which meaningful evaluations could be made. In order to solicit voluntary information which would be subject to verification, great care would have to be taken in defining the Government objectives, prescribing the extent of coverage desired, and designating the agency which would conduct and administer such a project.

With respect to the DOD's continuing interest in profit analysis, we consider that the current in-house review system which I discussed earlier is adequate—despite the absence of data on firm fixed-price contracts, most of which are either formally advertised or competitively negotiated.

REASON FOR EXCLUDING FIRM FIXED-PRICE CONTRACTS FROM PROFIT REVIEW

In establishing the LMI profit review, we considered whether realized profit data on firm fixed-price contracts should be gathered through an independent study or whether such data should be collected through a routine "in-house" reporting system. During our deliberations, we recognized that the risk of widely ranging profits—or losses—witnessed under firm fixed-price contracts, provides the essential motivation which makes this type of contract superior to others in achieving cost reductions. If we started to routinely—or even periodically—require contractors to disclose the profits which they make on individual fixed-price contracts, it would diminish the value of this type contract. Contractors logically will believe that the higher than average profits disclosed would receive undue emphasis and that nothing would be done about lower than average profits.

WEAKNESS OF LMI PROFITS STUDY

Chairman PROXMIRE. Isn't this precisely the weakness of the LMI attempt to determine realized profits as compared with a very limited but, I thought, useful study by Professor Weidenbaum who testified yesterday? The LMI, as I understand it, asked for the contractors to provide to them what their realized profits were and they showed a drop in profits and they showed low profits, and in evaluating that it would seem to me that you would have to recognize just what you have said, Mr. Malloy, the contractors logically will believe that the higher than average profits disclosed would receive undue emphasis and nothing would be done about lower than average profits. They will report the lower than average profits. Any pollster or anybody trying to get a notion of either attitudes or facts such as what the

profits actually are, would recognize this, it would seem to me, when you rely on the voluntary response and when you get only a partial response, and partial response that doesn't come close to representing anything like a really substantial part of the universe that you are inquiring about.

So it would seem to me that we would have to discount very heavily the LMI conclusion that profits have declined and that profits are low because this is the kind of response that you get when you just send it out and say "Let us know what your profits are."

Mr. MALLOY. Mr. Chairman, I believe there is undoubtedly some misunderstanding as to the information in the LMI report. The LMI report on fixed-price contracts, for example, reports all of the fixed-price contracts of the contractor.

In connection with the data in the LMI report which deals with fixed-price contracts, these contracts were prescribed to the contractor by LMI as a result of their getting from our own records in the Department of Defense a sampling of contracts that were in fact categorized by us to be price competitive. We found that there was a problem of communication between LMI and the contractors as to the definition of "competition." So, to overcome that, we just selected the contracts to be related on and those are the ones reported.

So there is a complete universe that we asked to be reported and there was no picking and choosing on the part of contractors to report just the low profit contracts.

Chairman PROXMIRE. I know you didn't pick and choose but the people who responded, it was a volunteer response—you say that repeatedly in the description.

Mr. MALLOY. Volunteer in the sense that the contractors volunteered to participate or declined to participate. Once he volunteered to participate he supplied all of the information requested.

Chairman PROXMIRE. Just as you say here, those who are doing very well or making high profits would not seem to be inclined to participate in something like disclosing their profits as those who are doing poorly. I know that would be true of our farmers in my State, for instance, the ones who speak up are the ones who are unhappy.

Mr. MALLOY. Mr. Chairman, we have no evidence, there is no evidence, in my judgment, in the LMI report or in any other information that I have seen that would indicate that that type of bias is in fact in the LMI report.

GOVERNMENT-FURNISHED CAPITAL

Chairman PROXMIRE. Did the LMI study take into account the significant amount of Government-furnished capital to the contractors including extensive use of progress payments?

Mr. MALLOY. Yes, sir; it is taken into account when you get information on profit as it relates to a particular contractor's investment. If that contractor has Government facilities he will get, on a given sales volume, a higher turnover of his business and the presence of Government property will be automatically reflected in the figures that come out of that.

MIX OF CONTRACT TYPES IN LMI SAMPLE

Chairman PROXMIRE. How well did the mix of contract types in the LMI sample reflect a mix in the LMI universe? Were the contracts weighted toward the medium-sized contractors?

Mr. MALLOY. I did not understand the question, Mr. Chairman.

Chairman PROXMIRE. Were the LMI contracts heavily weighted toward the medium-sized contracts, medium and small?

Mr. MALLOY. The contractors in the LMI study were, as I indicated, divided into the large, medium, and small. There was a much higher degree of statistical confidence, using the term "confidence" in the statistical sense, in the data for the large volume companies.

Chairman PROXMIRE. I am sure there was, but my question was whether they were underrepresented. You see, the Weidenbaum study, which was primarily for the large contractors, showed that they enjoyed profits of about 75 percent higher than nondefense corporations.

Mr. MALLOY. No, sir.

Chairman PROXMIRE. Consistently in the two different periods he studied.

Mr. MALLOY. Volume II of the LMI study goes into great detail and depicts the degree of confidence that one can have in the data for the high-volume companies. It is that data that has the highest degree of statistical confidence, such that one could say that the data there represent, to a very high degree, the data for the total universe.

Chairman PROXMIRE. I just don't want to delay you and I think you are doing an excellent job, but I think that is not responsive. I asked whether that represented a proportion, a properly proportional amount of the large companies. You are saying that the data from the large companies was accurate, more accurate at least than it was from the others. This may be true, but I am asking whether this represented a sufficient proportion of the large companies that we could construe this as being an appropriate conclusion as to what their profits were.

Mr. MALLOY. As to the large companies, they were very heavy in the sample, and the—

Chairman PROXMIRE. Can you give us any figures on how many, what proportion were represented?

Mr. MALLOY. Of the large companies?

Chairman PROXMIRE. Yes.

Mr. MALLOY. Of 27 high-volume companies in the universe which was studied, 23 (or more than 85 percent) were included in the sample. The 23 sample companies accounted for more than 92 percent of the defense sales dollars of all high-volume companies. When the high-, medium-, and low-volume company data were combined, each of the three volume categories was weighted to reflect its true proportion in the total universe of company numbers, sales, and investment.

Chairman PROXMIRE. And those 23 showed—disclosed—their profits, in the study; they showed them all the way through?

Mr. MALLOY. Yes, they did.

ACCOUNTING METHODS IN LMI STUDY

Chairman PROXMIRE. Do the LMI data show the different accounting methods applied, the varying allocations of costing, such as depreciation allowances?

Mr. MALLOY. No, sir; the study would not show that. That was not an object of the study. Hence, there was no coverage in the study on that subject.

PROFITS OF TOP 10 DEFENSE CONTRACTORS

Chairman PROXMIRE. This is taken from Fortune magazine, June 15, 1968. It shows the 10 top defense contractors: Lockheed; General Electric; United Aircraft; General Dynamics, Inc.; Boeing—McDonnell-Douglas made almost nothing—Textron; North American Rockwell; General Motors; and Avco; and they averaged 15.5 percent profits on invested capital. These are the 10 biggest, and these were the 10 that did a very large proportion of all of the procurement, as you know. So this would suggest that their profits were closely in line with Weidenbaum's study.

If you throw out McDonnell-Douglas, which was the only one that didn't make much money, it would be considerably higher and, in any event, it would be substantially higher than nondefense corporations.

Mr. MALLOY. It is difficult to use that type of general information to draw conclusions with respect to the profits these companies are making on their defense business. At least we found it difficult as we looked at that kind of data some time ago. The biggest of the concerns listed, including these particular companies, all of them, I believe, are large defense contractors and have both defense business and commercial business. It was one of the primary purposes of the LMI study to try to separate the commercial business from the business that they did with other Government departments and the Department of Defense. As you know, we were trying to look at what they were making on their defense business.

Chairman PROXMIRE. This is what Weidenbaum studied and separated out, these were making more money in their defense contracts.

Mr. MALLOY. No, sir; he did not separate it out. He used the total figure. The separate data were not available to him.

Chairman PROXMIRE. My staff disagrees. Perhaps you are right and they are not right.

Mr. MALLOY. I believe my impression is correct.

Chairman PROXMIRE. I believe Weidenbaum did distinguish—

Mr. MALLOY. He distinguished only in the context that he selected; as I understand it, the contractors who were doing 75 percent of their total business with the Government. He made that gross distinction.

NEED FOR COMPREHENSIVE STUDY OF DEFENSE PROFITS

Chairman PROXMIRE. Anyway, what this dialog shows between you and me that we just ought to have some basis for authoritative comprehensive information on defense profits. We asked the Comptroller General about this and pressed him hard to see if his agency would do it, and if they wouldn't, why not; and if they didn't, who should do it, according to their recommendation yesterday. It obviously should

be some reasonably objective outside agency to do it. We do need this information, it seems to me, if we are going to understand it. I can't see that we gain anything by keeping it secret. Maybe the suspicions are completely unfounded but I would hope that you and the Defense Department in view of your real conviction—and you are a very sincere man—I am sure would do all that you can to encourage this kind of accurate, comprehensive determination of what the profits really are.

Mr. MALLOY. As I stated in my statement, Mr. Chairman—
Chairman PROXMIRE. It shouldn't be hard.

Mr. MALLOY. We would have no objection whatsoever to such an outside independent study. We are going to continue our own studies in this area because we think that they are important, and it would seem to me to be up to the Congress to decide whether they wanted such a study. We certainly will cooperate if the Congress decides to launch such a study.

Chairman PROXMIRE. Thank you.
Proceed.

DOD OPPOSED TO ROUTINE PROFIT STUDIES ON FIXED-PRICE CONTRACTS

Mr. MALLOY. As a consequence, we do not think it is desirable and we doubt that it is practicable to routinely obtain profit data on individual fixed-price contracts, particularly those entered into following price competition.

Instead, we believe that periodic special studies such as the LMI report provide adequate data on firm fixed-price contracts and profit rates on price competitive contracts, both negotiated and advertised.

DOD PROFIT REVIEW SYSTEM ADEQUATE

The weight of the evidence is that the DOD profit review system and the LMI defense profit review more than adequately report profit data in that segment of the defense industry categorized as high volume and medium volume. This data, supplemented by the Renegotiation Board data on low volume firm fixed-price and subcontract business, provides an adequate basis over all to depict the level of defense contractor profits.

RENEGOTIATION BOARD DATA

d. Are Defense contractors' profits too high?

With respect to the question posed in your announcement of October 31, "Are Defense contractors' profits too high?", it has been our observation, based on all data available to us at this time, that there is no evidence that this is so. As Secretary Clifford pointed out in his letter of June 13, 1968, there is no factual basis for such a conclusion. Examination of the Renegotiation Board data in the period 1965-67 shows that total excess profits determinations as a percentage of total renegotiable sales were less than one-tenth of 1 percent. Among the many safeguards against profiteering are greater use of fixed-price contracts, improved pricing techniques, improved management of defense contract audits, the influence of competition in procurement practices, and the continuing interest by the Congress in defense contracting.

3. COST CONTROLS IN DEFENSE CONTRACTING

Turning now to your letter of October 18—

Chairman PROXMIRE. You keep going back to it and I think it is a perfectly proper reference to the Renegotiation Board and after all, if these profits are excessive, the Renegotiation Board would show them, but aren't there quite a number of exemptions from renegotiation review?

Mr. MALLOY. Yes, sir, there are exemptions. The main one that comes to mind is companies having less than a million dollars renegotiable sales with the Government. There are other exemptions.

Chairman PROXMIRE. The 5-year carry forward loss provision may be—

Mr. MALLOY. I don't recall that there is such a provision but I am a little rusty, Mr. Chairman, on the point.

Chairman PROXMIRE. Aren't many of the most profitable contracts exempt from renegotiation?

Mr. MALLOY. I don't know.

Chairman PROXMIRE. Doesn't the Renegotiation Board review companies on a fiscal year, not on a contract-by-contract basis?

Mr. MALLOY. That is correct.

Chairman PROXMIRE. So you have a situation where they may make enormous profits in some areas and lose money in others and they would not be subject to review.

Mr. MALLOY. That is absolutely correct.

Chairman PROXMIRE. Aren't renegotiation profits reported based on sales, not net assets?

Mr. MALLOY. The Renegotiation Act, as I recall, tells the Board that they are to look at profits related to sales and, as well, profits related to net worth. The Board, in fact, does look at profit on net worth, profits on sales, and contractor efficiency and other factors.

Chairman PROXMIRE. We have the publication of the Renegotiation Board and they publish nothing on net worth, entirely on sales.

Mr. MALLOY. I didn't mean to indicate that they published information on net worth, but in making a determination under the act as to whether excessive profits were obtained, the Board is instructed by the act to take into consideration return on net worth.

Chairman PROXMIRE. Don't cost allowances for renegotiation differ in significant respects from cost allowances for procurement purposes?

Mr. MALLOY. They do, Mr. Chairman. The cost allowances for renegotiation are those, I believe, that are used for Internal Revenue purposes.

Chairman PROXMIRE. Doesn't the Board itself, Renegotiation Board itself, warn against any generalizations against profitability based on renegotiation in their experience?

Mr. MALLOY. I believe such a caveat has been in Board reports.

Chairman PROXMIRE. Thank you. Go ahead.

COST CONTROLS

Mr. MALLOY. Turning now to your letter of October 18, you asked that we discuss several additional matters relating to pricing in the negotiation process and the general area of the control of costs in defense contracts.

It is acknowledged that contract awards based upon price competition—including formally advertised contracts—provide contractors with the best motivation to control costs to prevent losses and to increase profits. Thus, in the Defense Department during the past 4 years, when true price competition has ranged between 37.7 and 44.4 percent of total dollars awarded, there has existed the motivation to control costs inherent in the competitive contracting system employed.

a. Controls over noncompetitive contracts

However, we recognize that in noncompetitive transactions additional safeguards are necessary, and it is in this area that we assign our most highly qualified personnel—negotiators, engineers, price analysts, auditors, contract administrators, and quality-assurance specialists. This contracting team is charged with the responsibility of evaluating the reasonableness of contractors' cost or price proposals in noncompetitive situations. To assure uniformity in the application of cost allowances, we have published contract cost principles and procedures—some are applicable to production and research contracts with commercial organizations, and other principles are for use in costs applicable to contracts with educational institutions.

These cost principles disallow some normal business costs incurred for such items as bad debts, interest on borrowings, contributions and donations, and entertainment costs. Other costs are allowable within the limitations prescribed in the published regulation. Thus, costs are controlled by administrative regulation which disallows certain costs and limits the allowance of others.

ARE COSTS CONTROLLED AT AN EFFICIENT LEVEL?

Chairman PROXMIRE. How do you know that the costs are being controlled at an efficient level? How do you know it?

Mr. MALLOY. Well, that is an extremely difficult broad question to answer, Mr. Chairman. I think that you can answer that generally with respect to contracts that are awarded as a result of competition. There the control is really the marketplace control. In contracts that are not subject to that discipline, as I indicated in my statement, we are careful in negotiating high-risk contracts with contractors. We go over their proposed prices in great detail, and we have cost principles which bear on this subject. But the Government itself cannot control costs, as such.

Chairman PROXMIRE. That is it. You see, these are bookkeeping costs, and it is very hard to get at this, isn't it—it is very hard for the Defense Department to substitute for management. You shouldn't try to, and you don't.

Mr. MALLOY. That is right; we try to set up effective types of contracts—

Chairman PROXMIRE. It is hard for you to determine whether costs are controlled in an efficient manner other than where you have competition.

Mr. MALLOY. Well, it is much more difficult, Mr. Chairman. Of course, in these large contracts where there is a possible problem area, we have teams of our own people that are resident in contractors' plants, and we have a great deal of experience in the Government. We have Mr. Petty's staff of auditors that are full time in contractors'

plants. We have very intimate knowledge of what is going on. But the best way to control costs is to provide techniques so that contractor management is motivated to control his costs.

b. Cost control in complex weapon systems

The major problem in procurement of complex weapons systems is that of adequately defining the requirement.

CONTRACT DEFINITION

In 1963, with a view to correcting some of the problems of cost control experienced under cost-plus-fixed-fee contracts, a procedure known as contract definition was introduced. The purpose of this technique is to establish the conditions for meaningful competition leading either to fixed-price contracts or incentive contracts through systematic procedures for better defining requirements. The end products of the definition effort are achievable performance specifications, and realistic schedules backed up by credible cost estimates incorporated in a fully structured, fixed-price or incentive contract. Contract definition is conducted under fixed-price contracts which may extend over several months. During this effort, the contractor works in close collaboration with the Government project engineering staff. To provide an efficient basis for future production, contractors' engineers are required to examine trade-off areas, high-risk areas, and interface between equipments. This effort provides a sound basis for financial and pricing staffs to develop the projected costs. Additionally, on many major systems, DOD project engineers develop an independent cost estimate based on engineering, support, and cost analyses.

INCENTIVE CONTRACTS

Chairman PROXMIRE. I would like to ask you a question or two in connection with the C-5A, in which I understand the Government may pay billions of dollars more, \$1 or \$2 billion more than initially expected. It may be enormously costly. Let me ask you, first, what has been the experience with incentive contracts; have they generally kept costs down?

Mr. MALLOY. Our experience, speaking generally to incentive contracts, Mr. Chairman, has been quite favorable. We think that they are better than the alternative that would be available if we didn't use them. The alternative would be cost-plus-fixed-fee contracts. One would have a great deal of difficulty, of course, demonstrating one against the other because you have not employed them side by side. But it is certainly my judgment, and the judgment, I think, of most people in the Department, that a properly structured incentive contract—and we should acknowledge that these are difficult contracts to structure—does provide motivations to the contractor to act in the Government's best interest they are a better form of contract, given the right circumstances, than the alternate available which as I say would be a cost-plus-fixed-fee contract.

TOTAL PACKAGE PROCUREMENT

Chairman PROXMIRE. I understand the later novelty in incentive contracting is so-called total packaging procurement. Explain how this works, using the C-5A as an example.

Mr. MALLOY. There is not necessarily a direct relationship between incentive contracting and total packaging contracting, although most of the time you would find a total package situation a fixed-price incentive contract.

The total package contract concept was developed to overcome one of the problem areas that you pointed out earlier this morning, Mr. Chairman. That was to try to have competition for as much of the total program as we can. Thus, under certain circumstances we feel that it is proper, and that it is possible to combine the development work and the production work into one competition. By so doing we have contractors compete for the total effort and make commitments in that competition that would cover both the development and production. We think there are many advantages that flow from this.

There is the obvious advantage of the competitive environment, also we think that given the right circumstances the contractors have a motivation to control costs through their design work and in recognition that they are also going to do the production work. This total package concept was used on the C-5A aircraft contract 2 or 3 years ago.

It has been used on several contracts since that time. I think that we would acknowledge that this type of contract is still in the embryo stage. We would like to go through a few of them first before we say that this is the salvation of all of our problems. We do recognize that even if this does prove out, as we anticipate that it will, to be a good type of contract, there will be relatively limited situations in which it would be applicable.

We feel that it would be difficult to apply to a weapon that is highly complex, that has a lot of research "state of the art" advances to be made and as a consequence may have a lot of change activity that would flow from that condition. But by and large we believe that this is theoretically a sound method of procurement. We are working on it, and, as I say, it will be some time before—

Chairman PROXMIRE. I understand from the ASPR's, I have the ASPR's dated the first of February, 1968, which describe the Total Packaging Procurement (TPP). It says the purpose of this so-called Total Packaging Procurement, two of them I would like to list very briefly, is discouraging contractors from buying in on a design and development effort with the intention of recovering on a subsequent production program; and, five, motivating contractors to design initially for economical production and support of operational hardware which may not receive sufficient emphasis in the absence of production commitments.

C-5A CONTRACT COSTS

Let's take a look at the C-5A record. What was the original target price and ceiling price for the C-5A?

Mr. MALLOY. Mr. Chairman, I do not have that data. I am not intimately familiar with that contract and was not involved in it.

Chairman PROXMIRE. Do you have people here who are?

Mr. MALLOY. I don't think so—Secretary Charles is the expert on

that contract in the Air Force. I didn't realize we were going to get into it in any detail.

Chairman PROXMIRE. So you couldn't tell me how much the ceiling has been overrun?

Mr. MALLOY. I do not know that.

Chairman PROXMIRE. You don't know how the 10-percent profit was arrived at.

Mr. MALLOY. I do recall that. The 10-percent profit in that contract was given in the RFP. In other words, the bidders were told that the contract profit rate on that competition would be at 10 percent; that is how that was established.

Chairman PROXMIRE. Do you know what Lockheed's profit on net investment will be?

Mr. MALLOY. I do not.

Chairman PROXMIRE. Do you know how much Government-owned facilities are involved?

Mr. MALLOY. I do not, sir.

Chairman PROXMIRE. This is all information we would like to have, because I understand the plant which they are using is Government-owned.

Mr. MALLOY. I believe that is true, yes, sir. Marietta, Ga.

Chairman PROXMIRE. And I hope you can provide that for the record. We are very anxious to get it. I will provide these as questions for you in detail so that you can have them available.

All right, sir.

VERIFICATION OF COST ESTIMATES

The Department of Defense later supplied the following:

Air Force Plant No. 6, Marietta, Georgia, involves Government-owned facilities having an original acquisition cost of \$113,886,000. This is made up of 730 acres of land costing \$287,000, buildings and improvements costing \$73,969,000, and machinery and equipment costing \$39,630,000.

Lockheed Aircraft has installed machinery and equipment costing \$86,322,000 and has financed leasehold improvements (buildings, other structures) on Air Force property costing \$20,805,000 making his total investment at AFP No. 6 about \$107,127,000.

What Lockheed's profit will be on the C-5 contract cannot really be estimated at this point in the program. No profit, of course, was recorded in 1968 although the company reports that the program produced sales of \$318 million. Profit guarantees are not provided for in the C-5 contract, but there are financial incentives or penalties for superior or inferior system performance.

Mr. MALLOY. At the end of contract definition, each competitive contractor must submit a breakdown of the principal cost elements: (1) direct material, (2) purchased parts, (3) subcontracted items, (4) direct engineering labor, (5) direct manufacturing labor, (6) overhead, (7) general and administrative expenses, and (8) profit. Defense auditors examine the company's books and accounting records to verify the basis of the cost estimates submitted and past trends. This process has been reinforced by application of Public Law 87-653, "Truth in Negotiations," which provides insurance that the contractor's factual data is accurate, current, and complete.

EVALUATION OF COST ESTIMATES

During the source selection evaluation, defense engineering specialists evaluate the estimates of the material to be consumed, the labor hours to be expended, the tooling and production processes to be uti-

lized, the learning curves projected and other relevant facets of the contractor's estimate. Concurrent with the engineering evaluation, a Government-cost evaluation is made. This takes into consideration the recommendations of the Defense auditor and the pricing methodology used by the contractor in the projection of his estimates. The detailed procedures for the Government evaluation are contained in the ASPR manual for contract pricing. Before concluding the cost analysis, the contractor's evaluated proposal is compared to and analyzed against the "in-house" independent cost estimates. When the technical and cost analysis is complete, the Government negotiation position is established. Our view is that the audit pricing, cost analysis, engineering, and negotiating skills employed in applying rational analysis to contractors' technical and cost proposals results in contract costs and profits being negotiated which are fair and reasonable.

On the whole, we feel that the procedures we have introduced have worked very well and have resulted in cost control on new major weapon systems acquisitions heretofore unknown in Defense procurement.

TRUTH IN NEGOTIATIONS ACT

4. IMPLEMENTATION OF PUBLIC LAW 87-653, TRUTH IN NEGOTIATIONS ACT

Your letter of October 18 also asked that we fully discuss the implementation of the Truth in Negotiations Act, Public Law 87-653. In hearings before this committee last November, we reported on our further implementation of the provisions of this law. I will now briefly describe actions taken since then.

Defense Procurement Circular 58, dated January 31, 1968, was issued requiring the Defense auditor to set forth in his report the basis and method used by the contractor in preparing his proposal; to identify the contractor's original proposal and all subsequent submissions; and to describe additional cost or pricing data not submitted by the contractor but otherwise coming to the auditor's attention. This will aid the negotiator in determining the specific data certified to by the contractor.

The ASPR manual for contract pricing is being revised to provide procedural guidance on Public Law 87-653 and illustrations concerning the techniques to be used in identifying the data. This manual contains extensive guidance to our contracting personnel in pricing contracts and carrying out the requirements of Public Law 87-653. During the process of revision, we have worked closely with the General Accounting Office (GAO).

A broad and intensive program aimed at indoctrination of both DOD and industry personnel has continued. Associations of contractors, as well as professional organizations such as the American Bar Association, Federal Bar Association, and National Contract Management Association, have all held workshops or special meetings to concentrate on this subject.

Chairman PROXMIRE. Mr. Malloy, at this point I would like to say that I just have one more question and I think this is an excellent statement, that you have a lot of very fine material here. The entire statement will be printed in the record, without objection, and the appendix too will be printed in the record. It is most helpful.

I would like to ask a question on one more matter if that is all right with you, unless you feel there is something overlooked that you feel ought to be stressed especially.

Mr. MALLOY. I don't believe so, Mr. Chairman. It is all covered in my prepared statement.

DOD-INDUSTRY EXPLORATION OF FUNDAMENTAL PROBLEM AREAS

Chairman PROXMIRE. All right. Fine.

I would like to ask you about a memorandum I have here, it is a copy of memorandum from Secretary Morris' office dated October 19, 1968, requesting comments from a number of defense officials on a very high level on the terms attached to the memo. The subject is "Fundamental Problem Areas, Key Areas Worthy of Joint Exploration by DOD and Industry, in Calendar Year 1969." The attachments, I suppose, are designed to define the fundamental problems in key areas worthy of joint study by defense and industry and I wonder if you would comment on this document and explain how it came about, who authorized it, and what it is used for.

(The material referred to by Chairman Proxmire follows:)

WASHINGTON, D.C., October 15, 1968.

Memorandum for the Director, Defense Research and Engineering, the Assistant Secretary of Defense (Comptroller), the Assistant Secretary of the Army (I&L), the Assistant Secretary of the Army (FM), the Assistant Secretary of the Army (R&D), the Assistant Secretary of the Navy (I&L), the Assistant Secretary of the Navy (FM), the Assistant Secretary of the Navy (R&D), the Assistant Secretary of the Air Force (I&L), the Assistant Secretary of the Air Force (FM), the Assistant Secretary of the Air Force (R&D), the Director, Defense Supply Agency.

Subject: Fundamental problem areas: Key areas worthy of joint exploration by DoD and industry in calendar year 1969.

As you know, in independent efforts the Industry Advisory Council and DoD have attempted to identify current fundamental problem areas affecting the Defense/Industry relations. The results of the industry effort are summarized on Attachments A & B, while the DoD listing is shown on Attachment C. At the recently concluded IAC meeting, an effort was made to consolidate these listings and to develop plans for further action. Attachment D is the joint statement agreed upon which identifies four areas which deserve further cooperative exploration during CY 1969. It was likewise agreed that the IAC members and DoD should now attempt to develop a more specific blueprint for IAC action in CY 1969, using these four major areas.

My purpose in this memorandum is to request your thoughts and suggestions of specific constructive projects or programs which should be undertaken by IAC with DoD during CY 1969, related to the four key areas. Your reply is required by 22 November 1968 to permit consolidation of the results with those being obtained from the Council members. A final proposed program for effective use of the Council will be developed in December and will be made available to you for comment prior to adoption.

THOMAS D. MORRIS,
Assistant Secretary of Defense
(Installations and Logistics).

FUNDAMENTAL PROBLEMS (OCTOBER 1968)

- I. Achieving higher public and congressional confidence in integrity and effectiveness of the Defense Procurement Process
 - A. Influence on Fundamental Problems II, III and IV
 - B. Existing Misconceptions
 - Extent of Competition
 - Profit Levels
 - Management Effectiveness
 - "Military-Industrial Complex"
 - C. Effect of Congressional Practices on Public Attitude and Procurement Policy
 - D. Effect of Press Coverage in Formulating Public Attitude
 - E. Better Understanding of Program Costs
 - F. Effect on Employee Morale and Retention

DETAILED PROBLEMS

Uniform Accounting Standards Legislation
 Application of Commercial Code to Government Contracts
 Government Property Management Hearings
 Excess Profits Hearings
 Price Warranty for Small Purchases Legislation
 Renegotiation Act Expansion
 Truth-in-Negotiations Act (and Compliance Dilemma)
 GAO Investigations and Audits
 Holifield Commission Bill
 Lack of Competition Hearings
 Specific Program Investigation (e.g., TFX, M-14, LOH, etc.)
 "Review of Defense Procurement Policies, Procedures, Practices" Report
 "Defense Contract Audits" Report
 "Economy in Government Procurement and Property Management" Report
 Statutory Profit Limitations
 "Support Services Contracting" Investigations
 Pending Patent Policy Legislation
 Socio-Economic Legislation

II. Attracting and Motivating Contractors To Accomplish Defense Requirements

- A. Influence of Fundamental Problems I and III
- B. Realized Profit Levels
- C. Disallowance of Necessary Costs of Doing Business
- D. More Effective and Efficient Competition
- E. Shift of Risk to Contractors
- F. Post-Contract Obligations
- H. Nature of Market Place (monopsony)
 - Influence of Social, Economic, Political Factors
 - Fluctuation in Sales Volume
 - Dilemma of Committed Contractors
 - Uncertainty on Long Range Planning
 - Effect on Committing New Resources/Assets
- I. Pressures Toward Diversification
- J. Differences Between Public and Private Contracting

DETAILED PROBLEMS

Proliferation of Socio-Economic Programs; Duplication and Overlap
 Arbitrary Disallowance of Legitimate and Necessary Costs
 Profit Opportunity Does Not Match Risks Involved
 Overemphasis on Warranty Use
 Indemnification of Extra-Hazardous Risks
 Penalty Only in Weighted Guidelines for Facilities Furnished
 Socio-Economic Set-Aside Programs Impact on Effective Competition and Best Source
 Failure to Recognize Importance of Reasonable Profits
 Implied Warranties
 Make Available R&D to Civil and Urban Use
 Increased Audit Requirements
 Narrow Interpretation of Training and Education Cost Principle
 Post Performance Responsibility
 Forced Cost Sharing Because of Mismatch of Work Scope and Available Funds
 Unrealistically Low Negotiated Profit Rates
 Buying-in
 Disallowance of Patent Department Costs
 Inadequate ASPR Coverage for Implementing Socio-Economic Programs
 Advance Understanding of Cost Allowability
 Unallowability of Income Tax in Relocation Cost Principle
 Narrow Interpretation of Help Wanted Advertising Cost Principle
 Disallowance of Rental Costs on ADPE
 Restrictive Cost Principles on IR&D and B&P
 Invention Disclosure Review Board Demands on Contractors Time and Records

Increased Management Controls Imposed by Contract, e.g.

- Configuration Management
- Work Breakdown Structure
- Cost/Schedule Control Systems Criteria
- Technical Performance Evaluation
- System Project Engineering Management
- Integrated Logistics Support
- Quality Control and Assurance
- Conflicting Management Control Systems
- Costs of Standby Awaiting Award Decision
- Auditors Requirements for Unnecessary Data and Access to Records
- Non-Allowability of Interest Experts
- Disallowance of Certain Idle Plant Costs
- Auction and Other Improper Negotiation Practices
- Withholding of Fee
- Slowness in Settling Overhead
- Advance Agreements in R&D
- Unrealistic Delivery Schedules
- Truth in Negotiations Act (and Compliance Dilemma)
- Warranty of Technical Data
- Make-or-Buy Decision Process
- Government Patent Policies

III. Achieving Consistency of Field Practice With Intent of Basic DOD Policy

- A. Influence of Problem I
- B. Need for "Statement of Fundamental Principles"
- C. Clarification of ASPR Committee's Charter and Ground Rules re Policy and Practices
- D. Clarification of DCAA Charter re Policy and Decision Making
- E. Improving Policy Flow-Down to, and Implementation Feedback from, Field Level
- F. Improving Practices During Source Selection
 - Assessment of Degree of Technical Risk
 - Price and Cost Analysis
 - Selection of Contract Type and Related Clauses
 - Selection of Management Control Systems
 - Use and Nature of Competition (Technical vs Price)
- G. Improving Practices During Contract Performance
 - Contract Change Direction, Control, Definitization
 - Performance of Government's Obligations
 - Government's Role in Subcontracting
 - Non-Contractual Requirements
 - Final Price/Cost Settlement
- H. Personnel Development and Training

DETAILED PROBLEMS

- ASPR Committee Role of Providing Specific Guidance versus Policy
- Circumvention of Proper Meaning of "Adequate Price Competition"
- Lateness in Settling Change Claims
- Lateness in Definitizing Letter Contracts
- Auctioning Techniques in Negotiated Procurements
- Mismatch of Contract Type and Nature of Program
- Quota on Fixed Price Awards
- Patent Title versus License
- Excess Pricing Backup and Cost Breakdown
- Pricing Certificates Required Unnecessarily
- Misuse of Fixed Price Contracting
- Excessive Data Requirements
- Policy Expressed by Directives, Instructions, Handbooks, Guides
- Application of Section XV Cost Principles to Fixed Price Contracts
- Lateness of Funding
- Price Analysis Duplication by DCAA, DCAS and Procuring Activities
- Cost Sharing in IR&D
- Unnecessary Requirements for Full Data Rights
- Late Definitization of Contracts
- Over-Application of Public Law 87-653

- Disregard of Weighted Guidelines
- Reluctance to Process Value Engineering Proposals
- Delays in Negotiation and Slow Definization of Contract Changes
- Lack of Uniformity, and Failure to Delegate Contract Administration Responsibilities
- DCAA Responsibilities not Clear to Industry
- Contracting Offices' Unwillingness to Make Decisions
- Inadequacies in Methods of Determining Requirements and Requesting Technical Data
- Handling of Post Audits by DCAA
- Indiscriminate Use of Contract Clauses
- Late Provisioning
- Lack of Clarity and Unrealistic Application of Quality Specifications
- Misuse of Liquidated Damages Clause
- Use of Letter Contracts where Unnecessary
- Action and Other Improper Negotiation Practices
- Slowness in Settling Overhead
- Refusal to Use Basic Agreements
- IV. Increasing Effectiveness of Major Weapon System Acquisition Process
 - A. Influences of Fundamental Problems I and III
 - B. Effectiveness of Program Decision Process
 - C. Effectiveness and Integrity of Source Selection Process
 - D. Flexibility of Contracting Methods and Techniques (Proper Choice of Fixed Price and Cost Type Contracts)
 - E. More Realistic Cost Estimating
 - F. Degree of Involvement in Contractor's Management and Control
 - G. Impact of Budgetary Constraints
 - H. Furnishing DOD Advanced Planning Knowledge to Contractors
 - I. Proper Allocation of Resources in Various Phases
 - J. Level of R&D

DETAILED PROBLEMS

- Difficulties with Multi-Year Procurement
- Requests for Planning Proposals on Unapproved or Unfunded Efforts
- Unrealistic Delivery Schedules
- Misuse of Fixed Price Contracting
- Inadequate Identification and Consideration of Technical Unknowns
- Inadequacy of Technical Specifications
- Premature Use of Price Competition
- Premature Lock-in on Design Requirements
- Make-or-Buy Decision Process
- Subcontractor Source Selection Process
- Over-shift of Risk to Contractors
- Delays in Source Selection Process
- Availability of Development Concept Papers
- Overhead Cost Management Study, Surveys, Tests
- Impact of Socio-Economic Programs; Duplication and Overlap
- High Costs of Implementing Contract Imposed Management Systems
- Increasing Number of Clauses in Typical Contract
- Overemphasis on Warranty Use
- Lateness in Definitizing Letter Contracts
- Lateness in Furnishing Government Property
- Increase in Controls Despite Shift in Risk to Contractors
- Socio-Economic Set-Aside Programs Impact on Effective Competition and Best Source
- Neglecting Technical Competition for Price Competition
- Prime ? Responsibility for Subcontractor Compliance with PL 87-653
- Nonapplication of QWAS to Many Cost Principles and Controls
- Increased Audit Requirements
- Excess and Time Consuming Price and Cost Analysis
- Buying-in
- Cost Sharing in IRSD

Complexity of Managing Controls Imposed by Contract, e.g.,
 Configuration Management
 Work Breakdown Structure
 Cost/Schedule Control Systems Criteria
 Technical Performance Evaluation
 System Project Engineering Management
 Integrated Logistics Support
 Quality Control and Assurance
 Conflicting Management Control Systems
 Proliferation of Reports Required by Contract
 Auditors Requirements for Unnecessary Data and Access to Records
 Late Provisioning
 Lack of Clarity and Unrealistic Application of Quality Specifications

FUNDAMENTAL OBJECTIVES [OCTOBER 1968]

- I. Achieving higher public and Congressional confidence in integrity and effectiveness of the defense procurement process
- II. Attracting and motivating contractors to accomplish defense requirements.
- III. Achieving consistency of field practice with intent of basic DOD policy
- IV. Increasing effectiveness of major weapon system acquisition process

DOD LISTING OF AREAS MOST WORTHY OF EXPLORATION BY INDUSTRY ADVISORY COUNCIL

- I. Areas Requiring Joint Action by DOD and Industry
 - A. Obtain Better Public Understanding of Defense Procurement
 - B. Obtain Better Understanding of the Nature of the Market Place
 - C. Conduct Better Long Range Planning with Industry
 - D. Develop New Procurement Methods and Techniques
 - E. Determine Proper Role of Defense Procurement in Socio-Economic Programs
- II. Areas Primarily Concerned With DOD Policies and Actions
 - A. Assure Competent Personnel
 - B. Obtain More Effective and Efficient Competition
 - C. Obtain Better Estimating and Cost Control
 - D. Assess Impact of Financial Constraints on Procurement
 - E. Examine Trend Toward Extending Contractor Responsibility Beyond Period of Performance
- III. Areas Primarily Concerned With Industry Policies and Actions
 - A. Assess Effect of Diversification on Defense Industrial Base
 - B. Define More Precisely the Principal Factors Which Motivate Industry to Seek Defense Business
 - C. Evaluate the Growth in Overhead Costs and Adequacy of Controls
 - D. Evaluate Differences Between Public and Private Contracting Practice—and Lessons To Be Learned

SUGGESTED STATEMENT OF KEY AREAS WORTHY OF JOINT EXPLORATION BY DOD AND INDUSTRY IN CALENDAR YEAR 1969

BACKGROUND

Instead of characterizing these themes as "fundamental problems, issues or objectives"—I believe the most constructive results will be achieved by categorizing them as "key areas worthy of joint exploration by DoD and industry in CY 1969." In each case we and industry need to develop the facts, assess their meaning, outline alternative courses of action for debate, and refer our recommendations to SecDef for final decision. Neither of us should prejudge the problem or the solution.

Using this approach and the basic themes contained in the Mettler and DoD charts, I suggest defining four major areas as follows:

Area I—Steps to Maintain Public and Congressional Confidence in the Integrity and Effectiveness of Defense Procurement and Contractor Performance

- A. Identify current misconceptions and answer them systematically.
- B. Devise programs for use both by DoD and industry which will regularly communicate significant information to Congress, the press and the public (in contrast to today's tendency to react to criticism).

C. Improve techniques of recognizing the role and contribution of employees of DoD and industry.

D. Encourage and support objective appraisals of procurement practices and industry performance.

Area II—Steps to Obtain Full Understanding of and Compliance with Basic Procurement Policies by DoD and Industry at All Levels

A. Determine whether new or expanded mechanisms of communication are needed between Defense and industry to improve understanding and to document industry's concerns or suggestions. (Examples: industry comments on (1) ASPR Committee role, (2) DCAA role, (3) improving practices during source selection, (4) improving practices during contract performance.)

B. Seek ways to improve DoD's internal methods and techniques for disseminating policies and obtaining feed-back on implementation from the field level. Seek ideas and assistance from industry and from experts in how to improve the process of communicating in DoD.

C. Improve the selection, training and career development of DoD military and civilian personnel assigned to procurement and weapons acquisition. (A major effort is in process.)

Area III—Steps to Foster and Maintain a Healthy Defense Industrial Base

A. Monitor profit performance on defense work and evolve measures of profit adequacy by type of work, type of contract, risk assumed, etc.

B. As a related matter, continue to evaluate cost allowance (disallowance) policies for reasonableness. Be particularly alert to unusual trends which require prompt understanding, such as the growth in overhead.

C. Seek to develop more efficient and effective practices of obtaining the optimum degree of competition on defense awards. Explain these practices convincingly to Congress and the public.

D. Improve long-range planning to minimize uncertainties and foster sound long-term capital investment.

Area IV—Steps to Increase the Effectiveness of the Major Weapon System Acquisition Process

A. Carefully document, using actual cases, (1) the program decision process, and (2) the source selection process, in search of opportunities for increased effectiveness.

B. Improve techniques for planning the most suitable "strategy" of contracting, including proper placement of risks and obligations, establishment of rewards and penalties, provision for program redirection, etc.

C. Develop techniques for producing more realistic and reliable cost estimates by contractors; and improve DoD's capability to develop independent government estimates—in order to minimize the severe problems resulting from cost growth.

D. Seek to minimize DoD involvement in contractor's internal management and control, consistent with the government's responsibility to assure timely delivery of the required product at a reasonable cost.

KEY AREAS FOR EXPLORATION BY DOD AND INDUSTRY IN CALENDAR YEAR 1969

AREA I

Steps to Maintain Public and Congressional Confidence in the Integrity and Effectiveness of Defense Procurement and Contractor Performance

AREA II

Steps to Obtain Full Understanding of, and Compliance With, Basic Procurement Policies by DOD and Industry at All Levels

AREA III

Steps to Foster and Maintain a Healthy Defense Industrial Base

AREA IV

Steps to Increase the Effectiveness of the Major Weapon System Acquisition Process

Mr. MALLOY. Mr. Chairman, that is part of our continuing assessment of the major problem areas that develop within the Department

in our contracting or acquisition systems. It is merely an attempt to identify and document areas for continuing study and future work.

Chairman PROXMIRE. Are there similar documents for previous years?

Mr. MALLOY. Sir?

Chairman PROXMIRE. Are there similar documents like that for previous years or is this the first year?

Mr. MALLOY. Yes, sir, I was about to mention what will result from this paper. It is a staff effort which we hope to refine through getting comments from the military departments. It will be used as a basis for suggesting certain studies to be made and items to be considered by the Industry Advisory Council.

Chairman PROXMIRE. This is the first year you have had this.

Mr. MALLOY. No, sir, there was a study somewhat similar to this but conducted a little differently done in 1962, I believe.

Chairman PROXMIRE. Will you supply that?

Mr. MALLOY. It was called Fundamental Issues.

Chairman PROXMIRE. Will you supply that for the committee?

Mr. MALLOY. All right, sir.

Chairman PROXMIRE. Thank you.

I would like to ask why you list as detailed problems, under fundamental problems, No. 1, items such as uniform accounting standards legislation, excess profits hearings, Renegotiation Act expansion, GAO investigations and audits, lack of competition hearings, and other hearings and reports by this committee as a problem of, a fundamental problem for, the DOD. You see I am just wondering if the fundamental problems for the DOD and the industry are what you can do about getting Congress off your back.

Mr. MALLOY. Mr. Chairman, that, these items that you read, I don't believe are part of our staff effort. They sounded somewhat like some staff effort that was done in the Industry Advisory Council. We provided it to our people as an indication of some areas for study that some of the members of the Council thought were pertinent.

Chairman PROXMIRE. This comes out under the Assistant Secretary of Defense stationery, and it is all one document that is set out together, fundamental objectives, achieving higher public and congressional confidence and integrity and effectiveness in the Defense procurement process in addition to the others I have indicated here. I am just wondering if it is a proper way to expend taxpayers' money and it does lend some credence to General Eisenhower's warning when he left office about the military-industrial complex. It would seem to me—

Mr. MALLOY. Mr. Chairman, I don't have that document in front of me but as I recall the paper that you read from was identified in the cover letter as being an industry paper, and was provided for their information.

I think that the effort is a perfectly fine exercise on the part of the Defense management to try to assess the basic and important things that are problem areas, and try to devise solutions.

Chairman PROXMIRE. I won't object at all, provided the problem was how you could develop uniform accounting standards or what you can do about excess profits or what you can do about lack of competition. But that isn't it. These are designed for what you can do about

the inquiries by Congress into these matters, how you can best meet them and the implication is very strong of how you can best mute them or cut them off.

Mr. MALLOY. Mr. Chairman, that is not really our point of view, and I am sorry that that was the implication contained in that document. We don't have that as our point of view. We are trying as best we can to be responsive to your committee, to you and to other committees of the Congress all the time.

Chairman PROXMIRE. Well, I certainly hope so.

Mr. MALLOY. The DOD prescribes a Form DD-633 for use by contractors in submitting cost proposals that provides a display of cost elements. Instructions and guidance on this form have been revised to indicate clearly to contractors the requirements of ASPR implementing Public Law 87-653. These forms, as revised, were published in Revision 30 to ASPR, dated September 1, 1968.

The foregoing actions provide greater precision and clarity to the defense regulations originally issued in December 1962. We feel that our current administration of these regulations, coupled with continuing reviews by GAO and the Defense Contract Audit Agency (DCAA), are providing the necessary supervision to assure full compliance by contractors.

5. STEPS TAKEN TO TRAIN A CORPS OF EXPERTS IN PROCUREMENT

In response to the request contained in your letter of October 18 to be advised of the steps being taken to train a corps of experts in procurement, contract administration, and property management, we are submitting, as an attachment to our testimony, a detailed presentation describing the training programs and career development program initiated and improved since 1962 in the field of logistics—showing the emphasis that we place upon procurement training.

PART B—CONTROL OF GOVERNMENT-OWNED PROPERTY IN THE HANDS OF CONTRACTORS

For the first time since 1965, the total value of this property has declined—reflecting the tight controls which have been introduced, the increased facilities investment by our contractors, and a leveling off in Vietnam procurement volume:

Government-owned, contractor-held property

[In billions]

Category ¹	Fiscal year			
	1965	1966	1967	1968
1. Industrial plant equipment costing over \$1,000.....	\$2.2	\$2.3	\$2.6	\$2.7
2. Other plant equipment costing less than \$1,000.....	1.6	1.8	1.9	1.8
3. Materials.....	1.7	4.7	4.7	3.4
4. Real property.....	2.5	2.5	2.4	2.4
5. Special tooling and test equipment.....	2.9	2.9	3.0	3.0
Total.....	10.9	14.2	14.6	13.3

¹ As described in the committee's April report.

In the committee's April report, seven recommendations pertaining to control of Government property appeared. I would like now to report to you on our actions in response to each of these recommendations.

Recommendation No. 8.—The Department of Defense must make a much greater effort to enforce its stated policy that contractors provide their own facilities, equipment, tooling, and materials incident to the performance of Government contracts.

Our longstanding policy was reaffirmed in a directive issued on February 22, 1968.

On March 30, a directive was issued discontinuing the furnishing of equipment having a unit cost of less than \$1,000.

On April 17, new regulations were issued which precluded the furnishing of Government equipment costing over \$1,000, unless the contractor expresses, in writing, his unwillingness or financial inability to acquire the necessary facilities with his own resources. In such cases, the head of the agency must then determine that it is necessary to furnish production facilities in order to meet (1) mobilization requirements, or (2) an urgent need which cannot be met in any other manner.

Under these more stringent policies, the Office of the Assistant Secretary of Defense—Installations and Logistics—deleted over \$29 million in proposed equipment purchases in the fiscal year 1969 budget. New procurement approvals are being limited to critical Vietnam-related production facilities with little or no peacetime application. Even here, we have been able to satisfy a significant portion of such requirements by utilization of idle production equipment.

Recommendation No. 9.—The Department of Defense must make a much greater effort to encourage contractors to replace Government-owned equipment when it becomes inefficient or outmoded, and to require economic justification for any contractor requesting replacement of equipment at Government expense.

DOD instruction 4215.14 requires an economic analysis and justification as a basis for replacement of machine tools. Hence, this part of the committee's proposal is standard practice.

A modernization program is highly desirable since over 60 percent of Government-owned IPE in contractor plants is of Korean vintage or older. We believe it would be far more efficient to negotiate the sale of such equipment, at fair market value, and to place the responsibility for its maintenance, modernization, and replacement in private hands. DOD should use its limited investment funds to modernize its essential in-house production facilities, such as ammunition loading plants, shipyards, and overhaul and repair facilities. In March of this year, you introduced a bill, S. 3122, to accomplish this objective. The Department of Defense, as you know, recommended similar legislation. We urge your continued support of legislative authority which would permit such a worthwhile disposal program.

Recommendation No. 10.—Where costs of production have been reduced as a result of replacement or modernization of equipment at Government expense, appropriate contract adjustments and price reductions should be made.

A revision in the Armed Services Procurement Regulation—7-705.22—was published in April of 1968 to accomplish this recommendation.

Recommendation No. 11.—Immediate steps should be taken to collect full payment for past, present, and future use of Govern-

ment-owned property, and to establish an adequate system of use records.

Working with the Office of Emergency Planning, the Defense Department has instituted new procedures requiring advance approval for the use of Government-owned equipment on commercial work. Increased rental rates have also been promulgated.

Contractors are now required to establish and maintain an approved management system covering Government equipment—including adequate property records on each piece of equipment. In addition, we are now testing, in 19 plants, various techniques of recording the day-to-day utilization of such equipment. The principal question we are seeking to answer is whether such records should be maintained on all pieces of equipment regardless of value, or only on selected pieces of equipment of high value.

Recommendation No. 12.—The inventorying of all Government-owned property on loan to contractors should be expedited by all defense agencies. Proper control should be established for each class of property.

This project is 90 percent complete, and we hope to bring it to full completion by December 31, 1968.

Recommendation No. 13.—A system of uniform rental rates should be established for the use of all contractors on an equitable basis who have been furnished Government-owned property.

Uniform rates were promulgated by the Office of Emergency Planning on June 7, 1968, and became effective July 1.

Recommendation No. 14.—A thorough review should be made of any misuse or unauthorized use of Government property in the possession of contractors. Penalties should be assessed for unauthorized or improper use of such property.

Regulations published in Defense Procurement Circular No. 61, on June 10, set forth the conditions under which commercial use of DOD-owned equipment may be authorized. When unauthorized use is found, the contractor is liable for the full monthly rental fee for the equipment for each month in which unauthorized use occurred.

We believe that our actions have been responsive to the recommendations of your committee. We shall continue to administer this program vigorously.

PART C—SUPPLY MANAGEMENT AND THE NATIONAL SUPPLY SYSTEM

As you know, Mr. Chairman, this is a many-faceted subject. Over the years, we have responded to this committee's particular interests in the integrated management of common items. In addition, the committee has indicated a desire to keep informed of steps taken—to increase the accuracy of inventory records; to purge inactive items from inventory; and to improve the management of short shelf-life items.

We would like to report to you on our progress in each of these areas:

1. INTEGRATED MANAGEMENT OF ITEMS

As of September 30, 1968, 53 percent of the 3.9 million items used by DOD are under the integrated management of either DSA, GSA,

or a military department. Since 1965 items under integrated management have increased from 38 percent (1.5 million) to 53 percent (2.1 million).

Integrated weapon support management is another vital phase of our program. Integrated support of Navy and Air Force F/RF-4 weapon systems was further expanded during fiscal year 1968. As of June 30, 1968, 7,254 items were under integrated weapon support management (IWSM). In addition, 2,559 other F/RF-4 items in common use between the Navy and Air Force have been identified for interservice supply support. Service tests are now in progress to determine the best management techniques and procedures for applying IWSM to the depot maintenance function, and for the interservicing of depot maintenance for common-use items between services.

The knowledge gained through the experience and testing of IWSM on the F/RF-4 is being applied to other multiservice aircraft programs. Further, interservice support agreements are being developed and used to meet common supply and maintenance requirements for those multiservice aircraft and engines no longer in production.

2. NATIONAL SUPPLY SYSTEM

We continue to make good progress in the area of expanding support of the Federal civil agencies by the DOD. The DSA currently supports 14 agencies under formal interagency supply support agreements. The Coast Guard and National Aeronautics and Space Administration are supported with a full range of DSA materiel. Veterans' Administration and Public Health Service with selected medical items and perishable subsistence; GSA (Transportation and Communications Service) with electronic items; Office of Economic Opportunity with clothing and textiles and subsistence items; etc. DSA is also in the process of assuming mission support of all Federal agencies for fuel and electronic items.

Under the 1964 agreement between DOD and GSA, responsibility for 65 Federal supply classes, containing approximately 68,000 items, has been transferred to GSA. The GSA has also assumed responsibility for performance of the coordinated procurement and general mobilization reserve functions related to this transfer.

The 1964 agreement also provides for the joint review of additional FSC's for possible transfer to the GSA, as appropriate, and when it can be clearly determined that such actions would result in additional savings to the Government. Types of commodities due for consideration under a forthcoming joint review are lumber, certain construction supplies, books and pamphlets, miscellaneous printed matter, commercial and industrial gas cylinders, and commercial chemicals.

In January 1968, we joined with GSA in making a study of the procurement of commercial vehicles. For a number of years, GSA has purchased commercial vehicles for all agencies of the Government except the DOD. The GSA/DOD study was completed in March 1968 and concluded that savings in the form of reduced personnel and lower prices for vehicles could be achieved if one agency performed procurement for the entire Government. In view of this conclusion, procurement responsibility for commercial vehicles was assumed by GSA on July 1, 1968.

In still another area, we are working with GSA to eliminate any overlap between DOD and GSA wholesale systems. A recent GAO examination revealed that both GSA and the Navy were maintaining wholesale stocks in the Oakland area in support of Navy requirements in the Pacific. We are working jointly with GSA to eliminate this duplicate stockage and to develop a single support system at Oakland to meet Navy Pacific needs on GSA items.

3. PURGING INACTIVE ITEMS FROM INVENTORY

During fiscal year 1968, the military services and defense agencies eliminated a total of 351,437 Federal stock numbers from the Federal catalog system.

Actions to eliminate inactive items from the inventory continue at an intensified pace. A DOD Instruction was published in February 1968 directing a DOD-wide inactive item program. Detailed procedures for the detection, elimination, and reporting of inactive items were published in July. These procedures provide for the categorization of potentially inactive items of supply by automated means. The assigned inventory managers are responsible for conducting detailed reviews of all potentially inactive items, thus categorized, in accordance with a predetermined schedule.

Yearly performance goals for this program have been developed and are being reported through the DOD cost reduction and management improvement program.

4. IMPROVEMENTS IN MANAGEMENT OF SHORT-SHELF-LIFE ITEMS

A significant step forward in gaining effective control of short-shelf-life items has been made with the reissuance of a major revision to the DOD instruction 4140.27 dated September 12, 1968. These revisions will materially increase the potential for greater utilization of shelf-life items; decrease screening time; and provide a timely utilization report.

The new instruction prescribes that contracts must specify that each unit package, intermediate container and exterior shipping container of packaged items—and the material itself in the case of unpacked items—will be marked to show inspection/test date and expiration date.

The following requirements for screening and reporting are imposed:

(a) Condition code "A" assets (more than 6 months shelf-life remaining) will be screened for DOD-wide utilization.

(b) Condition code "B" assets (3 months through 6 months shelf-life remaining) will be reported to GSA for utilization screening; DOD requirements will be given a priority during the first 15 days of the Federal screening period.

(c) Condition code "C" assets (less than 3 months) will be reported by the property disposal officer for local utilization screening (DOD and Federal) and subsequent donation.

The instruction directs that a quarterly utilization report will be submitted to the Office of the Secretary of Defense showing:

(a) Number and dollar value of line items reported for utilization.

(b) Number and dollar value of line items transferred for utilization.

5. IMPROVING INVENTORY RECORD ACCURACY

As a result of a GAO report issued last year and questions raised by this committee about the accuracy of inventory records at DOD depots, a study group was organized to examine all physical inventory controls in use in each of the military services and the DSA. The group found that procedures used to process, receipt, and issue documents needed revision in order to reduce the time required to record assets when they are received and drop them from the records when they are issued. The group also found that a vast majority of the inventory adjustments included in the GAO report were, in fact, not errors of actual losses or gains in inventory, but were changes which in no way affected the physical count of the stock held in our warehouses. Some of these changes are as follows: changes in the condition of items in storage; catalog price changes; changes to Federal stock numbers; and reidentification of materiel in storage. These kinds of inventory adjustments are not indicative of the management control problems associated with the discovery of real losses and gains during the physical inventory process.

We will issue two DOD instructions this month which will purify inventory adjustment information, improve our receipt and issue procedures, improve warehouse location accuracy, and require a uniform reporting system to provide more useful indicators of inventory control.

6. MANAGEMENT OF AUTOMATIC DATA PROCESSING SYSTEMS

As we indicated in testimony before the Military Operations Subcommittee, it was by design that we chose to evolve to rather than impose centralized systems development. Today, each service is in the process of implementing a comprehensive plan of standardized computer systems for materiel management to be fully implemented by the early 1970's.

During the past several years, the role of the Office of the Assistant Secretary of Defense (Installations and Logistics) was one of mentorship to assure that specifications were adequate and to apply economic acquisition policies. During this period we also directed the development of standard data systems (MILSTRIP, MILSTRAP, etc.) which provide a common language for communicating between systems.

Because of these efforts we now have the "building blocks" to achieve greater centralization and more effective control. In the Office there is now a staff of key personnel from each of the services and DSA to review systems in-being and in-progress, to propose objectives and develop compatible procedures and systems for the military departments to follow.

7. SOUTHEAST ASIA SUPPLY SUPPORT

Outstanding supply support provided to our military forces in Vietnam continues. The adequacy and quality of our supply support is monitored continuously at all levels in the DOD, and through this means we are able to assure you that the requirements of our forces are met on a timely basis.

As one example of this high level of continuing interest, each week a report is received in our office showing the percent of major Army equipments out-of-service awaiting parts. These reports have been received since December 1965 and continue to show exceptionally low deadline rates for lack of repair parts.

(a) On November 24, 1967, the Secretary of Defense directed that a major effort be exerted to prevent the accumulation of surpluses such as have been the aftermath of past conflicts. As a result of this directive, a project known as PURA (Pacific Utilization and Redistribution Agency) is now in operation involving all the military services and DSA/GSA. The project became fully operational in July of this year, and as of the end of September some \$22 million worth of excess materiel has been redistributed among the services in the Pacific to satisfy valid requirements. In addition, and to prevent excess supplies from accumulating in Vietnam, we initiated Project STOP and Project SEE. The purpose of Project STOP is to cancel requisitions where materiel is no longer needed in Vietnam. As of the end of September we have cancelled requisitions amounting to \$108 million. The purpose of Project SEE is to physically identify and remove bulky items no longer required in Vietnam. The Army 1st Logistical Command has already identified 262 such items, and further shipment of these items has been stopped. Expedited action is now underway to remove these items from Vietnam. We are taking all possible steps to prevent excesses from developing and to move unneeded supplies from Vietnam to places where they can be used.

(b) Within Vietnam itself, significant accomplishments are:

(1) An overall improvement in automatic data processing capability in the 14th Inventory Control Center and extended downward to include all direct support units.

(2) A new depot complex has been constructed in the Long Binh area and is now occupied thereby relieving the congestion in the Saigon area.

(3) Extensive accomplishments in conducting comprehensive inventories under the most difficult of conditions.

(4) Implementation of a standard supply system by the Army in Vietnam and throughout the Pacific area.

(5) Establishment of a closed loop system to expedite and more closely control the return of repairable items.

In summary, logistics support of our forces in Southeast Asia continues at a high level. Significant steps have been taken to eliminate the problems caused by the rapid buildup in Vietnam and to improve supply systems in-country.

(The following attachment was presented to the subcommittee to supplement Mr. Malloy's statement:)

ATTACHMENT

STEPS BEING TAKEN TO TRAIN A CORPS OF EXPERTS IN PROCUREMENT

DEFENSE PROCUREMENT TRAINING PROGRAM

The first major effort to identify and resolve the problems of logistics management was undertaken at a procurement conference held in Williamsburg, Virginia, in 1962. Seventy-five recommendations were made in the area of contract management, procurement policy, procurement training and career development. The defense procurement training program was initiated as a result of

a recommendation that DOD-wide joint training would encourage uniformity of understanding of DOD policies and practices.

The defense procurement training program was designed to provide uniform joint training courses on a DOD-wide basis for the first time. Originally, 14 single service courses were revised for application to all military departments and the Defense Supply Agency. The success of this program, we believe, can be measured both quantitatively and qualitatively. For example, during fiscal year 1968, over 8,500 students completed one or more of the 43 DOD-approved courses. During the last 5 years, over 40,000 attended resident or on-site courses offered by five specialized logistics training centers. Approximately three times this number have attended logistics courses other than procurement. Both the development of course content and the quality of course presentation is monitored closely by the Defense Procurement Career Management Board established for this purpose.

DOD-WIDE CAREER PROGRAM FOR PROCUREMENT PERSONNEL

The success of the joint training program led to the development of the DOD-wide career program for procurement personnel. A program designed to elevate the Defense procurement function to a level approximating parity with its Industry counterpart.

The objectives of this program are to (i) provide for central inventory and referral of all individuals eligible for promotion at the GS-14 level and above, (ii) conduct a career appraisal on every individual (GS-5 and above) once a year to determine his potential for promotion, and (iii) a "Master Development Plan" which identifies the formal training required to qualify for more responsible assignments (see attached).

TRAINING CONSTRAINTS RESULTING FROM RESOURCE LIMITATION

The increased emphasis placed upon procurement training has revealed that our present in-house resident capability to satisfy all training requested is inadequate. Total requirements for resident logistics training in fiscal year 1969 exceeded quotas assigned by a ratio of almost two to one. (57,000 required—30,000 assigned.) The DOD, therefore, is expanding its training potential through the following channels.

EXPANSION OF FACILITIES

1. *Army Logistics Management Center.*—Congress has authorized the construction of a new administration—classroom complex. This will provide for 20 new classrooms and expand the student capacity by 740 student spaces (5,350 total for fiscal year 1970).

2. *School of Systems and Logistics.*—Three additional classrooms will be available in fiscal year 1970 as a result of their facilities rehabilitation project currently in progress. This 16-classroom capacity—coupled with added faculty—will provide for almost 1,500 more programmed student spaces (5,375 programmed for fiscal year 1970).

3. *Lowry Air Force Base.*—Additional training capacity was developed at this base which provides for an additional 380 spaces.

4. While neither the Army Management Engineering Training Agency nor the Navy has any facilities expansion approved, either can expand their on-site (traveling teacher teams) where necessary through increased staff. (AMETA had 5,767—Navy 7,790 quotas assigned during fiscal year 1969.)

CIVILIAN COLLEGE ASSISTANCE

Civilian participation in non-Governmental educational facilities for over 120 days is permitted under the provisions of Public Law 85-507. This law provides for the expenditure of funds to cover the costs of tuition, per diem, travel and related expenses associated with training Federal employees. Even within the constraints of funds and manpower spaces there has been a steady growth of DOD personnel in this program from 202 individuals in fiscal year 1964 to 695 individuals in fiscal year 1968. While the bulk of training has been in the scientific and research categories (175 in fiscal year 1964—501 in fiscal year 1968), the rate of growth in logistics and logistics-related categories has been even greater (27 in fiscal year 1964—194 in fiscal year 1968.) The increased emphasis on professional logistics education is expected to continue this trend.

ON-THE-JOB EDUCATION (OJE) AND EXTENSION COURSES

All resident schools have been encouraged to develop OJE and correspondence courses as equivalent to their approved courses. The results:

1. The Army Logistics Management Agency has developed and the Defense Procurement Career Management Board has approved as equivalent both the OJE and a correspondence course in Procurement Management (ALMC basic course). This should greatly relieve any abnormal demand on the resident course conducted at Fort Lee, Virginia. ALMC has seven correspondence courses in the logistics area and are developing an extension course to parallel the Advance Procurement Management Course.

2. The School of Systems and Logistics has completed textbooks in Logistics Management and Government Contract Law which will be used by the Extension Course Institute of Air University for correspondence courses. They have six additional textbooks in various stages of review, editing and publication. All will be available by the beginning of FY 1970. The Navy has a correspondence course in Contract Law.

3. On September 18, 1968, the Air Force commenced the first pilot offering of a Seminar Program in Value Engineering. If successful and expanded, this would be a very economical way to satisfy any excessive educational demands. The Seminar approach is similar to the teaching methods used at the Air War College.

EXPANSION OF POSTGRADUATE STUDY IN LOGISTICS

At the present time, the only in-house graduate course specifically identified as "graduate logistics" is conducted by the Air Force Institute of Technology, School of Systems and Logistics. This one-year course is currently offered to approximately 120 students per year—mostly military officers.

The Army Logistics Management Center has a similar program planned which they hope to implement in FY 1970 when their new facilities are available.

The Naval Postgraduate School (Monterey, California) has an excellent "management" program in business administration and economics. Again, the students are primarily military officers.

PRIVATE COLLEGES AND UNIVERSITIES

This year both George Washington University and Florida Institute of Technology have initiated master's degree programs in procurement and contracting. The entire first class at George Washington University is comprised of DOD students.

Ohio State University (which established the AFIT-SL Graduate Logistics Course at Wright-Patterson Air Force Base) will offer a graduate course in procurement and contracting through their College of Administrative Science, hopefully, next year. In addition, the University of Arizona, University of Southern California, University of St. Louis and Notre Dame are all developing programs in the contract area. These schools have conducted preliminary discussions on a consortium agreement for transfer of credit which would be particularly advantageous to the highly mobile Defense employee we wish to develop.

QUICK RESPONSE ORIENTATION

The DOD also conducts in-house specialized instructions in areas where a major change in policy or indicated lack of policy understandings warrants such a program, e.g., the implementation of Weighted Guidelines. Other areas where special ad hoc groups were used to provide orientation are Incentive Contracting, Contractor's Weighted Average Share in Cost Risks (CWAS) and implementation of Public Law 87-653. Approximately 4,000 key procurement, contract administration and audit personnel receive orientation by DOD through traveling teams of subject matter specialists under each special offering of this nature.

Chairman PROXMIRE. I must say you are an excellent, responsive, intelligent witness. You have done a fine job, and I very much appreciate your testimony.

Now we have Mr. Petty, who is right next to you, who I understand has a statement, and we are looking forward to that very much.

Mr. MALLOY. Thank you, Mr. Chairman.

MASTER DEVELOPMENT PLAN

	Business Analyst GS-1101	Procurement and Production GS-1102	Contract Administration GS-1102	Price Cost Analyst GS-1102	Industrial Property GS-1103	Industrial Specialist GS-1150
GS-13 and Above	59. Planning and Control of Business Management					
	58. Work Improvement Principles and Practices					
	57. Communication Techniques for Managers					
	56. Problems in Supervision					
	55. Advance Seminar for Federal Executives					
	54. Systems and Procedures					
	53. Electronic Computers in Business					
	52. Organization and Management Theory					
	51. Industrial College of the Armed Forces (Resident)					
	50. Emergency Management of the National Economy (Correspondence Course)					
GS-9 thru GS, 12	49. Human Relations Workshops and Seminars or Trends in Personnel Management (Varying)					
	48. Senior Executive Course (50-Hours)					
	47. Personnel Management for Executives (8-Day Conference)					
	46. Effective Speaking					
	45. Effective Staff Communication					
	44. Defense Material Management					
	43. Top Management Seminar					
	42. Defense Management Systems (Budgeting, Programming, Analysis) (4 weeks)					
	41. Technical, Analytical and Systems Courses for Managers (Varying)					
	40. Defense Procurement Executive Refresher Course (1 week)	*	*	*	*	*
GS-5 thru GS-8	39. Managing the Value Engineering Program					
	38. Administrative Analysis and Research (Varying)					
	37. Work Planning and Control (3 weeks)					
	36. Automatic Data Processing Appreciation (1 week)					
	35. Reading Skills Improvement (1 Semester)					
	34. Principles of Industrial Management (1 Semester)					
	33. Fundamentals of Management (Varying)					
	32. Work Simplification (Varying)					
	31. Conference Leadership (Varying)					
	30. Quality Assurance Appreciation (1 week)					
29. System Program Management (12 weeks)	#	#	#	#		
28. Evaluating Contractor's Estimating Systems	#	#	#	#		
27. Legal Analysis for Business Managers (Varying)						
26. Operations Research (1 week)						
25. Statistical Quality Control I (2 weeks)	#	#	#	#	#	
24. Technical, Analytical and Systems Oriented Courses (Varying)						
23. Management Statistics (2 weeks)						
22. Seminar for Middle Managers (2 weeks)						
21. Introduction to Supervision (5-12 hours)						
20. Defense Advanced Procurement Management (3 weeks)	*	*		*	#	
19. PERT/Cost (1 week)	#	#		#	#	
18. Advanced Contract Administration (3 weeks)	#	#	*	#	#	
17. Advanced Systems Buying (4 weeks)	#	#	#	#	#	
16. Art and Technique of Negotiating Contract Modifications (1 week)	#	#	#	#	#	
15. Principles and Application of Value Engineering (2 weeks)					*	
14. Cost Reimbursement Incentive Contracting (2 weeks)	#	#	#	#		
13. Quality Control Management (2 weeks)	#	#	*	#	*	
12. Defense Advanced Incentive Contracting Workshop (2 weeks)	#	#	#	#		
11. Termination Settlement and Negotiation (8 days)	#	#	#	#	#	
10. Cost Analysis and Contract Cost Principles (ASPR Sect. XV; 1 week)					#	
9. Management of Value Engineering in Defense Contracting (2 weeks)	#	#	#	#	#	
8. Contract Law (2 weeks)	*	*	*	*	#	
7. Advanced Production Management (3 weeks)	#	#	#	#	#	
6. Cost and Price Analysis and Negotiation Technique (Part I - 2 weeks; Part II - 1 week)	#	#	#	*	#	
5. Defense Small Purchases (1 week)	#	#	#	#	#	
4. Production Management (7 weeks)	#	#	#	#	#	
3. Industrial Property Administration (3 weeks)	*	*	*	*	*	
2. Contract Administration (4 weeks)	*	*	*	*	*	
1. Defense Procurement Management (5 weeks)	*	*	*	*	*	

LEGEND:

- *Mandatory
- #Mandatory, if required by the mission

NOTE: Courses (or equivalent as determined by established tests or by the Defense Procurement Career Management Board) identified by * or # must be completed within 12 months of the date of promotion to the next level or in the senior level to the next grade.

November 1967

STATEMENT OF WILLIAM B. PETTY, DIRECTOR, DEFENSE CONTRACT
AUDIT AGENCY, DEPARTMENT OF DEFENSE

Mr. PETTY. Mr. Chairman, it is an honor to appear before this committee to discuss the work of the Defense Contract Audit Agency with respect to the post—

Chairman PROXMIRE. I should have said, Mr. Petty, I should identify you. You are the head of the Defense Contract Audit Agency, I understand.

Mr. PETTY. That is correct.

Chairman PROXMIRE. Your first name?

Mr. PETTY. William.

Chairman PROXMIRE. It is a good first name.

Mr. PETTY. I am known from coast to coast as Bill, some people know me favorably and some unfavorably.

Chairman PROXMIRE. You are like me. I am known in Wisconsin as Bill, but that is about as far as it goes.

POSTAWARD AUDIT REVIEWS

Mr. PETTY. It is an honor to appear before this subcommittee to discuss the work of the Defense Contract Audit Agency with respect to postaward audit reviews of procurement contracts under Public Law 87-653, the Truth-in-Negotiations Act.

In order that the subcommittee may best understand what DCAA has done in meeting its responsibilities for implementation of Public Law 87-653, it may be best to outline, in chronological order, the actions which we have taken. After doing that, we can then inform you of the number of contracts which we have subjected to postaward audit and the results.

POSTAWARD AUDITS

In December of 1965, the Department of Defense assigned to DCAA the responsibility for conducting a program of postaward audits designed to assure compliance by defense contractors with the provisions of the public law. This assignment was expressed in a letter from the Department of Defense to the Comptroller General, and responded to a recommendation which the Comptroller General had made. Our actions thereafter were the following:

1. On March 17, 1966, we issued DCAA Regulation 7640.6, "Performance of Defective Pricing Reviews." This directive provided for our auditors a discussion of the subject, interim guidance with respect to selection of contracts for review, and general audit and reporting instructions.

2. During the ensuing year we discussed the subject in meetings of our regional managers, and in regional level meetings attended by our resident auditors, branch managers, and regional supervisory personnel.

3. In the spring of 1967, we conducted a series of seminar meetings in all seven DCAA regions, discussing experiences to date, and providing direct guidance to resident auditors, branch managers, and regional supervisory personnel. We issued, for wide distribution within DCAA, a booklet entitled "Defective Pricing Seminar," which captured the essence of the discussions with our field personnel and

which provided additional specific guidance for them in the defective pricing area.

4. On September 29, 1967, the Deputy Secretary of Defense, Hon. Paul H. Nitze, released to the military departments and the defense agencies a memorandum under the subject "Access to Cost Performance Records on non-Competitive Firm Fixed Price Contracts." Pursuant to the guidance contained therein we issued to DCAA auditors, under date of October 12, 1967, a document transmitting the Secretary's memorandum and a "Fact Sheet," developed in the Office of the Assistant Secretary of Defense (Comptroller) and titled "Performance of Defective Pricing Reviews under Public Law 87-653." This release provided additional instructions to our people with respect to the use of cost performance records in conducting the defective pricing reviews, and with respect to "what is" and "what is not" defective pricing.

5. Under date of February 20, 1968, we released to the field a memorandum entitled "Defective Pricing Reviews," in which we dealt with the following subjects:

- (a) Purpose of defective pricing reviews.
- (b) Level of effort.
- (c) Priority status.
- (d) What the selection plan must accomplish.
- (e) The individual contractor as the entity to be examined; differences as between categories of contractors.
- (f) Universe for selection of contracts.
- (g) Mechanics of contract selection.
- (h) Timing of reviews.
- (i) The use of performance records.
- (j) Limitation on the review.
- (k) Reviews requested by contracting officers.

In this memorandum we gave the DCAA auditors revised instructions concerning the selection of contracts for defective pricing reviews and the portion of their total available direct auditor time which they should apply to defective pricing work.

6. In the spring of 1968 we conducted another series of seminars in the audit regions. These were attended by resident auditors, branch managers, regional supervisory auditors, and some of the auditors from the resident and branch offices who are directly engaged in defective pricing reviews. After these seminars we issued two guidance documents. The first is identified as "Defective Pricing Seminar, Updated—April 1968," and the second is identified as Supplement 1 thereto.

7. On September 27, 1968, we released to the field a memorandum under the subject "Priorities—Effective Fiscal Year 1969." This was in recognition of the cut in personnel which DCAA is required to accept under the provisions of the Revenue and Expenditures Control Act of 1968. In this memorandum defective pricing reviews were established as second priority work, being outranked only by the evaluation of forward pricing proposals. It should be understood that this priority is effective only to the level of effort established for defective pricing.

DEFECTIVE PRICING AUDITS

The fiscal year ended June 30, 1968, is the first one which should be considered to be representative of accomplishments in defective pricing audits. During that year we examined, for this purpose, 582 contracts and subcontracts, which had a total contract value of approximately \$3.8 billion. Of this number we found 104 contracts where there were indications of inaccurate, incomplete, or noncurrent pricing data. We recommended contract adjustments of \$18.6 million. As of June 30, 1968, we had under review 452 additional contracts, valued at approximately \$7.2 billion.

Since DCAA was organized in July 1965 we have reviewed 953 contracts for this purpose with a total value of about \$9 billion, and have identified 146 in which the cost or pricing data appears to have been defective, recommending about \$32 million in contract adjustments.

It should be recognized that many of the contracts which we have reviewed as of this point in time were awarded in 1965 and 1966. Since then the Department of Defense has made a very strenuous effort to cause contractors to improve the quality of cost and pricing data which they submit. It is entirely possible, if these efforts are productive, that we will in the future identify fewer instances of defective data in relation to the total number of contracts examined.

There should also be an improvement in the quality of cost and pricing data as a result of the Department of Defense program for survey and evaluation of contractor estimating methods and procedures. This program is also the responsibility of the Defense Contract Audit Agency and has been in progress since the fall of 1965. As of June 30, 1968, we had identified 234 contractors (or contractor locations) to be subjected to an estimating system evaluation. On the same date we had completed and reported on 186 of these, with an additional 44 in progress. This program has, we believe, been quite productive in influencing the major contractors to be more painstaking in preparing their price proposals, and to prepare them in an environment where better internal and managerial control is brought to bear.

We find defective data in all major areas of cost. It is not confined to the material costs but runs the range of material, overhead, labor rates, failure to use past experience, make versus buy, duplicate charges, and subcontracting.

DEFECTIVE DATA IN ALL MAJOR AREAS OF COST

Chairman PROXMIRE. You say you find, and I quote, "defective data in all major areas of cost," and you say it runs throughout the range. Can you explain this?

Mr. PETTY. No; I can't explain it. I can't explain why it is in all major areas of cost, except to say that I would assume that the risk in preparing pricing data is equal with respect to the various cost elements. You can have errors or omissions in material, labor, overhead, or purchased parts.

Chairman PROXMIRE. When you are talking about defective data in all major areas of costs, are you indicating that it is substantial or are you simply indicating that occasionally you run across some mistakes?

Mr. PETTY. I am indicating simply that we do find it under all of the major elements of cost.

RECOVERY OF COSTS

Chairman PROXMIRE. It seems to me that the recovery involved here, this is not at all critical, the recovery of \$18 million of over \$3 billion of contract and \$32 million out of \$9 billion is a very, very small percentage. It is not insignificant. It is good to have, but does this indicate that by and large there is very good compliance or does it indicate that you are understaffed and can't really do the kind of job you would like to do and if you could you would be able to develop a lot more?

Mr. PETTY. No; I think it indicates that when you do select a contract for this purpose out of the universe of contracts which are subject to—

Chairman PROXMIRE. I see; good.

Mr. PETTY. You select them on a scientific basis, or a combination of scientific and judgmental thinking.

SELECTION OF CONTRACTS FOR AUDIT

Chairman PROXMIRE. That brings me to the point, what size contracts did you audit? You say you selected some, you didn't audit the \$3.2 billion or \$9 billion in the second.

Mr. PETTY. Wait a minute, we did review the entire \$3.2 billion.

Chairman PROXMIRE. Yes, but you didn't audit them in detail. You selected out of those the ones that you thought would be most—

Mr. PETTY. Those are the ones we actually examined. We selected these contracts out of the entire universe of contracts which we might have examined. It is obvious we can't examine every Defense contract for this purpose. So—

Chairman PROXMIRE. I see.

Mr. PETTY. So we select a certain number of contracts, and we attempt to, and we do, select contracts of all sizes, big and little, down to the \$100,000 floor—we select different kinds of contracts, fixed price incentive, firm fixed prices, and so on, and what we have tried to do is to develop a selection method which will be calculated, in our opinion, to assure that we do examine for this purpose a representative amount of procurement dollars which are placed on contracts which are subject to this act, and that, second, we do examine enough contracts to have a fair statistical sample out of the universe, and, third, that we do give our attention to individual contractors.

RATIO OF RECOVERY TO COSTS OF OPERATION

Chairman PROXMIRE. How does your recovery compare to the cost of operating your office? You recovered \$18 million in this case. What are the salaries, total salaries and cost in your judgment, roughly, of your office?

Mr. PETTY. Bearing in mind, Mr. Chairman, that this is a very, very small part of the total work that we do, we have set out to devote—

Chairman PROXMIRE. That is right, you would have to allocate only part of it.

Mr. PETTY. We have set out to devote not more than 5 percent of our direct total audit time to this particular endeavor.

Chairman PROXMIRE. All right, take 5 percent of the cost of your entire operation to the extent that you can.

Mr. PETTY. Take 5 percent of \$44 million.

Chairman PROXMIRE. I am not talking about—your office costs about \$44 million to operate?

Mr. PETTY. Direct obligational authority is \$44 million.

Chairman PROXMIRE. So it would be \$2 million and you recover \$18 million—9 to 1.

Wouldn't it be wise to increase this? It's a pretty good return for the taxpayer.

Mr. PETTY. This could be said. But we have got a lot of other work to do. We do consider that the most productive work we do is in the area of evaluation of price proposals before the contract is ever awarded. Mr. Malloy had reference to this. I think that is where we perform the best service. We must audit the incurred costs under all kinds of contracts which do require cost auditing. So it is a choice that somebody can take.

PRICE REVIEWS SECOND PRIORITY WORK

Chairman PROXMIRE. What do you mean when you send out a memorandum in which you said defective pricing reviews were established as second priority work?

Mr. PETTY. I mean that—

Chairman PROXMIRE. Not first priority, obviously.

Mr. PETTY. First priority work in our agency is evaluation of pricing proposals before the contracts are awarded.

Chairman PROXMIRE. I see.

Mr. PETTY. We have consistently maintained that this is work which won't wait. It must be done without delay. So we give it first priority. We have now, as I have indicated in this statement, established defective pricing as a second priority up to the level of effort that we propose to put into it.

Chairman PROXMIRE. All right, sir. Thank you.

Mr. PETTY. We cannot assess the true savings to the Government as the result of this work at this point in time. After we release an audit report in which contract adjustments are recommended, the cognizant contracting officer must then enter into discussions with the contractor. These discussions and a final decision about what should be done are often time consuming. The result is that we have not had reported to us the final outcome of all reports which we have issued. Reports which we have received show that where settlements have been reached, out of \$6.8 million which we have proposed, contracting officers have made contract adjustments of \$4.7 million, with net final savings of \$2.7 million.

TRAINING

The Chairman's letter of October 18, 1968 to the Secretary of Defense indicated the committee's intent to review steps being taken to train a corps of experts in various phases of procurement and contract administration, and also in contract audit. Accordingly, I will discuss

the training and development program of the Defense Contract Audit Agency.

On July 28, 1967, in testifying before the Subcommittee on Military Operations of the House Committee on Government Operations, I made the following general statement with respect to training:

It is the responsibility of an agency such as DCAA to provide for its members adequate training in the highly specialized field of contract audit. Training courses which provide the kind of training needed are not available either in the colleges and universities or elsewhere in the Government. In order to qualify the audit force for the work which it must do, DCAA has established a training facility known as the Defense Contract Audit Institute. It is located on Government property held by the Defense Supply Agency Defense Depot, Memphis, Tennessee.

The Institute provides short, intensive courses in various aspects of contract auditing to DCAA trainees and to its operating and supervising auditors. Attendance is mandatory for all auditor trainees and for newly hired experienced accountants who are not experienced in contract auditing. The training courses range from an introductory course in contract costing and contract administration to highly specialized courses in statistical sampling, improvement curve methodology, auditing in an automatic data processing environment and supervision of audit operations. The Institute provides training which is tailored specifically to contract audit work and its benefits are being realized in the increased technical capability of the DCAA audit force. Auditors from other Federal agencies with contract audit responsibilities attend Institute courses on a space available basis.

The statement which I have just quoted remains valid with respect to the Contract Audit Institute. We now give the following courses there:

Course title	Length (days)	GS-grade level	Class size	Participants (fiscal year)		
				1967	1968	1969 estimate
Auditor intern.....	10	5-7	30-60	507	231	118
Intermediate auditor, technical refresher.....	5	9-11	30	62	215	187
Intermediate auditor, indoctrination of recent hires.....	10	9-12	30	167	200	92
Graphic and computational analysis.....	5	9-14	30	56	174	222
Improvement curve analysis techniques.....	5	9-14	30	184	147	192
Audit in EDP environment.....	10	9-14	30	29	221	208
Statistical sampling.....	5	9-14	30	172	83	173
Supervision and technical management of audits.....	5	12-14	30	84	149
Total.....				1,177	1,355	1,341

The Institute staff consists of 11 people—six instructors and five administrative. The instruction staff is augmented by auditors from the headquarters, regional, and field audit offices from time to time as needed.

In addition, we use a number of other training methods:

- (1) On-the-job training is continuous.
- (2) Six home-study courses are made available to our people. They are in—
 - (a) Statistical sampling (“developed in-house”).
 - (b) Basic automatic data processing (IBM).
 - (c) Presupervisory subjects (Army).
 - (d) Problem solving (Army).
 - (e) Fundamentals of management (Army).
 - (f) Effective writing (Army).
- (3) The regions conduct certain training courses, such as:
 - (a) Basic orientation of new hires.

- (b) Audit report writing clinic.
- (c) Special-purpose clinics on technical subjects.
- (4) Evening courses in pertinent subjects offered by colleges and universities, where the agency shares in the cost.
- (5) CPA coaching courses, offered by specialists in such courses, conducted evenings and Saturdays, with the agency sharing in the cost.
- (6) Courses conducted by other DOD elements or other Federal agencies and universities, and attended by DCAA personnel in temporary-duty status. Examples are:
 - (a) Interagency courses on supervision and management.
 - (b) Defense procurement executive refresher course.
 - (c) The art and technique of negotiating contract modifications.
 - (d) Defense advanced incentive contracting workshop.
 - (e) Top management seminar.
 - (f) Management of organizations.
 - (g) Personnel management for executives.
 - (h) Management development.
 - (i) Program for management development.

The entire training and development program is expressed in, and guided by, certain portions of the DCAA Personnel Management Manual, specifically Chapter 15: Career Management; Chapter 21: Training and Development, General Provisions; Chapter 22: Technical Training; and Chapter 24: Master Training and Development Plan for Auditors. The latter provides for career management boards at the regional level, whose responsibility it is to ascertain the training needs of individual auditors as they become apparent, and to arrange for appropriate study and training for individuals as they advance and assume greater responsibilities within the agency.

The basic educational level of DCAA auditors is quite satisfactory. Of a total present force of about 3,800, 3,100 are classed as professional auditors. Of these, about 2,500 have at least a baccalaureate degree. About 400 are certified public accountants.

This concludes my prepared statement. I will be glad to respond to your questions.

Chairman PROXMIRE. Thank you, Mr. Petty.

UNIFORM ACCOUNTING STANDARDS

Mr. B. B. Lynn, Deputy Director of the Defense Contract Audit Agency, has been assigned to the GAO study group on "Uniform Standards of Cost Accounting for Defense Contracts." This is a matter in which I have a considerable interest because the Senate Banking Committee, of which I have been a ranking member, has been holding hearings on this and has passed legislation to implement it. I have here a speech Mr. Lynn gave on September 11, 1968, to northern Virginia FGAA chapter. In his speech, your Deputy seems to be saying that he already has made up his mind on the feasibility question, and that all that could be hoped for is to collect some information in the course of his study. I will quote from his speech in which he says:

Looking ahead to the completion of our task and aftermath, it seems to me that our major contribution will lie in the information and data which we shall have been successful in accumulating, analyzing and reporting, and our related efforts to motivate and assist in the development and improvement of cost accounting principles as a useful communication medium among all interested elements in

our society. To state it in another way, if the results of our study are considered productive and perhaps even generally accepted, I would think that it would be more because we succeeded in advancing the state of the art than because of any specific conclusion we reached as to whether or not uniform cost accounting standards are feasible.

Now, these uniform cost accounting standards are a matter, I think, of the greatest importance. Until we have that it's going to be very, very hard for us, really, to determine costs. Admiral Rickover indicated this would be the most, in his view, one of the most useful and constructive things Congress can do, and could save a great deal of money, and we see that Mr. Lynn, your Deputy, seems to have his mind made up that it is not going to amount to much, it is not going to amount to anything that will result in any constructive action.

Will you comment on these remarks by Mr. Lynn?

Mr. PETTY. I am sure that he doesn't have his mind made up to anything of the sort that you have just mentioned here. Mr. Lynn that evening was speaking to a professional audience. Mostly they are Government accountants. They are very much interested in what is to be done by the group headed by the GAO in its efforts to determine whether or not uniform cost accounting standards are feasible, and bear in mind, as you will, that that is the charge that the GAO has in this particular legislation.

Chairman PROXMIRE. He said even if they find that they are, that the uniform accounting standards are, considered productive and perhaps even generally accepted, he said:

I would think it would be because we succeeded in advancing the state of the art than because of any specific conclusion we reached as to whether or not uniform accounting standards are feasible.

It seems to me that it is hard to come to any conclusion except that no matter what Lynn finds out of this it is unlikely he is going to conclude that uniform accounting standards are feasible for the purpose of requiring them in defense contracts.

Mr. PETTY. Mr. Chairman, I can assure you Mr. Lynn does not have the point of view you expressed. He and the others involved in this, to my best knowledge, are giving this a wholehearted try. Did Mr. Staats mention this subject at all? I believe he did, in his statement yesterday.

Chairman PROXMIRE. He did briefly.

Mr. PETTY. And I think he told you that they are developing a questionnaire which they propose to send to interested parties to gather information about the opinions of those parties who were mentioned in the legislation about the feasibility of uniform cost accounting standards. What the result will be I couldn't guess at this point in time, and I know Mr. Lynn can't, but I do assure you that as far as he is concerned you have misinterpreted his feelings.

Chairman PROXMIRE. I hope so.

I would like to ask Mr. Malloy whether this attitude characterizes DOD's participation in the project, the notion that all you can do is advance the state of the art, it wouldn't have any advantages so far as feasibility is concerned even if they could find—

Mr. MALLOY. Not at all, Mr. Chairman. Insofar as I have observed it, I think we all are trying, as the Congress would want us to, to have an open mind on the feasibility of this, to test it, and to get the information that will be required to test it.

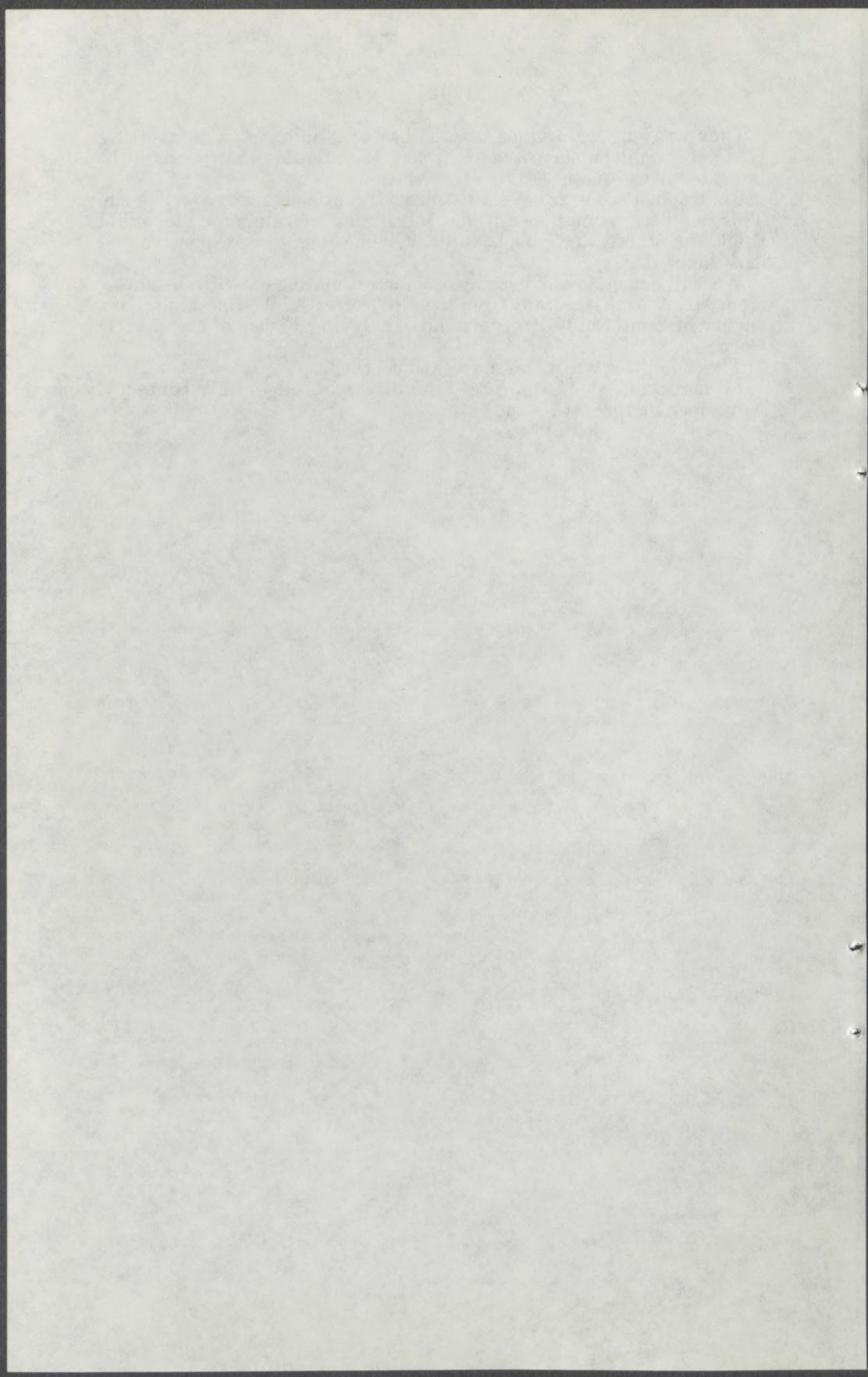
I must say in Mr. Lynn's case, he has been quite active in assisting GAO. I would be surprised if he had the attitude that seems to be indicated in the quote.

Chairman PROXMIRE. Well, thank you, gentlemen, very, very much. This has been a most useful and interesting morning for me, and I think for others, and you have done a fine job, very responsive and most helpful.

We will conclude our hearings tomorrow at 10 a.m. with testimony from Mr. A. E. Fitzgerald from the Air Force; A. W. Buesking, University of Southern California; and Mr. Irving Fisher of the RAND Corp.

The committee will stand in recess until then.

(Whereupon, at 1 p.m., the committee recessed until Wednesday, November 13, 1968, at 10 a.m.)



ECONOMICS OF MILITARY PROCUREMENT

WEDNESDAY, NOVEMBER 13, 1968

CONGRESS OF THE UNITED STATES,
SUBCOMMITTEE ON ECONOMY IN GOVERNMENT
OF THE JOINT ECONOMIC COMMITTEE,
Washington, D.C.

The subcommittee met, pursuant to recess, at 10:05 a.m., in room 1202, New Senate Office Building, Hon. William Proxmire (chairman of the subcommittee) presiding.

Present: Senator Proxmire.

Also present: John R. Stark, executive director; and Richard Kaufman, economist.

Chairman PROXMIRE. The Subcommittee on Economy in Government of the Joint Economic Committee will come to order.

Today is the third day of the subcommittee's current round of hearings on military procurement.

The past 2 days we have heard extremely interesting testimony relating to both high defense profits and excessive costs in military hardware and weapons acquisition.

Today we will hear from three witnesses, A. E. Fitzgerald, Deputy for Management Systems, Office of the Assistant Secretary of the Air Force; A. W. Buesking, University of Southern California; and Irving N. Fisher, RAND Corp., all of whom have had extensive training and experience with military procurement, and who are experts in defense analysis.

If you gentlemen would all come forward you can sit together here; Mr. Fisher, Mr. Buesking, Mr. Fitzgerald.

Gentlemen, inasmuch as we have had a chance to look at your statements, perhaps you might each be willing to summarize your statement, and after this we will have questions for each of you. It might be helpful to have a panel type approach here, some interplay between the panel, and we can, I think, accomplish this more expeditiously if we handle it in the way I have suggested.

Mr. Fitzgerald, would you like to lead off?

TESTIMONY OF A. E. FITZGERALD, DEPUTY FOR MANAGEMENT SYSTEMS, OFFICE OF THE ASSISTANT SECRETARY OF THE AIR FORCE

Mr. FITZGERALD. Yes, Mr. Chairman.

I do not have a prepared statement. I will have to speak extemporaneously this morning.

You asked that I discuss management systems procedures and policies and their impact on contract pricing and costs of the things we buy.

COST CONTROL SYSTEMS ON MAJOR PROGRAMS

In order to narrow the subject somewhat I would like to talk about one body of management systems; namely, cost control systems on major weapons systems programs. By major in the Air Force I mean the F-111, C-5A, Minuteman, and the like, the very large weapons systems programs.

The first step in the preparation or development of effective management systems, in my judgment, is the establishment of clearly understood management objectives, that is the establishment of goals which we are seeking to achieve through these management systems.

Next we require a rational plan, an order of management systems, in proper relationship to one another, so that we provide for complete closed loop control system.

The part of this sort of plan I will enumerate very briefly, and then discuss them separately in moderate detail. The first component of an effective control system are the standard of performance, in this case standards of cost performance.

Next we must provide for reporting of actual performance to be compared with the standards.

Third, we must provide for analyses of the results that have been reported to the managers, Government and industry.

Fourth, we must provide for corrective action.

I would like to discuss these subtopics in some detail, and I will start with the standards of performance.

STANDARDS OF COST PERFORMANCE

We recognize essentially three kinds of standards of cost performance in management systems development in the Air Force. The first type of standard is what has come to be known as the "should cost," or the amount which weapons systems or products ought to cost given attainable efficiency and economy of operation.

The second type of performance standard we have come to call the "probable cost," that is, the cost estimate that is used by our financial managers to provide adequate funding for the program. I think it apparent that these two cost figures, "should cost" and "probable cost," may be somewhat different.

The third category of cost standard that we recognize is the negotiated cost. Since negotiations are not a unilateral process, these frequently turn out to be different than the "should cost" or the "probable cost."

REPORTING ACTUAL PERFORMANCE

Then, as I mentioned before, we must provide in this rational body of systems a means of reporting actual performance to compare with the cost standards. Following that we must provide for analysis of these reported results so that we can select the proper type of corrective action. Usually this means providing people, and we have only recently begun to organize formally our analytical group in the Air Force and in OSD for this purpose within the financial management function.

These processes have been performed in the system program management offices, in addition to the financial management and analytical groups.

CORRECTIVE ACTION

Now, the fourth category in the orderly assembly of management systems components is the corrective action portion. If we do not take corrective actions or have them taken by someone else, the whole process becomes a sterile exercise that simply adds costs and produces nothing.

The preferred method of corrective action, of course, is to have the contractor correct variances from his plan on his own, and this we seek to achieve by contractual incentives. Where these work, I think that most of us agree that this is the best approach of all. Where these approaches do not work, particularly in the large weapons systems—remember that I am speaking of such systems as the F-111, the C-5A, the Minuteman, and other multibillion-dollar programs—the Government still has the responsibility, which we in my office and my superiors recognize, to seek to control these costs. If the contractual incentives do not result in the proper corrective action, then we may follow a variety of other approaches.

The first of these I would call catalytic action. These are actions in which the Government provides the stimulus for the contractor to take the corrective action himself. In the approach, we avoid telling the contractor what to do. Instead, we analyze the specific causes of the discrepancy, and point these out in forceful terms to the contractor management, and try to get his cooperation in correcting the unfavorable variances.

A step more severe is the category of actions which I would call unilateral Government actions. There are instances on record of disallowances of excessive costs, particularly where excessive costs are under the control and at the discretion of the contractors. I am sure this process will continue to be used on occasion.

The other approach is that of direct action in which you direct the contractor to correct some shortcoming in his system. This makes the Government the primary instrument in the process, and we like to avoid this course of action.

The final corrective action available to us is termination.

So we have here the spectrum of typical corrective actions available to us ranging from the stimulus of contractual incentives to termination.

The effectiveness of our systems, we think, is measured by the effectiveness of corrective actions which are taken.

EFFICIENCY OF MANAGEMENT SYSTEMS

Now, having discussed the process of developing management systems, I would like to talk a little bit about the problem of the efficiency of developing management systems and controlling proliferation of management systems.

We certainly want to make sure in developing these control systems that we provide all the necessary parts, the performance standards, the reporting, the corrective action, the analysis, all in proper relation to one another. On the other hand, we want to make sure that

we do not include noncontributing activities in the systems in the process. With this in mind, we have started a very large scale effort to inventory and purge our existing management systems. We find that most of them fall in the category of reporting. We have very little formalization in the areas of analysis and of corrective actions.

We plan also to require stringent justifications in the process of approving new management systems. In the future we expect that every new management system that is developed, particularly those which affect contractors, will be required to show a pay-off, that is, the savings to be derived should exceed the cost of the application.

That concludes my summary statement, Mr. Chairman.

Chairman PROXMIRE. Thank you very much, Mr. Fitzgerald.

Our next witness is Mr. Buesking, University of Southern California.

Mr. Buesking?

STATEMENT OF A. W. BUESKING, COLONEL, U.S. AIR FORCE (RETIRED), LECTURER, PUBLIC ADMINISTRATION, UNIVERSITY OF SOUTHERN CALIFORNIA

Mr. BUESKING. Yes, sir; I will summarize my statement.

I begin these comments with the general endorsements of the goals of your subcommittee.

SHIFT OF PROCUREMENT POLICY

I would like to present some of the background leading up to the point where we are. During the past 15 or 20 years there has been a very marked shift in the way the Department of Defense has attempted to do business. I think some of the problems which occur are the result of the inability of both contractors and DOD to recognize this shift in responsibility.

In the past, the majority of our programs through the 1950's were incrementally funded. We generally attempted to deal with a year at a time without addressing finite pieces of programs. With the advent of the planning programming and budgeting systems introduced by Mr. Hitch in 1961, we began to have a more rational basis to make decisions about our weapons systems.

However, as Mr. Fitzgerald mentioned, I am not sure our response in terms of management systems that controlled the work of ourselves and our contractors reflected a similar response. Consequently, we had a considerable proliferation, if you will, of management systems and controls in our contracts which have worked at some variance with the contract form that was evolving.

In this past position in time, there are a number of basic assumptions that are inherent in that way of doing business. The first of these was that the Government assumed a majority of the risk. Detailed controls by Government were very necessary. It was involved on almost a day-to-day basis in internal management of contractors. At the same time, I suspect that technical and schedule considerations were considerably more important than costs. The basic need was to acquire sufficient funds to finance requirements.

As programs became "fully funded" the need to have more precise control and added visibility became apparent. One could not justify fund requirements to the Bureau of the Budget, and subsequently to the Congress, based strictly on expenditure rates. It was necessary to more closely justify funds with the requirement of the work being performed.

The result of this change in environment was to sharply alter the buyer-seller relationship. Various contracting forms were developed, including total package procurement for some cases. This shift in environment and shift in contracting form really altered the management tasks that were required for both Government and industry.

Again some assumptions are inherent and I shall address these specifically.

First, DOD could shift the risk to contractors by different forms of contracting.

Second, contract incentives would be sufficient to motivate contractors to reduce costs and become more efficient.

Third, the contract should be the sole method of control and would assure performance.

And fourth, disengagement would result and thereby the DOD would no longer be involved in the direct internal management of these programs.

Now, we need to examine how successful DOD has been in carrying out these assumptions.

PERFORMANCE MEASUREMENT

As these developments occurred, there were a number of attempts to adjust to the shift in environment, and I would like to note at least two of these very briefly. First, one effort which started in 1963 ultimately became a policy of the Department of Defense, in DOD instruction, 7000.2, "Performance Measurement of Selected Acquisitions." The basic idea behind that policy is to express criteria about management systems and get away from the detailed procedures and control documents that were being used in contracts. This policy was published in December 1967 and is now being applied to some of the major programs.

The second major effort involved the development of a system to control additional or new management systems which are still attempting to place detailed controls in contracts. This effort has extended over about 2 years and while there is a very good control of the future, I would have to say to date I know of no single document which was altered or canceled as a result of the 2-year effort.

DEFICIENCIES IN INTERNAL CONTROLS

Going back to performance measurement of selected acquisitions and the period this was being developed, a number of major evaluations took place using these criteria in various forms. While the results varied, I would have to say there were some consistent deficiencies in internal controls in most of the major contracts examined.

For example, we found case after case of inconsistent accounting and costing procedures, particularly for materials and subcontract expenditures.

We found considerable lack of industrial engineering labor and materials standards.

We found excessive reliance on manpower controls, which reflected a former way of doing business, rather than discrete, finite work assignments.

And finally, we found a basic lack of organizational visibility in the performing divisions of the contractors.

The purpose of mentioning these two particular efforts is to highlight the difficulty of attempting to bring about change and improvement.

RESISTANCE TO EFFORTS AT IMPROVEMENT

Efforts at improvement that in any way seemed to affect contractor profits, resulting in a threat to the status quo, resulted in considerable resistance both internally in DOD as well as in industry. This resistance takes various forms. It appears in trade associations, it appears in advisory committees, and it appears in the administrative process of coordination internally. I think those responsible for such resistance have missed the point. The focus on profit, while appropriate, is only a small portion of the problem. The profit argument stimulates emotional reaction of people; but I think we ought to concentrate on the total costs to the Department of Defense which includes costs and profits.

QUESTIONS CONCERNING COSTS

In looking at the subject generally, I would have to conclude that the management of cost is seriously questionable. There are three basic points concerning costs and I think there is some evidence on each of these points. First, are contractor costs excessive? Second, if contractor costs are excessive and if there has been poor performance in terms of deliverable hardware is this reflected in reduced profits? and third, are defense profits equal to or better than those in commercial work when measured by standards used by financial analysts, in terms of net worth? I believe this last point was discussed yesterday.

EXCESS COSTS

Turning first to the subject of excess costs, I think there is some evidence to support an affirmative answer. A corollary to the excess cost point is the effect the current contract approach has on reducing costs. In fact there are some studies that say it may actually be stimulating costs. I would like to refer to two studies. One is the RAND Research Corp. Report called "Cost Incentives and Contract Outcomes: An Empirical Analysis." Basically this study concludes, and I quote:

"The main point demonstrated here is that incentive contracts probably are not saving the Government much money through increased efficiency and better cost control." Additionally, the study concluded, "That cost underruns commonly observed for incentive contracts are the result of a general upward shift in target costs rather than improved managerial efficiency and cost control."

Chairman PROXMIRE. You are giving us the conclusion at this point of our next witness. At least he wrote that study, I understand.

Mr. BUESKING. Yes, sir; I understand. I don't mean to steal his thunder.

Chairman PROXMIRE. It is good to see this agreement.

Mr. BUESKING. I would like to emphasize that the RAND study was empirical and collected actual data to determine contract outcomes as a result of these assumptions about incentive contracting.

On the other hand, Logistics Managements Institute has completed a theoretical, mathematical analysis and this study concludes:

"That cost incentive provisions of a single contract executed by a firm having many other contracts may not provide the motivation anticipated and may in fact offer the contractor a larger total operating profit with an overrun of costs." I think these two are available to the committee.

There are other factors which also lead to the high initial costs and I would like to discuss these factors.

ESTIMATES BASED ON HISTORICAL COSTS

Both the systems analysts, who develop estimates for new weapons systems, and the price analysts, who evaluate contract proposals, are overly dependent upon historical costs. Typically, their estimates are based upon historical cost for the particular contractor, on actual experience to date in a specific program or on historical costs of comparable systems.

Now, unfortunately they tacitly accepted the historical level efficiency, or inefficiency if that may be the case, without challenging whether current and past methods of operation had included excess costs and inefficiencies which might reasonably be expected to be eliminated.

"SHOULD COST" APPROACH

An alternative to developing independent Government estimates, as Mr. Fitzgerald mentioned, would be the "should cost" approach. Now, this is particularly of paramount importance where there is little or no competition in the selection of a contractor. "Probable costs," as it is used in this situation, means cost based upon use of cost estimating relationships, extrapolation of actual costs incurred in follow-on programs, and establishments of learning curves or cost-quantity relationships, in lengthy production runs.

The essential difference between the "should cost" and "probable cost" method of estimation is that the latter implicitly accepts the contractor's current way of doing business whereas the former is based on what I would consider to be a more objective assessment of cost levels.

Unfortunately, this particular approach has been used successfully only one time to my knowledge. A major engine contract recently negotiated by the Navy made most effective use of the should cost approach. An in-depth study and evaluation was conducted at each cost element of the contractor's operation to ascertain what these engines should cost the Government, assuming reasonable efficiency and economy on the part of the contractor. It is important to note this departure from the traditional procurement approach. It is normal to assume that the Government must pay a sole-source producer his incurred and allocable costs and if they are excessive, seek another source. Basically an equal alternative, if it is not appropriate to seek another source, is to achieve reasonable efficiency in our plants.

A recent article in the *Journal of Industrial Engineering*, August 1966, "Misapplication of the Learning Curve Concept," highlights some of the factors involved which were considered by the Navy in its evaluation of the contractor. The author, concludes "These misapplications are founded on the concept that these factors are always present and their presence is accepted as normal, reasonable, and recurring."

COSTS 30- TO 50-PERCENT EXCESSIVE

Moving on to evaluations of a less formal nature, a number of evaluations of internal resource planning and control systems have been conducted to assess contractor's capability to meet criteria or minimum standards. It was apparent, almost without exception, both to the evaluators contractor top management that they lacked objective cost planning and control systems that are essential to prevent excessive costs. Program management and middle managers tended to not concur. In an area where there is not extensive competition, then you must rely on these sorts of things to assist you. As an order of magnitude judgment, and this is a judgment on my part, these costs are 30 to 50 percent in excess of what they might be under conditions of competition and commercial-type environment.

NO CORRELATION BETWEEN PROFITS AND PERFORMANCE

Moving to the next point, if hardware costs are excessive or if weapons systems performance is poor, is there any correlation between profits earned and performance?

A recent study by an analyst which is unpublished at this moment concludes otherwise.

In the electronics industry, using actual case histories on cost, return on net worth, and hardware performance, the study concludes "performance has little correlation with profit." It concludes also, "the current special partnership which exists between Government and the aerospace industry not only results in a very high incidence of delivered electronics systems with degraded performance, but there is not effective mechanism in existing contractual arrangements to reward or penalize contractor performance."

ADEQUACY OF PROFITS

The third point moves to the adequacy of profits and I can't make any judgment about that. I think the adequacy of profits is basically a social judgment. However, there are some studies again which support the conclusion that profits compare favorably with the balance of American industry. The LMI report which you discussed at some length yesterday concluded "profit rates on defense work are generally lower and have been declining." Unfortunately, as you pointed out to Mr. Clifford, LMI study is based on unverified statements of defense contractors.

In contrast, a RAND Corp. report published in December 1967, "Risk and the Aerospace Rate of Return," reaches different conclusions. It used net worth as the base for rate of return calculations. Just as financial analysts conclude, the RAND study states "the return to stockholders appears the most useful measure of profits." Further,

the study states "Aerospace firms have earned high rates of return on investment," and even when adjusted for risk, aerospace was exceeded only by the drug group.

I did have a quote from the Washington University study which you discussed earlier. I would make one additional observation that at least on one of two of the largest programs in DOD, the return on investment before taxes was about 43 percent, based on a similar analysis. This was quoted in a statement to the Securities and Exchange Commission analysts in March of 1966.

There has been a preference on the part of DOD to measure profitability on sales. I understand recent studies made by both the Armed Services Procurement Committee and LMI to consider return on investments in arriving at profits on contracts. I think this is a very worthwhile step and I hope it can come to fruition.

CONCLUSIONS

I would like to conclude my remarks and make some recommendations. In summary, I believe that the changed nature of programing, budget and decisionmaking requires Government managers and their associated industrial organizations to look at substantially different sets of facts and information to effectively control the programs.

I would conclude that the response of both industry and Government to the changed environment has not been adequate to prevent excessive costs and relate profits to performance or investment.

I would conclude that major efforts at self-improvement have not seemed to provide any significant impact on our management of defense procurement.

I would conclude the assumptions and the results of incentive contracting, as it is practiced today, are suspect enough to warrant major reevaluation of the buyer-seller relationship.

And finally, I would conclude, the planning and control systems in use in the major portion of the industry are inadequate to provide proper cost control and assure some reasonable level of efficiency.

RECOMMENDATIONS

Turning to recommendations, it seems unlikely that either the industry or the Department would bring about any significant change on their own. Consequently, it is recommended that a major congressional examination be undertaken as an initial step. After the sufficient information has been gathered, it might be advisable to consider a commission to advise the Congress and the President as to an appropriate course of action. The exploration of uniform accounting standards as a result of the renewal of the Defense Production Act is an excellent start. Second, it is recommended that the DOD form a top management team to probe the entire area of cost control in major procurements. This team should be independent of the functional and departmental influences and take direction from the Secretary of Defense. I am convinced the problem of cost control is of such magnitude and scope that any lesser actions will not yield any appreciable results.

I thank you.

(Prepared statement of Mr. Buesking follows:)

PREPARED STATEMENT OF COL. ALBERT W. BUESKING, U.S. AIR
FORCE (RETIRED)

PLANNING AND CONTROL OF DEFENSE PROCUREMENT

I begin these comments with an endorsement of the goals of your committee. These hearings represent a timely, and perhaps overdue, examination by the Congress of the economic impact of defense procurement. There is no doubt that national security has first priority and claim on tax dollars. However, other national needs such as the Poverty, Urbanization and Education require more priority than they have been afforded in the past. Perhaps these hearings can provide insight and lead to improvement of defense procurement and contractor performance. To the extent that even small gains in efficiency are attained, they will make available major resources for other federal responsibilities.

Before commenting on the assumptions and effectiveness of incentive contracting, contractor efficiency and the problems of cost estimation and cost controls, some preliminary discussion may be helpful. It is appropriate to provide some background concerning the environment which we are examining.

During the past fifteen years, the defense and aerospace industry has encountered rapid growth and increasing complexity. This change coupled with expanded weapon system decisions has forced a change in the approach that had been followed traditionally in the management of the research, development and production of such systems. In the past, effective control was thought to be achieved by close monitoring and detailed analysis of government and contractor expenditures. Specific funding approvals granted the Department of Defense by Congress were based primarily on predetermined levels of spending rather than specific force levels, fully identified weapons or support systems, or quantities of hardware.

After apportionment of funds to the military departments, the financial management task was primarily one of matching funds against contractor expenditures rather than relating requirements to work content and progress. Even though major programs and contracts ran over extended periods of time, management attention focused primarily on the costs associated with the specific fiscal year involved and the funds required to cover expenditures. In turn, under cost plus contracting and schedule urgency, contractors viewed their performance responsibility as meeting technical and schedule requirements. Their financial management task was primarily to secure contract financing rather than control of costs.

Under the foregoing conditions, several assumptions are inherent in the buyer-seller relationship. They are:

1. The government assumes majority of risk
2. Detailed controls by government are necessary
3. Technical and schedule considerations are more important than cost
4. Sufficient funds will produce contract requirements.

These assumptions altered over time as the result of the change in environment. Initially, the introduction of the planning-programing-budgeting system forced certain changes. Decisions began to be made about discrete elements of weapon systems programs including their estimated costs at completion rather than single fiscal year considerations. However, neither the military departments nor the contractors were prepared to apply methods of financial control other than those which compared actual expenditures against planned expenditures within a specific fiscal year's fund limitation.

In those cases where programs became "fully funded" rather than "incrementally funded" (i.e. all fund requirements were identified and financed in a single year appropriation regardless of length of contract), the transition to more precise methods of management control became mandatory. Service program managers could no longer adequately justify fund requirements based solely on expenditure rates. Instead, methods and procedures had to be devised that would permit managers to justify and acquire funds for finite work for a total contract. Further, it became necessary to track or measure performance against the plan in the contract for major end products and costs at completion in order to achieve effective control.

In addition to the forcing function of the Planning-Programing-Budgeting System, weapon systems were becoming more complex and sophisticated in addition to growing in total dollar size. Succeeding contracts became larger and

larger. Ultimately, Total Package Procurement Contracts covering research, development, production and some operational support came into vogue. This factor intensified the need on the part of both the government and the contractor to determine and assess progress.

The resultant of this change in environment was to alter the buyer-seller relationship. New forms of contracting with the defense industry had been devised by the government. Various forms of incentive techniques developed. Increased emphasis was placed on fixed price contracts and in some cases Total Package Procurement. This in turn altered the management tasks involved for both government and industry.

Again some assumptions are inherent. They are :

1. Risk could be shifted to contractors
2. Contract incentives would motivate contractors to reduce costs and become more efficient
3. The contract is the only method of control required and will assure performance
4. Disengagement would result.

The change in environment described and the contract form resulted in a wide range of responses. During the transition period, the military departments designed a wide variety of management systems for dealing with major acquisitions. Each manager wrestled separately with the problem of devising a system for describing his plans, for measuring and controlling progress against these plans and recording experiences for future use. Problems arose over the diversity of the information being produced by the wide variety of management systems in use. First, contractors were confronted with external information requirements that were not compatible with their organizational structure and internal control systems. It was logical that these had been designed to be consistent with corporate needs. Data produced as a result of translating and synthesizing information to meet requirements lost credibility and validity. While the problem was partly caused by translation, it was aggravated also by the fact that contractors had not responded to the change in the environment by changing their own information and control systems. For example, accounting systems designed to comply with Armed Services Procurement Regulations and provide the basis for progress payments proved inadequate for the effective cost control required by the shift in contracting methods and weapon system complexity.

Program managers and procurement officers in the field felt the major impact of uncorrelated and invalid information as they attempted to solve problems, exercise correction and negotiate contracts. These impacts stimulated some efforts at reform.

At least two of the efforts are worth noting along with an examination of the causes of success or failure. The first of these efforts which started in 1963, culminated with a policy, "Performance Measurement of Selected Acquisitions," in December, 1967. Underlying this policy are two basic assumptions. The first is that since the government has shifted from detailed control of cost plus contracts to disengagement with fixed prices contracts, it should also cease to specify specific systems and procedures. Accordingly, this policy enumerated criteria for cost and schedule systems which are acceptable to the government. The second, is that there are certain minimum standards associated with the planning and control systems for management just as for hardware performance. Considerable resistance to this concept developed both in defense contractors and in some functions of the government. It was asserted that the contract form was adequate to control costs and government was attempting to disengage from industry. Stated another way, the government could set minimum standards for hardware but not for management performance regarding cost and schedule.

During the period from 1963 until 1967 more than a dozen major evaluations took place using these criteria in various forms. While the results varied, some consistent deficiencies in internal controls were identified. They are:

1. Inconsistent accounting and costing procedures particularly for material and subcontractor expenditures
2. General lack of industrial engineering labor and material standards
3. Excessive reliance on manpower controls rather than discrete finite work assignments
4. Lack of organizational performance visibility.

The reaction of government managers and industry reflected a lack of comprehension of the concept performance measurement. In addition, contractor management and certain elements of government management provided marked resistance. During 1966 and 1967 industry continued to react through various trade associations as the policy was developed for Department of Defense-wide application.

The second effort worth noting is the Department of Defense/Council of Defense and Space Industry Associations (DOD/CODSIA) Management Systems Control project. As mentioned previously, a multitude of documents have been written to provide detailed controls and data over the past several years. These may have been appropriate when the government was directly participating in contractor management on a cost plus arrangement. As the shift toward incentive and fixed price contracting and disengagement took place, a corresponding adjustment in government requirements did not occur. The attention of the Mahon Committee to data costs and efforts by government data managers has resulted in little improvement. Each major contract still has hundreds of procedures and requirements for data and controls that are inconsistent with the way policy and assumptions state how DOD is conducting business.

The DOD/CODSIA project, in a two year program, conducted an extensive study which resulted in a new mechanism for control outlined in two policies, "The Development of Management Control Systems for Use in the Acquisition Process" and "Selection and Application of Management Control Systems in Acquisition Process". While these are good tools, not a single DOD document was cancelled or even altered. In this case, industry did not resist but internal resistance was sufficient to thwart the objectives of a marked reduction in management systems documents.

The purpose of mentioning these two efforts are to highlight the difficulty of attempting to bring about improvement internally in the DOD. When efforts at improvement in any way appear to affect contractor profits, both industry and certain elements of DOD resist through trade associations, advisory committees and the administrative process of coordination. I think those who are responsible for such resistance miss much of the point.

While profits and their size stimulate emotional arguments, the real issue at stake is total cost to DOD and profit is only a small element of this total. There is sufficient evidence in a number of studies, evaluations and analyses which should cause both industry and DOD to seriously reevaluate the subject of cost control. The measurement of cost is seriously questionable. Three vital and basic points emerge:

1. Contractor costs are excessive
2. Poor performance has not resulted in reduced profits
3. Defense profits are equal to or better than those in commercial work when measured objectively by standards used by most financial analysts.

Turning first to excessive costs, there seems to be a fair amount of evidence to support this statement. As a corollary, the current contracting approach is not having any fundamental effect on reducing costs. In fact, it may actually be stimulating the incurrence of costs. Two studies support this statement. One is a research project by Rand Corporation "Cost Incentives and Contract Outcomes: An Empirical Analysis." Basically this study concludes, "The main point demonstrated here is that incentive contracts probably are not saving the government much money through increased efficiency and better cost control." Additionally, the study concluded, "That cost underruns commonly observed for incentive contracts are the result of a general upward shift in target costs rather than improved managerial efficiency and cost control." The Rand study was empirical and collected actual data. On the other hand, Logistics Management Institute has completed a theoretical, mathematical analysis. It concluded, "that cost incentive provisions of a single contract executed by a firm having many other contracts may not provide the motivation anticipated and may in fact offer the contractor a larger total operating profit with an overrun of costs."

There are other factors which lead to initial high target costs. Both the systems analysts, who develop estimates for new weapons systems, and the price analysts, who evaluate contract proposals, are overly dependent upon historical costs. Typically, their estimates are based upon historical costs for the particular contractor, on actual experience to date in a specific program or on historical costs of comparable systems. They tacitly accept the historical level of efficiency (or inefficiency) without challenging whether current and past methods of operation have included excess costs and inefficiencies which could be eliminated.

An alternative method of developing an independent government cost estimates would be the "should cost" approach. The "should cost" is of paramount importance where there is limited or no competition involved in the selection of a contractor. "Probable cost" used in this situation is based upon the use of cost estimating relationships (CER), extrapolation of actual costs to date and the establishment of learning curves (cost-quantity). The essential difference between the "should cost" and the "probable cost" estimated is that the latter implicitly accepts the contractors current mode of operations whereas the former is based on a more objective measure of cost levels.

A major engine contract recently negotiated by the Navy made most effective use of the "should cost" approach. An in-depth study and evaluation was conducted of each cost element of the contractors operation to ascertain what these engines should cost the government, assuming reasonable efficiency and economy on the part of the contractor. It is important to note this departure from the traditional procurement approach. It is normal to assume that the government must pay a sole source producer his incurred and allocable costs and if they are excessive, seek another source.

A recent article in the Journal of Industrial Engineering, August 1966, "Misapplication of the Learning Curve Concept" highlights some of the factors involved which were considered by the Navy in its evaluation of the contractor. The author, concludes "These misapplications are founded on the concept that these factors are always present and their presence is accepted as normal, reasonable and recurring."

In addition, there have been a number of evaluations less formal than the ones cited which support the excess cost position. Evaluations have been made for a number of defense and aerospace firms to appraise their internal resource planning and control systems. Almost without exception, it was apparent to both the evaluators and contractor top management that they lacked objective cost planning and control systems that are essential to prevent excessive costs. As an order of magnitude judgment, these observations suggest costs are from 30%-50% in excess of what they might be under conditions of competitive-type commercial environment.

One might assume that hardware performance must meet requirements even if costs are excessive. However, the problem of measuring technical performance is even more complex than determining cost or schedule variations. One might assume also that poor performance on hardware would result in reduced profits or government business. A recent study by an analyst in the BOB (unpublished) concludes otherwise in the high risk electronics business.

Using actual case histories on cost, return on net worth and hardware performance, the study concludes "performance has little correlation with profit." It concludes "the current special partnership which exists between government and the aerospace industry not only results in a very high incidence of delivered electronics systems with degraded performance, but there is not effective mechanism in existing contractual arrangements to reward or penalize contractor performance."

The third point concerns the adequacy of contractor profits. The adequacy of profits may be a social judgment in the final analysis. However, there are some studies to support the position that defense and aerospace industry profits in the aggregate compare very favorably with the balance of American industry. Logistics Management Institute has made a study which generally concludes "that profit rates on defense work are generally lower and have been declining." Unfortunately, as Senator Proxmire's letter to Secretary Clifford pointed out on July 18, 1968, the LMI study is based on unverified statements of defense contractors.

In contrast, A RAND Corporation report published in December, 1967, "Risk and the Aerospace Rate of Return," reaches different conclusions. It used net worth as the base for rate of return calculations. Just as financial analysts conclude, the RAND study states "the return to stockholders appears the most useful measure of profits." Further, the study states "Aerospace firms have earned high rates of return on investment," and even when adjusted for risk, aerospace was exceeded only by the drug group and consequently some other factor than risk must be identified to explain the rate of return.

A Washington University study also supports the RAND results. This study found "several large defense-space contractors to be more profitable than non-defense firms of similar size, at least on a return-on-net-worth basis." This would support an observation made of one of the two largest programs in DOD where return on investment (before taxes) was approximately 43%.

Despite the preference for measuring profitability as a percent sales by the DOD and industry, recent studies have been made by the Armed Services Procurement Committee and Logistics Management Institute to consider return on investment in arriving at profit on contracts. The reaction of the Industry Advisory Council to the DOD was less than enthusiastic. If you consider the bias in target costs resulting from incentive contracting and the negotiation of profit as a percent of contract price, it is not surprising that the use of return on net worth is resisted.

Several conclusions emerge from the discussion and the facts available. Depending upon interpretation and viewpoint, it is possible to get varied positions. However, the following statements summarize one viewpoint:

1. The changed nature of the programming, budgeting and decision-making process (coupled with increased complexity) requires government managers, and consequently industrial organizations, to look at substantially different sets of facts and information to effectively control and achieve their program objectives efficiently.

2. The response of both industry and government to the changed environment has not been adequate to prevent excessive costs and relate profits to performance or investment.

3. Major efforts at self-improvement do not seem to provide any significant impact on the management of defense procurement.

4. The assumptions and results of incentive contracting, as it is practiced today, are suspect enough to warrant major re-evaluation of the buyer-seller relationship.

5. The planning and control systems in use in the major portion of the industry are inadequate to provide proper cost control and assure some reasonable level of efficiency.

It is exceedingly difficult to provide recommendations which are capable of being implemented. If one considers organizational behavior, it seems unlikely that any attempts for improvement will be successful. The strong functional orientation of the DOD management is not conducive to change.

Similarly, the likelihood is small that industry will police itself. The entire structure of regulatory agencies and constraints provide evidence that in most cases something additional is required to protect the public interest.

Consequently, it is recommended that a major Congressional examination be undertaken as an initial step. After the sufficient information has been gathered, it might be advisable to consider a commission to advise the Congress and the President as to an appropriate course of action. The exploration of uniform accounting standards as a result of the renewal of the Defense Production Act is an excellent start. Secondly, it is recommended that the DOD form a top management team to probe the entire area of cost control in major procurements. This team should be independent of the functional and departmental influences and take direction from the Secretary of Defense. I am convinced the problem of cost control is of such magnitude and scope that any lesser actions will not yield any appreciable results.

Chairman PROXMIRE. Thank you very much, Mr. Buesking.

Our last witness is Irvin Fisher, RAND Corp.

Mr. Fisher?

STATEMENT OF IRVIN N. FISHER, RAND CORP.

Mr. FISHER. Thank you, Mr. Chairman.

It is a privilege to have the opportunity to testify before this subcommittee. I would like to stress at the outset that I appear here as an economist in a professional capacity. In no way do I represent the views of the RAND Corp., the U.S. Air Force, or any of RAND's other clients.

EFFECTS OF INCENTIVE CONTRACTS

My comments today will focus on the effects of incentive contracts in providing motivation for reduced costs.

The Defense Department has always been concerned with increasing the extent of competition in military procurement. Nonetheless, a

major portion of defense purchases continue to occur in an environment where competition is difficult. In these situations procurement officials have come to rely extensively on various substitutes for competition. One technique that has received widespread acceptance in the past decade is the use of incentive contracts.

Incentive contracts obviously have a number of advantages over the cost-plus-fixed-fee contracts. The principal advantage claimed for these contracts, however, is that they make the financial incentives for defense contractors to reduce costs more effective. By increasing total profit as actual costs are reduced below a predetermined target, they encourage contractors to achieve underruns. They also place greater financial risk on the contractor since the Government no longer stands ready to completely absorb contractor's overruns.

It's true that overruns have been less frequent and less substantial under incentive contracts, and Defense Department officials have interpreted this as evidence that contractors are performing more efficiently under incentive contracts. As a matter of fact, in evaluating the effects of incentive contracts, former Secretary McNamara states that costs under incentive contracts are 10-percent lower than they would have been under cost-plus-fixed-fee contracts.

It is, of course, in the contractor's interest to increase the underrun and thereby increase his profit. One way he does this is to perform more effectively and hold actual costs below the target. This is the effect desired by the Department of Defense. However, since overruns and underruns depend on both the actual cost and the target cost, another method for achieving underruns or at least avoiding overruns is to secure as high a target as possible. Whether or not this can be done, of course, depends on the circumstances under which the target is determined.

LACK OF COMPETITION

So long as the target is determined competitively, there is little possibility of obtaining targets that are excessive. The problem is in determining targets for those contracts that must be negotiated in a noncompetitive environment. This problem is quite significant because most weapon system production and support contracts are presently negotiated without any real price competition. As Mr. Malloy noted yesterday, most of the development contracts that are let competitively are awarded on the basis of technical or nonprice rivalry. Because the targets must be negotiated in these situations, contractors have a much greater opportunity to increase them. If they succeed, the targets that result may fail to provide any real incentives for cost reduction or efficiency.

To put this another way, incentive contracts really provide two different incentives; they may motivate contractors to reduce actual costs once the target has been negotiated, but they also encourage contractors to overstate their cost estimates and attempt to negotiate larger targets.

LARGER TARGET COSTS

There is another reason why target costs may be larger with incentive contracts. These contracts increase the risk of financial loss to the contractor by requiring him to bear part of any cost overrun that may result. Since contractors generally dislike contracts involving con-

siderable financial uncertainty, larger targets may be required to reduce this uncertainty. Unfortunately, the underruns that can accompany these larger targets may be erroneously interpreted as cost savings. Consequently, it is not clear whether the underruns observed with incentive contracts result from real cost savings or from larger target costs.

At this point I'd like to summarize the evidence contained in my prepared statement bearing on this question. First, although underruns are more common for FPI contracts than for other types, they do not seem to be related to the incentive features of the contracts. Underruns appear to be no larger or smaller for contracts with small sharing rates than for those with high sharing rates.

Second, the underruns observed with fixed-price-incentive contracts are not related to the amount of supplemental changes for those contracts, suggesting that contractors do not obtain underruns by introducing numerous and costly supplemental changes.

UNDERRUNS MAY RESULT FROM LARGER TARGET COSTS

These results are not consistent with the hypothesis that stronger profit incentives lead to greater efficiency and lower procurement costs. The evidence seems to suggest, instead, that some of the cost-saving effects claimed for these contracts have been exaggerated and that, for the most part, these underruns may be the result of larger target costs.

INCENTIVE CONTRACTS NO SUBSTITUTE FOR COMPETITION

This brings me to the final point in the statement, and that is that incentive contracts are not a substitute for competition. Incentive contracts can only be effective when they are based on reliable and realistic target costs. The obvious question, then, is how to reduce the uncertainty that prevents the Department of Defense from obtaining meaningful targets, and there are basically two alternatives available.

FOLLOW-ON CONTRACTS

In the present procurement environment, effective price rivalry can exist only at the first stage of the program—the development stage. This occurs because the DOD typically awards all of the production and follow-on contracts to the original development contractor without competition from alternative suppliers. Once the contractor obtains the initial development contract he is virtually assured of receiving all subsequent production and follow-on contracts without competition from other potential producers. Because targets must be negotiated without benefit of competition, it is difficult for the Government to determine whether the resulting target cost is reasonably close to the contractor's expected cost. In these cases, contractors may be able to negotiate targets that are large enough to substantially increase their chances for achieving an underrun and increased profits.

WAYS TO INCREASE COMPETITION

Consequently, one suggestion for obtaining better cost information would be to utilize some of the various strategies that increase the degree of competition for weapon system and follow-on contracts. These

strategies include competing development programs, total package procurement, licensing and separation of stages, and second sourcing. The extent to which these techniques may be utilized, of course, depends on various characteristics of the individual programs, but their more extensive use should be explored by DOD.

The importance of utilizing competition to determine target costs in weapon system procurements cannot be overemphasized. There will always be many situations in which price rivalry cannot be effectively used, however—situations where the technical uncertainties are large, the number of potential suppliers limited, the lead time small. In these cases, the DOD must continue to rely on design and technical rivalry and on its cost estimating capability to provide reasonable target costs. A second method, then, for improving the effectiveness of incentive contracts is through improved cost analysis and estimating techniques.

COST ESTIMATING

The DOD has given considerable attention to improving its cost estimating capability and considerable effort has been devoted to developing a comprehensive data base containing cost information from previous weapon system acquisitions. The DOD has also improved its cost estimating methodology and its cost reporting systems, and some procurement officials feel that cost estimating techniques can be refined to the point where they become effective substitutes for price competition in establishing realistic targets. While there are some difficulties with present cost estimating techniques that prevent them from providing cost estimates that are equivalent to competitively determined costs, they can still provide some positive efficiency incentives, especially for the less efficient contractors, and are useful in situations where competition is impractical. In short: Competition is the preferred means for obtaining cost information; cost estimation provides a useful tool when competition cannot be utilized effectively.

In closing, I'd like to point out that incentive contracts are obviously a significant improvement over the earlier CPFF contracts. Although they may not result in significant cost savings, they provide many other important advantages and incentives, both for the DOD and the defense industry. The point is not whether these contracts are worthwhile, but how we can improve their effectiveness as a tool in reducing defense procurement costs.

Thank you.

(The prepared statement of Mr. Fisher follows:)

CONTROLLING DEFENSE PROCUREMENT COSTS:
AN EVALUATION OF INCENTIVE CONTRACTING EXPERIENCE

I. N. Fisher

I. INTRODUCTION

The Defense Department has long been concerned with increasing the extent of competition in military procurement. Nonetheless, a major portion of defense purchases occur in situations where any form of price competition is difficult. In these situations, procurement officials have come to rely extensively on various substitutes for competition. One technique that has received widespread acceptance in the past seven years is the use of incentive contracts.

In 1962 the Armed Services Procurement Regulations (ASPR) were revised to encourage increased use of incentive contracts. These changes reflected a consensus within the Defense Department that the cost-plus-fixed-fee (CPFF) contracts then commonly used to purchase major weapon systems did not provide adequate incentive for contractors to control costs. The revisions establish cost-plus-incentive-fee (CPIF) contracts as preferable for research and development effort, and recommend the use of firm-fixed-price (FFP) or fixed-price-incentive (FPI) contracts for production. Use of CPFF contracts is limited to situations involving considerable uncertainty where incentive-type contracts would be impractical.

These changes have had a tremendous impact on the defense industry and have resulted in a substantial increase in the use of FFP and other types of incentive contracts for defense procurement. As Table 1 indicates, the shift away from CPFF contracts has been striking.

Portions of this paper were extracted from I. N. Fisher, A Re-appraisal of Incentive Contracting Experience, The RAND Corporation, RM-5700-PR, July 1968.

This paper was prepared at the request of Senator William Proxmire for use by the U.S. Congress Joint Economic Committee, Subcommittee on Economy in Government.

CPFF contracts accounted for more than one-third of total defense expenditures in 1960, but less than 10 percent in 1966. In the same period, CPIF contracts more than doubled, and FFP contracts nearly doubled.

Defense Department representatives believe incentive contracts are an effective means for controlling procurement costs. The principal advantage claimed for these contracts is that they make the financial incentives to reduce costs more effective. By increasing the total profit as actual costs are reduced below the target, they encourage contractors to achieve cost underruns. They also place greater financial risk on the contractor, since the Government no longer stands ready to completely absorb cost overruns.

Table 1
PERCENTAGES OF TOTAL DEFENSE EXPENDITURES BY
TYPE OF PRICING ARRANGEMENT

Contract Type	Fiscal Year						
	1960	1961	1962	1963	1964	1965	1966
Fixed Price							
FFP	31.4	31.5	38.0	41.5	46.3	52.8	57.5
FPI	13.6	11.2	12.0	15.8	18.5	16.6	15.9
Other ^a	12.4	15.2	10.8	7.6	6.4	7.1	5.8
Cost-Reimbursable							
CPFF	36.8	36.6	32.5	20.7	12.0	9.4	9.9
CPIF ^b	3.2	3.2	4.1	11.7	14.1	11.2	8.3
Other ^b	2.6	2.3	2.6	2.7	2.7	2.9	2.6

SOURCE: Directorate for Statistical Services, OSD, Military Prime Contract Awards.

^aIncludes FPR contracts.

^bIncludes cost and cost-sharing contracts.

Cost overruns have been far less frequent and less substantial under incentive contracts than under CPFF contracts. Defense Department officials have interpreted this outcome as evidence that a contractor's performance under incentive contracts is more efficient than

under CPFF contracts. In fact, in evaluating the impact of incentive contracts on procurement costs, former Secretary McNamara states that costs under incentive contracts are 10 percent lower than they would have been under CPFF pricing arrangements.* Nonetheless, there are some valid reasons for questioning the extent of the cost savings claimed for these contracts. The most important reason is that cost underruns often may be achieved without any real cost savings to the Government.

* See Statement of Secretary of Defense Robert S. McNamara Before the House Armed Services Committee on the Fiscal Year 1966-1970 Defense Program and 1966 Defense Budget, February 18, 1965, Senate Subcommittee on DOD Appropriations, p. 187.

II. STRUCTURE OF INCENTIVE PRICING ARRANGEMENTS

Incentive contracts are supposed to motivate defense contractors to perform more efficiently and control costs more closely. This is accomplished through the incentive sharing provision, which allows contractors to retain part of any resulting cost underrun as increased profits. So long as these underruns represent realized cost reductions, incentive contracts accomplish their intended goal.

To understand how cost underruns may occur without benefit of real cost savings to the Government, consider the factors that determine the contractor's profit under an incentive contract. Total profit received by the contractor consists of two components:

$$\Pi_T = \Pi_t + \alpha(C_t - C_f),$$

where Π_T = total fee to contractor;
 Π_t = profit on initial target amount;
 C_t = target cost;
 C_f = actual cost;
 α = incentive sharing rate.

The first component is the profit amount based on the target cost. The second component is the profit sharing arrangement by which contractors retain part of any cost underrun that may result, but must bear a portion of any cost overrun. The term inside the parentheses is an overrun when the actual cost exceeds the target, and an underrun when actual cost is less than the target.

The incentive feature operates through this profit-sharing arrangement. To obtain increased profits, the contractor must achieve a cost underrun. For each dollar increase in underrun, the contractor retains α percent as increased profit, providing motivation to achieve as large an underrun as possible.

It is of course in the contractor's interest to increase the underrun and thereby increase his profit. One way he does this is to perform more efficiently and hold actual costs below the target value--

the effect desired by Defense Department officials. Overruns and underruns depend on both the actual cost and the target cost, however, and another method for avoiding overruns and increasing underruns is to secure as high a target cost as possible. The success of this strategy of course depends on the circumstances under which the target is determined. So long as targets are determined competitively, procurement officials need have little concern over their precise values. The market forces operating in a competitive environment tend to nullify the possibility of obtaining targets that are in some sense excessive.*

The difficulty is in determining an appropriate target value for contracts negotiated in a noncompetitive environment. This problem is significant, because most weapon system production and support contracts are presently negotiated without any price competition. Moreover, many development contracts that are let competitively are awarded on the basis of technical or nonprice rivalry. Because target costs are commonly negotiated in these situations, contractors have much greater opportunity to increase them. If they succeed, the resultant targets may fail to provide any real incentives for cost reduction and efficiency.

Provided the Government has adequate information upon which to predict cost as well as the technical expertise required to make an independent cost estimate, a realistic target can be negotiated. Otherwise, an inflated target and a consequent underrun are the likely results. Such an underrun is unrelated to any real cost savings, merely reflecting the larger target cost.**

* Although competition may eliminate excessive target costs, it may also result in the selection of a less efficient contractor. See J. J. McCall, An Analysis of Military Procurement Policies, The RAND Corporation, RM-4062-PR, November 1964.

** The supplemental changes and modifications that occur after the target has been established also provide an opportunity for the contractor to increase the target cost above the expected value. More precisely, the profit formula should be written

$$\Pi_T = \Pi_t + \Pi_S + \alpha(C_a - C_f),$$

What we are saying is that incentive contracts really provide two different incentives; not only do they motivate contractors to reduce actual costs, but they also encourage them to overstate target cost estimates.* Thus, it may be misleading to attribute the underruns observed with these contracts to reduced costs and improved performance without more detailed analysis of the available evidence.

There is a second reason why target costs may be larger with incentive pricing arrangements. Incentive contracts increase the risk of financial loss to the contractor by requiring him to bear part of

where Π_s = additional fee allowed on supplemental changes and modifications;

C_a = adjusted target cost, including the negotiated costs of supplemental changes and modifications.

It is apparent that incentive pricing arrangements may also encourage contractors to propose frequent changes and modifications to the initial contract because these changes may result in additional profits, Π_s . Moreover, since the costs of changes and modifications must be negotiated, it also provides an opportunity for the contractor to increase the target cost, thereby improving the likelihood of an underrun. Through the remainder of this section, the term "target cost" will include the effect of supplemental changes and modifications; i.e., the adjusted target cost.

*The relative importance of these two incentive effects depends on the values of the incentive sharing rate and the rate of profit allowed on the contract. For example, differentiating the profit function with respect to both target cost and actual cost yields:

$$dP/dC_t = (p_t + \alpha)$$

and

$$dP/dC_a = -\alpha$$

The first term is the marginal effect on profits from a change in the target cost; the second is the marginal effect of a change in the actual cost. Since $dP/dC_t > 0$, an increase in the target cost results in an increase in the total profit. On the other hand, since $dP/dC_a < 0$, an increase in actual cost reduces the total profit. Since $(p_t + \alpha) \geq \alpha$, the effect of increasing the target cost by one dollar outweighs the effect of reducing actual costs by the same amount, and as long as $p_t > 0$, the incentive to overstate target costs will be more tempting than will be the incentive to reduce actual costs.

any cost overrun that may result. Assuming that contractors are generally averse to risk, profits on incentive contracts must be sufficient to offset the increased risk.

Compensation for the increased risk attached to incentive contracts can be provided in several ways. An obvious method would be for the Government to increase target profits by the appropriate amount.* In practice, however, it may not be possible to increase profits sufficiently to offset the increased risk completely. If uncertainty is large and the contractor extremely risk-averse, the required risk premium may be so large that it results in a rate of profit that is politically prohibitive. For example, profit rates of 40 percent or more might be required on some contracts; such rates would arouse Congressional interest and be difficult to explain.

Since it may be impossible to increase profits sufficiently to offset the increased financial risk inherent in incentive contracts, contractors may be forced to reduce the risk level by negotiating target costs high enough to provide a margin of safety against large overruns. This strategy is justified whenever profits are not sufficient to completely offset the greater risk.** In short, both larger profits and larger target costs may be required to compensate for the greater risk attached to incentive contracts. Unfortunately, the underruns that accompany these larger targets may be erroneously attributed to reduced costs and increased efficiency.

* The DOD has recognized the need for larger profits on riskier incentive contracts with larger sharing rate values; the ASPR specifically provides for larger negotiated profit rates for these contracts. See ASPR 3-808.1(b).

** Evidence indicates that larger target costs are negotiated as the sharing rate becomes larger. See John Cross, A Reappraisal of Cost Incentives in Defense Contracting, P-282, Institute for Defense Analysis, 1966; and F. M. Scherer, The Weapons Acquisition Process: Economic Incentives, Harvard University Press, Boston, 1963. This has been explained as the compensation required to induce contractors to bear greater risk. Nonetheless, larger targets reduce the probability of overruns and increase the likelihood of increased profits.

III. SOME EMPIRICAL EVIDENCE

One limitation common to all empirical analyses of incentive contracts is that it is never clear whether the underruns observed with incentive contracts result from increased efficiency and better cost control or from larger target costs secured by contractors to compensate for increased risk. To assess the true impact of incentive pricing arrangements on the cost of military procurement, it would be necessary to determine how incentive pricing provisions affect target costs. The data required for the analysis, however, are not available. Nonetheless, although it is impossible to separate directly the effects that incentive contracts have on target costs from their effects on actual costs, it is possible to draw some inferences about how contractors respond to these contracts by examining several other measures of cost outcome for which data are available.*

Three questions are examined in this section. These are:

(1) whether the underruns observed with incentive contracts are related to the incentive features of these contracts; (2) whether these underruns result from supplemental changes and modifications that occur during the life of the contract; and (3) the extent to which observed underruns differ among major defense contractors. The statistical analyses presented here are somewhat technical; however, a summary and discussion of the major conclusions and implications is presented at the end of the section.

COST OVERRUNS/UNDERRUNS

Since incentive pricing arrangements sharpen the incentive for contractors to seek cost underruns, one would naturally expect to find that underruns are more common with incentive contracts than with cost-reimbursable contracts. Table 2 compares the average cost overrun/

* The sample used in this section contains 1007 Air Force contracts completed during fiscal years 1959 through 1966. The data consist solely of contracts for major weapon systems and related equipment and total nearly \$15.7 billion. For a more detailed description of the sample characteristics, see I. N. Fisher, A Reappraisal of Incentive Contracting Experience, The RAND Corporation, RM-5700-PR, July 1968.

underrun for several types of contracts included in the sample. An average overrun is observed for each group except the fixed-price-incentive contracts (FPI), illustrating the trend that is often interpreted by Defense Department officials as an indication of greater efficiency and cost reduction.*

Table 2
AVERAGE OVERRUN/UNDERRUN BY TYPE OF CONTRACT^a
Percentage of Final Cost

Type of Contract	Mean Overrun/Underrun
FPI	-3.18
FPR	1.74
CPIF	1.29
CPFF	1.90

^aUnweighted averages of observed overruns/underruns for each type of pricing arrangement.

Pricing Arrangement

Table 2 indicates that average overruns/underruns are different for the FPI as opposed to the other three groups. The significance of these differences can be tested statistically using analysis of variance to determine whether the observed overruns/underruns differ significantly among the two groups of contracts.** Table 3 presents the results. Note that the mean-square deviation of overruns/underruns is large between groups and small within groups. This indicates that there are significant differences in overrun/underruns between the two groups, but little variation within each group. An F-ratio value greater

* Overrun/underrun is computed from $(C_f - C_a)/C_f$, so that underruns are negative while overruns are positive.

** FFP contracts were excluded since no measure of overrun/underrun is available for these contracts. For FPR, the price is periodically renegotiated during the life of the contract. As a result, these arrangements closely resemble cost-reimbursable contracts. This is also indicated to some extent in Table 2, where the average overrun observed for FPR contracts is nearly as large as that for CPFF.

than 3.78 (at the 0.01 level of probability) is required in order to be confident that the observed differences among the two groups are anything but spurious. Since the computed value of the F-ratio is 18.5, the analysis indicates that these observed differences are statistically significant and are unlikely to have occurred by chance.

Table 3

ANALYSIS OF VARIANCE FOR TWO CONTRACT
CLASSIFICATIONS: FPI AND ALL OTHERS

Variance	Sum of Squares	D.F.	Mean Squares	F Ratio
Between group	0.3826	1	0.3826	18.573
Within group	19.4783	946	0.0206	
Total	19.8609	947		F _{.01} = 6.64

Incentive Sharing Rate

Table 4 shows the average overrun/underrun and its standard deviation for incentive contracts classified according to sharing rate value. Note that an average overrun occurs for contracts in the first group--those with sharing rate values less than 10 percent--while the remaining three groups have average underruns. The reason is that most of the contracts in the first group are CPIF, while those in the remaining groups are FPI and FPR and, on the basis of the preceding results, overruns would be expected on average for the CPIF group.

^aIn order to determine whether the observed overrun/underruns are statistically different between groups, the within-group variation (i.e., variation of overruns/underruns in each group about the group mean) is compared with the between-group variation. If the variation within the groups is large while that between groups is small, differences between the groups may be insignificant. On the other hand, small within-group variation but large between-group variation suggests that the observed differences between groups may be significant. Analysis of variance computes the ratio of these variations (adjusted for degrees of freedom) and provides a formal method for testing the significance of the ratio.

Although average underruns are indicated for the three groups with sharing rate values greater than 0.10, they appear to become progressively smaller as the sharing rate becomes larger. This is a curious result, since the opposite trend would be expected; i.e., the larger sharing rates presumably subject the contractor to greater risk of financial loss and, consequently, provide stronger motivation to avoid overruns. The large standard deviations for each of these groups, however, indicate that there is considerable variation about the mean values.

Table 4
MEAN OVERRUN/UNDERRUN AND STANDARD DEVIATION
CPFF and FFP Contracts Excluded

Item	Sharing Rate Value			
	.01-.09	.10-.19	.20-.29	.30-.99
Mean ^a	1.45	-3.50	-2.32	-0.39
Standard deviation ^a	12.95	13.86	8.45	8.81
Number	43	144	156	87

^a Measured as a percentage of final cost.

Figure 1 illustrates one possible way of describing the predicted relationship between the sharing rate and cost overruns/underruns. If conventional beliefs about incentive fees are correct, low sharing rate values should be associated with cost overruns, while larger sharing rate values should be associated with cost underruns. This type of linear relationship can be described by an equation of the form:

$$(1) \quad (C_f - C_a)/C_f = a_0 + a_1 \alpha ,$$

where α = incentive sharing rate;

C_f = final cost;

C_a = adjusted target cost (initial target plus changes and modifications); and

a_0, a_1 are undetermined coefficients.

One procedure for testing whether underruns are, in fact, larger for contracts with larger sharing rate values would be to compute the correlation between these two variables. A more interesting procedure is to estimate the values of the coefficients, a_0 and a_1 , in Eq. (1) using simple regression analysis. This provides a measure of correlation along with several other useful statistics.

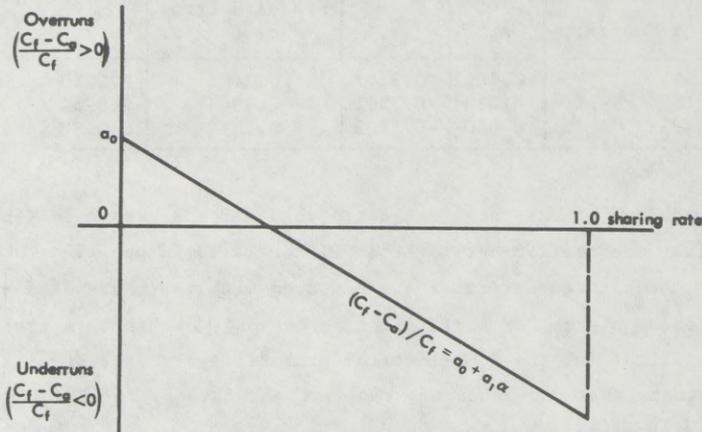


Fig. 1 -- Relationship between incentive sharing rate and overruns/underruns

This has been done for the FPI, FPR, CPIF contracts; the results appear in Table 5. The value of the constant term, a_0 (shown in column 1), is the intercept illustrated in Fig. 1. These values provide an estimate of the average overrun/underrun that would result for the three types of contracts if the sharing rate were to approach zero. The estimated value for a_1 , shown in column 2, is the slope of the curve illustrated in Fig. 1, and provides a measure of the effect of

the sharing rate value on cost overruns/underruns. If underruns are larger for larger sharing rate values, the coefficient a_1 should be negative. A positive sign for this coefficient would imply smaller underruns for contracts with larger sharing rate values. The numbers appearing in the third column are the standard errors of the slope estimates and provide a measure of their reliability. The last column contains a measure of the correlation between observed overruns/underruns and the sharing rate value.

Table 5
ESTIMATED REGRESSION COEFFICIENTS
Cost Underrun/Overrun and Sharing Rate

Type of Contract	a_0	a_1	Standard Error of a_1	R^2
FPI	-0.100	0.3167	0.1066	0.0270
FPR	0.084	-0.7501	0.4441	0.0754
CPIF	0.050	-0.1903	0.1313	0.0283

Although two of the three estimated values for a_1 shown in Table 5 are negative, the coefficient for the FPI contracts is positive. Moreover, when these three estimates are compared with their standard errors, shown in column 3, the FPI coefficient is the only one that is statistically significant (at the 0.01 level of probability). This surprising result suggests that underruns are smaller, not larger, for FPI contracts with larger sharing rate values.*

Contract Size

Another important factor that may affect this relationship is contract size. It seems reasonable to expect contractors to be more

* This result holds only for the sample of Air Force contracts examined here. Nonetheless, it is based on a fairly large number of contracts and is difficult to explain. This question will be examined in more detail, however, in a later section discussing the observed pattern of supplemental changes.

concerned with multimillion-dollar contracts than with million-dollar contracts because the financial consequences of cost overruns are much more serious. This possibility can be investigated by including a measure of contract size in Eq. (1). One obvious measure that could be used is contract cost. Including this in the relationship results in

$$(2) \quad (C_f - C_a)/C_f = a_0 + a_1 \alpha + a_2 C_f' \quad ,$$

where $C_f' = \log$ of final cost, C_f^* .

Estimates of these coefficients for each type of contract appear in Table 6. None of the coefficients of size, a_2 , are statistically significant at any reasonable level of confidence. Moreover, including size in the relationship has had little effect on the value of R^2 (compare Table 5). Consequently, size appears to have little effect on observed overruns/underruns for incentive contracts.

Table 6

ESTIMATED REGRESSION COEFFICIENTS

Cost Overrun/Underrun, Sharing Rate, and Contract Size

Type of Contract	a_0	a_1	Std. Error of a_1	a_2	Std. Error of a_2	R^2
FPI	-0.174	0.311	0.107	0.019	0.016	0.032
FPR	0.128	-0.166	0.133	-0.021	0.032	0.093
CPIF	-0.019	-0.713	0.4495	0.026	0.031	0.045

Summary

These results indicate that although underruns are more common for FPI contracts than for other types, the underruns do not seem

* Since costs vary widely (between one million and several hundred million), the logarithm of final cost has been used in place of the final cost. This acts as a scale factor to reduce large absolute differences in dollar amount while preserving relative differences.

to be related to either the value of the sharing rate or to the size of the contract. Cost overruns/underruns appear to be no different for contracts with small sharing rate values than for those with large sharing rates, or for contracts differing substantially in total dollar amount. This suggests that these contracts have not had an important effect on contract cost outcomes or contractor performance.

Since the magnitude of the cost overruns/underruns observed with FPI contracts seems to be unrelated to either the value of the sharing rate or to contract size, it is difficult to attribute these underruns to increased efficiency and reduced costs. It is unlikely that contractors are equally efficient and cost-conscious for all FPI contracts regardless of differences in financial risk associated with the sharing rate and size of contract. It is more likely that these observed underruns result from larger target costs--targets that exceed anticipated actual costs.

There are essentially two ways in which contractors could insure that the adjusted target cost exceeds the expected cost. One would be to negotiate larger target costs to the extent possible during contract negotiation. This, of course, would depend on the circumstances under which the contract was awarded--that is, the degree of monopoly power enjoyed by the contractor. Another possibility, once the initial target had been negotiated, would be to introduce numerous and costly changes and modifications in the original specifications. This strategy would also improve the likelihood of achieving cost underruns. Although there is presently no way of determining how inflated initial target costs may be, the costs of supplemental changes and modifications are known. Consequently, the effects of different contract characteristics on the magnitude of these costs can be explored in some detail.

SUPPLEMENTAL CHANGES AND COST UNDERRUNS

Table 7 summarizes average costs of supplemental changes, measured as a percentage of final cost, for four major types of contracts. Supplemental changes appear to be considerably larger for the cost-reimbursable contracts than for the fixed price contracts. This may reflect

the greater technical uncertainty inherent in those projects typically included under CPFF coverage.

Table 7
SUMMARY STATISTICS: SUPPLEMENTAL CHANGES
AND MODIFICATIONS

Percentage of Final Cost

Type of Contract	Mean
FPI	4.17
FPR	7.97
CPIF	77.15
CPFF	60.08

Contractors may be able to increase the likelihood of achieving a cost underrun by introducing frequent supplemental changes and modifications. This strategy provides the opportunity to adjust the target cost upward and would appear particularly attractive whenever the target cost is tight; i.e., close to the contractor's anticipated actual cost. One way of investigating this possibility is to estimate the relationship given in Eq. (3):

$$(3) \quad (C_f - C_a)/C_f = a_0 + a_1(C_a - C_i)/C_f \quad ,$$

where C_f = final contract amount;

C_a = adjusted target cost (initial target plus supplemental changes);

C_i = initial negotiated target cost;

and a_0 , a_1 are unknown coefficients to be estimated. If underruns are greater for contracts with larger supplemental changes, a_1 should be negative and statistically significant.

Table 8 presents the estimated values for the coefficients along with their standard errors and coefficients of determination for three types of incentive contracts. In all cases the values of R^2 are extremely low, indicating that underruns and supplemental changes are

not closely related. Thus it appears that contractors do not utilize supplemental changes to inflate target costs and increase the magnitude of cost underruns.

Table 8

ESTIMATED REGRESSION COEFFICIENTS: UNDERRUNS
AND SUPPLEMENTAL CHANGES

Type of Contract	a_0	a_1	Standard Error of a_1	R^2
FPI	-.0274	.01002	.03093	.0003
FPR	.0085	-.17541	.08393	.0571
CPIF	-.0164	-.00862	.04072	.0012

COMPARISON OF OVERRUNS/UNDERRUNS AMONG CONTRACTORS

The results obtained above indicate that both cost overruns/underruns and supplemental changes differ markedly between cost-reimbursable and fixed-price contracts. Thus, it appears that contractors react differently to these two types of pricing arrangements. There may also be significant differences in cost performance among individual contractors, however. For example, some contractors may achieve cost underruns consistently, while overruns may be typical for others.

Table 9 compares the average overrun/underrun for those contracts exceeding \$1 million held by 15 large Air Force contractors. As before, underruns are more common for the fixed-price contracts (FPI and FPR) than for the cost-reimbursable contracts (CPIF and CPFF). Nonetheless, several contractors have average underruns for both cost-reimbursable and fixed-price contracts, while others have average overruns for both types. This suggests that these may be some important differences among individual contractors' responses to these contracts.

Analysis of variance can be used to determine whether these average overruns/underruns differ significantly between contractors. Tables 10 and 11 present the results for cost-reimbursable and fixed-price contracts, respectively. For the cost-reimbursable contracts, the differences in average overruns/underruns between contractors are

not statistically significant. That is, overruns/underruns are not noticeably different among cost-reimbursable contracts for any contractors included in the sample. For the fixed-price incentive contracts, however, the value of the F-ratio is statistically significant (at the 0.01 level of probability), indicating that there are important differences in observed overruns/underruns among contractors. Thus, for fixed-price contracts, some contractors apparently experience larger cost underruns, on average, than do others.

Table 9

COMPARISON OF AVERAGE OVERRUNS/UNDERRUNS:
FIFTEEN LARGE AIR FORCE CONTRACTORS

Contractor	Cost-Reimbursable Contracts		Fixed-Price Contracts	
	Average Overrun	No.	Average Overrun	No.
1	.0463	10	.0323	13
2	-.0436	20	-.0746	21
3	.0671	7	.0010	10
4	-.0044	21	-.0106	13
5	.0142	29	-.0327	18
6	.0012	51	-.0507	4
7	-.0412	11	.0107	72
8	-.0080	50	.0598	6
9	.0050	13	-.0097	15
10	-.0889	28	-.0219	29
11	-.0958	21	-.0726	6
12	.1267	4	-.0220	31
13	.0325	40	-.0950	11
14	.0631	10	-.1595	6
15	.0086	10	-.0421	32

Table 10

ANALYSIS OF VARIANCE: COST-REIMBURSABLE CONTRACTS,
FIFTEEN LARGE AIR FORCE CONTRACTORS

Variance	Sum of Squares	D.F.	Mean Squares	F
Between group	.5597	14	.0400	1.596
Within group	7.7668	310	.0251	
Total	8.3265	324		$F_{.05} = 1.72$

There are two possible explanations for these differences. It may be that some contractors are more responsive to contract profit incentives than others; i.e., some contractors may perform more efficiently or apply greater pressure for larger target costs on contracts with larger sharing rates. On the other hand, some contractors may be

Table 11

ANALYSIS OF VARIANCE: FIXED-PRICE CONTRACTS,
FIFTEEN LARGE AIR FORCE CONTRACTORS

Variance	Sum of Squares	D.F.	Mean Squares	F
Between group	.4915	14	.0351	4.228
Within group	2.2596	272	.0083	
Total	2.7511	286		F _{.01} = 1.73

generally more efficient than others regardless of the pricing arrangement, may be more aggressive in negotiating larger target costs, or may enjoy certain competitive advantages that increase the likelihood of achieving cost underruns. For example, both an absence of market price information and lack of meaningful competition improve the contractors' ability to obtain larger target costs and larger cost underruns.

If the first explanation--differences in contractors' responses to incentive pricing arrangements--is correct, observed underruns for each contractor should be larger for contracts with stronger profit incentives. Alternatively, if the observed differences in cost underruns result principally from negotiation strategy, market position, and overall efficiency, the magnitude of the underruns should be relatively constant for a given contractor.

One way to determine which alternative better explains the observed differences in underruns among contractors is to estimate the relationship between the pricing arrangement and cost overrun/underrun for each contractor. This relationship is described in Eq. (4).

$$(4) \quad (C_f - C_a)/C_f = \gamma_j + b_j \alpha \quad j = 1, \dots, 15 \quad ,$$

where γ_j = average overrun/underrun for the j^{th} contractor;
 b_j = effect of the incentive sharing rate on the j^{th} contractor.

In this formulation the overrun/underrun for each contract, measured as a percentage of final cost, is expressed as the sum of two components; the first is the average overrun/underrun for the individual contractor, γ_j , while the second, b_j , reflects the effect of the pricing arrangement on the contractor. If the estimated values for the b_j 's differ significantly among contractors while the values for the γ_j 's remain relatively constant, then variations in observed underruns should be attributed to differences in individual contractors' responses to the profit incentives. If, on the other hand, the b_j 's are relatively constant but the γ_j 's vary noticeably among contractors, then variations in observed overruns/underruns should be attributed to individual contractor-specific characteristics such as the contractor's ability to estimate target costs, his competitive advantage, negotiation strategy, and overall differences in efficiency.

Estimates of these coefficients appear in Table 12. Note the differences between the average overruns/underruns shown in Table 9. and the estimated values shown here. These differences occur because the sharing rate accounts for a portion of the average overruns/underruns shown in Table 9. The estimated values for both the γ_j and b_j coefficients differ substantially among contractors. The significance of these variations can be determined by testing the following hypotheses:

$$H_1: \gamma_i - \gamma_j = 0 \quad \text{for all } i, j;$$

$$H_2: b_i - b_j = 0 \quad \text{for all } i, j.$$

Hypothesis 1 asserts that there are no significant differences in average overruns/underruns among contractors, while Hypothesis 2 asserts that the effect of the pricing arrangement on overruns/underruns is negligible for each contractor.

These hypotheses are also tested using analysis of variance; the ratios of the explained mean square deviation to the unexplained

mean square deviation for each set of variables are computed in Table 13. Since the critical value of the F ratio (at the 0.01 level) is 1.79, H_1 can be rejected while H_2 cannot. This means that the b_j 's are not statistically different from zero or, in other words, that the incentive pricing arrangement has had little effect on the cost

Table 12
ESTIMATED COEFFICIENTS: FIXED-PRICE CONTRACTS

Contractor	γ_j	b_j	Contractor	γ_j	b_j
1	.0836	.0081	9	-.0179	.0046
2	-.1541	-.0159	10	-.0175	.0059
3	.0313	.0055	11	-.0279	-.0099
4	.0234	-.0029	12	-.0712	.0033
5	-.0117	-.0056	13	-.0945	.0153
6	-.0285	.0041	14	-.1242	.0080
7	.0294	.0011	15	-.0518	-.0158
8	-.0933	-.0122			

performance of the contractors. Thus the overruns/underruns observed for these contractors must be explained by other factors.

The γ_j 's, on the other hand, are statistically significant, indicating that there are important differences in average overruns/underruns among the contractors. Thus, some contractors consistently achieve larger underruns than others and, since these underruns cannot be explained by differences in incentive pricing arrangements, they must be related to other characteristics peculiar to each contractor.

Table 13
ANALYSIS OF VARIANCE: FIXED-PRICE CONTRACTS

Item	Sum of Squares	D.F.	Mean Squares	F
Pricing arrangement, b_j	.0754	15	.0050	.549
Contractor effect, γ_j	.3347	15	.0223	2.451
Unexplained residual	2.3411	256	.0091	
Total variation	2.7512	286		

These results indicate that although average overruns/underruns for fixed-price contracts differ significantly among contractors, these differences cannot be explained by variations in contract pricing arrangements. There appears to be no relationship between the incentive arrangement and the observed cost overruns/underruns for any of the individual contractors examined. Consequently, it seems improbable that the larger underruns achieved by some contractors result from increased efficiency or reduced costs.

It may be that contractors with the largest underruns produce different types of products involving less uncertainty than do those experiencing smaller underruns (or larger overruns). This explanation seems unlikely, however, since all 15 contractors examined were large, well diversified, and produced similar products. It seems more likely that these observed underruns result from differences in other contractor-related factors--factors that include competitive advantage, cost-estimating ability, negotiation skill and general managerial capability. Some contractors may consistently be able to obtain larger target costs than others, for example, thereby increasing the likelihood of obtaining underruns.

CONCLUSIONS

In sum, these results indicate that although underruns are more common with fixed-price-incentive contracts, they are not related to the pricing provisions of the contract. Consequently, these underruns should not be attributed to increased efficiency or reduced costs. It is difficult to believe that contractors are generally more efficient and cost-conscious under FPI contracts regardless of differences in financial risk associated with the incentive sharing rate. It seems more likely that these observed underruns result primarily from target costs that exceed anticipated actual costs.

Contractors could increase the adjusted target cost above the anticipated actual cost by either of two possible strategies. One would be to negotiate larger initial target costs--targets that are sufficiently greater than expected actual costs to provide a margin of safety against possible cost overruns. The extent to which this

may be possible, of course, depends on the degree of price rivalry as well as on the Government's ability to predict actual costs accurately.

The other alternative would be to introduce numerous supplemental changes in order to provide a basis for negotiating a larger target cost, thereby increasing the likelihood of an underrun. The results obtained here, however, indicate that supplemental changes do not explain the underruns observed with incentive contracts; observed underruns seem to be generally unrelated to the magnitude of the supplemental changes. The evidence indicates that these observed underruns originate, instead, from target costs that exceed the contractor's anticipated actual cost. Given present weapon system procurement practices, it is easy to see how this may occur. So long as subsequent production and follow-on contracts are awarded to the initial development contractor without effective price rivalry, there can be no guarantee that the negotiated target cost is sufficiently close to the contractor's anticipated actual cost to provide a meaningful incentive for greater efficiency and reduced costs.

In short, incentive contracts cannot be expected to provide the motivation for which they were intended without some means for establishing realistic target costs.

IV. CONCLUSIONSUMMARY OF STATISTICAL RESULTS

The foregoing statistical analysis suggests that some of the advantages usually attributed to incentive contracts may be illusory. It is commonly believed that incentive contracts provide substantial entrepreneurial motivation for increased efficiency and tighter cost control. This belief is one of the stronger justifications for the current extensive use of cost-incentive contracts. The evidence presented here, however, implies that the incentive effect on contractors' costs and efficiency may be weaker than is customarily believed. Rather, the evidence suggests that the cost underruns commonly observed for Air Force incentive contracts are the result of a general upward shift in target costs.

There is an important implication here for improving the effectiveness of incentive contracts. What is needed to make cost-incentive contracts work effectively are tighter target costs. To insure that incentive contracts motivate contractors toward increased efficiency and lower costs, it is essential that the target cost be a realistic estimate of expected actual costs. Thus, future gains in incentive contracting are going to come through improved methods of determining target costs rather than through more elaborate incentive sharing arrangements. Emphasis must be placed on obtaining better target cost information rather than on higher sharing rates and more complex incentive structures.

ALTERNATIVES FOR IMPROVING INCENTIVE CONTRACTING

Provided target costs are determined competitively, there is little chance of obtaining targets that significantly exceed contractors' anticipated costs. In the present procurement environment, however, target costs for most of the incentive contracts awarded for major weapon systems are negotiated without benefit of competition (incentive contracts, in fact, often seem to be regarded as a substitute for competition). This is because the DOD typically awards

production and follow-on contracts to the original development contractor without competition from alternative suppliers. As a result, effective price rivalry can exist only at the first stage of the program--the development stage. Once the contractor obtains the initial development contract, he is virtually assured of receiving subsequent production and follow-on contracts without fear of competition from other potential producers. Because the targets for these contracts must be negotiated without market price information, it is extremely difficult for the Government to determine whether the resulting target cost is reasonably close to the contractor's expected cost. Contractors may thus be able to obtain targets sufficiently above their anticipated costs so that the likelihood of achieving a cost underrun and greater profits is increased substantially.*

One obvious way to determine realistic prices for major weapon systems and also to provide targets that result in real efficiency incentives would be to utilize competition more extensively in weapon system procurements. Of course the extent to which this is possible depends on the nature of the program; that is, on the degree of uncertainty and other program characteristics. Nonetheless, several promising strategies for increasing competition have been proposed in recent years. These techniques range from total package procurement where one contract is awarded competitively for the entire program, to complete separation where each development, production, and follow-on contract is awarded competitively to the same or to various

* Procurement officials recognize the difficulty accompanying this method of awarding contracts for major weapon systems. For example, in an address before the Institute on Management of Pre-Development Phase of Government Contracts (September 1965) Deputy Assistant Secretary of Defense (Procurement) John M. Malloy stated:

While most production and support contracts are either fixed-price or contain incentives, these arrangements are negotiated for the most part in a noncompetitive environment and may or may not have resulted in the establishment of targets which provide a contractor real and meaningful incentives. These circumstances provide the strongest incentive to increase the competitive aspects of systems procurement.

Nonetheless, none of the more favorable techniques available has been utilized extensively.

contractors. While one of these alternatives may be more suitable than another for a particular procurement situation, all offer important advantages over present weapon system procurement practices.*

The importance of using competition to determine target costs in weapon system procurements cannot be overemphasized. Nonetheless, there will be many situations in which price rivalry cannot be effectively used--situations where technical uncertainties are large, the number of potential suppliers limited, etc. And it does seem likely that a large portion of all weapon system procurements will continue to be made without benefit of competition. In such cases the DOD must rely upon its cost estimating capability to determine reasonable target costs. Thus, another apparent method for increasing the effectiveness of incentive contracts is through improved cost analysis and estimating techniques.

Recognizing the importance of improved cost information, the DOD has given considerable attention to improving its cost estimating capability. They have devoted much effort to developing a comprehensive data base consisting of cost information from previous weapon system acquisitions. The DOD has also improved its cost estimating methodology and its cost reporting systems,** and some procurement officials now believe that cost estimating techniques can be refined to the point where they become an effective substitute for price competition in establishing realistic target costs.***

* Possible techniques include total package procurement, parallel research and development, second sourcing, and separation. G. R. Hall and R. E. Johnson discuss the merits and limitations of these alternatives in Competition in the Procurement of Military Hard Goods, The RAND Corporation, P-3796, March 1968.

** The Truth-in-Negotiations Act (PL 87-653) is intended to insure the reliability and accuracy of contractor-furnished cost information.

*** The rationale for this is made clear in the following remarks presented by Harold Asher, former Deputy for Cost Analysis to the Assistant Secretary of Defense (Systems Analysis), in an address to the Operations Research Society of America, October 16, 1966:

... the assumption is made that DOD is able to estimate the cost of a new weapon system at least as accurately as any single contractor. The reasonableness of this assumption should be

Although cost estimation plays an important role in obtaining improved cost information, it cannot provide cost estimates that are in any sense equivalent to figures that would result through competition among potential suppliers. There are two reasons for this. First, cost estimation relies extensively on past experience to provide estimates of the costs of proposed weapon systems; consequently, such estimates can be no better than the underlying data upon which they are based. If the costs for the previous weapon system procurements were not obtained competitively, the resulting estimates obviously would not be comparable to competitively determined costs. Unfortunately, the majority of weapon system contracts contained in the DOD's data bank were not awarded competitively; in fact many were CFFF, so that costs were possibly several times larger than they might have been otherwise.

Second, even if all contracts included in the data bank had been awarded competitively, the resulting cost estimates would not be equivalent to competitively determined costs. The reason is that cost estimation utilizes data from a number of contracts with different contractors to project the cost of a proposed weapon system. Because some contractors are more efficient than others, this estimated cost is in reality an average cost--an estimate of the cost that would result for a firm of average efficiency. As a result, competitively determined costs would generally be lower than estimated costs and the difference could be substantial. Nonetheless, estimated target costs can still provide some positive efficiency incentives for the less efficient contractors and, as a result, are useful in situations where competition is impractical.

In short, although competition is the preferred means for obtaining cost targets, cost estimation provides a useful tool when competition cannot be utilized effectively. The important point is that

apparent. DOD's cost experience is based on all the weapons produced for DOD, while a single company has only its own past programs as an experience base. The assumption is predicated on the effort we are now making to exploit this greater amount of data and experience.

these estimated costs may be considerably larger than competitively determined costs and might not provide the strongest efficiency incentives. Since competition is probably not feasible in the majority of weapon system procurements, however, any improvements that can be made in cost-estimating methodology are probably well worthwhile.

Given these constraints, the effectiveness of incentive contracting could presently be improved by utilizing these contracts more selectively. In the past, incentive contracts were applied in numerous cases in which the technical uncertainties were so large that they precluded any meaningful target cost determination. It is important to recognize these situations and either rely on some other form of pricing arrangement or postpone negotiating the target cost until the uncertainty has been resolved. Better project definition prior to negotiating the incentive structure could contribute much toward improving the effectiveness of these contracts.

SOME FINAL OBSERVATIONS

Nothing can be said here about the total cost of a weapon system under an incentive contract as compared to that under a cost-reimbursable contract. There is no way to analyze how the choice of contract type affects the overall cost of a weapon system; the results obtained here relate only to differences between actual and target costs. The main point demonstrated here is that incentive contracts probably are not saving the Government much money through increased efficiency and better cost control. Consequently, the merits of incentive contracts will have to be judged on other grounds.

Incentive contracts have several important advantages that should not be overlooked. Because of the upward shift in target costs, incentive contracts provide the Government with better program cost information than do cost-reimbursable contracts. Because target costs are more realistic for incentive contracts, they permit better financial planning and budgetary control while eliminating the large overruns characteristic of cost-reimbursable contracts. Moreover, incentive contracts may have made both the Government and defense contractors a little more cost-conscious than before. Contractors probably have different attitudes toward costs since the advent of

incentive contracts than previously, and the Government may be taking the role of a cost-conscious buyer rather than a benevolent sponsor. Consequently, it is possible that these contracts may have resulted in some indirect cost savings. Unfortunately, these salutary effects cannot be measured and quantified.

Chairman PROXMIRE. Thank you very much, Mr. Fisher. I will begin my questioning with Mr. Fitzgerald.

AIR FORCE DIRECTS WITNESS NOT PREPARE WRITTEN STATEMENT

Mr. Fitzgerald, I wrote you on October 18, and asked that you prepare a statement in advance, and that you submit 100 copies of your statement at least one day before your appearance.

You have told us this morning you did not prepare a statement for the record. Why not?

Mr. FITZGERALD. Mr. Chairman, I was directed not to prepare a statement.

Chairman PROXMIRE. Who told you not to prepare the statement?

Mr. FITZGERALD. Directly my immediate superior, Mr. Nielsen, the Assistant Secretary of the Air Force for Financial Management, but it is my understanding that he was, in turn, acting on the direction of our legislative liaison people. Mr. Stempler, I believe, signed the response to the letter which you wrote me.

We have with us this morning Commander Dauchess, who, I think, represents Mr. Stempler's office, and if I may, I should like to refer this question to him.

Chairman PROXMIRE. All right, let me ask Commander Dauchess. Commander Dauchess, who told Mr. Fitzgerald not to prepare a written statement for this committee?

Commander DAUCHESS. I don't know.

Chairman PROXMIRE. You don't know. Would it come with the authority of Secretary Morris or would Secretary Brown have anything to do with it?

Commander DAUCHESS. I don't know if it would come within their authority. Secretary Brown would probably be more knowledgeable.

Chairman PROXMIRE. He would be more knowledgeable. Would he take responsibility for it?

Commander DAUCHESS. I wouldn't know that, Mr. Chairman.

Chairman PROXMIRE. Well, this is very troublesome to this committee, very disturbing. We ask witnesses to appear and prepare a statement. Here is a man who is well qualified, has information of importance to the Congress, nothing classified in it. He is directed by the Air Force not to prepare a statement for the committee. We have the right to know who told him not to prepare it. Did Secretary Clifford provide instructions to muzzle this witness?

Commander DAUCHESS. I am not aware of any.

Chairman PROXMIRE. Has there been any effort by the Pentagon to restrict witnesses who appear before other committees, to your knowledge?

Commander DAUCHESS. No, sir; none that I know of.

WITNESS FREE TO ANSWER QUESTIONS

Chairman PROXMIRE. So far as you know, is Mr. Fitzgerald free to discuss issues before this committee if we ask him questions; provided, of course, the questions do not deal with any classified information?

Commander DAUCHESS. Definitely.

Chairman PROXMIRE. He is free to answer?

Commander DAUCHESS. Yes, sir.

Chairman PROXMIRE. But you have no information for us today as to why Mr. Fitzgerald was denied the opportunity to prepare a statement for the committee?

Commander DAUCHESS. No, sir.

Chairman PROXMIRE. All right, sir.

Now, Mr. Fitzgerald, have you done work in connection with the procurement of the C-5A?

Mr. FITZGERALD. Mr. Chairman, not in connection with the procurement of the C-5A. However, our office is responsible for, among other things, assuring that we have adequately financed the C-5A program, so I have done work in connection with the analysis of the probable costs of the program. Specifically, I am a member of a steering group which is directing the efforts of our analysts to arrive at the probable costs of the program.

\$2 BILLION OVERRUN ESTIMATED FOR C-5A

Chairman PROXMIRE. Is it true that the costs of that contract will be approximately \$2 billion more than was originally estimated and agreed on?

Mr. FITZGERALD. I don't believe that that is a correct figure for any single contract.

Chairman PROXMIRE. What was the original cost?

Mr. FITZGERALD. I have some figures furnished me just this morning by Mr. Racusin, the deputy for procurement in the Secretary of Air Force office. I would like to submit these for the record. But just briefly, the principal contractor, Lockheed Aircraft Corp., has a target cost of \$1,278,603,000 for the development program plus the first production run of 58 aircraft. We are now attempting to analyze the current outlook for performance on that portion of the program.

(Figures presented by Mr. Fitzgerald at the hearing appear below :)

C-5A CONTRACT FIGURES

Awarded October 1965

	58 Aircraft	115 Aircraft
	R.&D. production run A (Spare parts through category II testing and base level peculiar AGE)	R.&D. plus production run A and production run B
Lockheed:		
Target cost.....	\$1,278,603,000	\$1,769,000,000
Target profit.....	127,861,000	¹ 176,900,000
Target price.....	1,406,464,000	² 1,945,900,000
Ceiling.....	1,662,183,900	2,299,900,000
GE:		
Target cost.....	407,990,000	559,000,000
Target profit.....	40,799,000	55,900,000
Target price.....	458,732,300	633,000,000
Ceiling.....	540,330,400	744,000,000

Note: Deliveries January 1971-run A through 1972-run 5. No adjustment before Jan. 1, 1968

Abnormal escalation clause—±1.5 percent no adjustment.

If BLS goes outside, we approximate \$200-220 million through run B. About \$240 million in adjustment, covering escalation prior to Jan. 1, 1968 and difference between the assumed normal escalation and upper limit of band, will not be reimbursed, 4 BLS—Aerospace, materials, subcontracts, equipment.

¹ Fixed.

² Subject to formula.

Mr. FITZGERALD. Also in the document which I will submit for the record we summarize the repricing clauses which would be applied to the follow-on production if the option for the follow-on production is exercised.

If the total amount of estimated cost variance were to come to pass—and I have no way of knowing whether that will in fact come to pass—on both the Lockheed and the General Electric contract—General Electric provides the engine for the C-5A airplane—if we were to buy the follow-on production runs using the repricing formula, and if our Air Force support items, things that have not yet been contracted for, increase proportionately, your figure could be approximately right.

Chairman PROXMIRE. So it is likely to cost \$2 billion more provided you go ahead with the program and provided you use the so-called repricing formula which seems at least to be tentatively arrived at.

Mr. FITZGERALD. Well, assuming that Lockheed may, in particular, Lockheed—

Chairman PROXMIRE. That would be much more than 100 percent then, if my calculations just offhand are correct. You started off with a \$1.4 billion and you end up with \$2 billion more than that, or \$3.4 billion; is that wrong or not?

Mr. FITZGERALD. I don't think that is the proper basis. The total program for aircraft engines and support items was considerably more than the \$1.2 billion.

Chairman PROXMIRE. I see.

Can you give us a notion of what the additional cost is compared with the initial cost?

Mr. FITZGERALD. The current Lockheed program, the development program plus run A could exceed its target cost by 100 percent.

Chairman PROXMIRE. By 100 percent, so it would have been \$2 billion and this would be another \$2 billion or \$4 billion roughly.

Mr. FITZGERALD. I should point out the Lockheed contract is not the total amount of the program. General Electric has a substantial part and there is another substantial increment that has to do with the support items.

Chairman PROXMIRE. Now, the additional cost, however, is primarily Lockheed, I take it?

Mr. FITZGERALD. They are the largest contributor to the overrun; yes, sir.

Chairman PROXMIRE. There is perhaps an additional cost for General Electric or is there an additional cost?

Mr. FITZGERALD. There is an additional cost, yes, sir; I don't have the figures.

Chairman PROXMIRE. Is it relatively small or don't you know what it is?

Mr. FITZGERALD. Relative to the Lockheed costs they are small. But they are not small in an absolute sense. These are very large figures.

Chairman PROXMIRE. But the principal amount of the increased cost is for Lockheed?

Mr. FITZGERALD. Yes, sir.

I should point out, though, that all of these estimates are estimates at completion. As of now, the contractor has completed two airplanes and have perhaps the equivalent of five or six additional aircraft in

various stages of completion. The contract is for 58 aircraft, so it is quite early in the program.

It would be our hope, certainly my own personal hope, that the effectiveness of the Lockheed management would be improved to the point that these high figures would not come to pass.

Chairman PROXMIRE. The decision is being made when, January, is that correct, as to whether to go ahead with this?

Mr. FITZGERALD. I believe our option expires on January 31. However, I am not certain on this point. I could supply it for the record later.

Chairman PROXMIRE. I wish you would.

Mr. FITZGERALD. Yes, sir.

SCHEDULE

Part XXV—Option

A. (1) The Contractor hereby grants to the Government an option(s) to purchase under the terms of the contract a quantity not to exceed fifty-seven (57) C-5A aircraft in addition to those required under Item B of Part I of the Schedule ("Production Run A") plus the following associated equipment all of a type and configuration meeting the specification requirements of Item B of Part I of the Schedule:

- (a) Complete complement of AGE necessary to support three squadrons.
- (b) One (1) Flight Simulator.
- (c) Required spare parts in accordance with Contractor's spare parts pricing exhibit subject to Part I(b) hereof.

Such additional quantity of aircraft and associated equipment is identified as "Production Run B".

(2) The Contractor hereby further grants to the Government an option(s) to purchase under the terms of the contract a quantity not to exceed eighty-five (85) C-5A aircraft in addition to those required under Item B of Part I of the Schedule and those purchased under the option(s) granted in (1) above, plus the following associated equipment, all of the type and in the configuration being produced at the time such option is exercised:

- (a) Complete complement of AGE necessary to support five (5) squadrons.
- (b) One (1) MTU.
- (c) One (1) Flight Simulator.
- (d) Required spare parts in accordance with Contractor's spare parts pricing exhibit subject to Part I(b) hereof.

Such quantity of aircraft and associated equipment is identified as "Production Run C".

(3) The options in (1) and (2) above may be exercised in whole or from time to time in part by issuance of written notification thereof to the Contractor. For any individual aircraft or item of associated equipment such notification must precede the delivery date set forth in Part II(a) by at last the following period of time:

	<i>Period of time (months)</i>
(a) Aircraft, numbers 59 to 115.....	24
(b) Aircraft, numbers 116 to 200.....	18
(c) AGE	9
(d) MTU's	9
(e) Flight simulators.....	7

All aircraft, MTU's, and Flight Simulators shall be ordered in numerical sequence. As to spare parts, notification will be issued in sufficient time with due consideration given to production lead time to meet required deliveries.

B. In the event the Government elects to exercise any of the options granted by A. (1) of this Part XXV, it is understood and agreed that any aircraft and any associated equipment ordered shall be at the unit target cost and unit target profit as set forth below, subject to the provisions of C. and D. below:

- (1) Aircraft: in accordance with Part V of Contractor's Document No. 4-12.
- (2) AGE: in accordance with Contractor's Document No. 4-4.
- (3) Training Equipment:

One (1) Flight Simulator:	<i>Unit target</i>
Cost -----	\$2, 469, 000
Profit -----	247, 000

- (4) Spare Parts.

Target prices will be established in accordance with Contractor's spare parts pricing exhibit subject to Part I(b) "Breakout of Spare Parts".

C. Sixty (60) days after delivery of the last aircraft of "Production Run A" requirements the parties shall determine, based upon the then available data, the Contractor's actual 3010 BPC, (MPC 1010, MPC 1060, and MPC 1070) costs for all of the production aircraft called for in the Schedule of the contract.

(1) In the event such costs substantially exceed the initial estimate of such costs on Production Run A aircraft, adjustments will be made in the unit target costs for the aircraft and associated equipment in "Production Run B" pursuant to this paragraph. For the purposes of these option provisions, the "target cost" shall be computed by dividing the billing price (adjusted for all contract changes but unadjusted for any contract overrun or underrun) of all Production Run A aircraft by 1.10, and the "ceiling price" by multiplying the "target cost" by 1.30.

(a) If such actual costs are between the "ceiling price" and 140.5% of the "target cost", the following adjustment procedure will be followed:

- (i) Compute actual costs as a percentage of "target cost".
- (ii) Subtract 130% from (i).
- (iii) Multiply the percentage result of (ii) by 1.5.

(iv) Multiply each unit target cost for aircraft and associated equipment in Production Run B by (iii) and add the product to each unit target cost in Production Run B.

(v) Establish a new ceiling price on each aircraft or item of associated equipment in Production Run B, at 130% of the unit target cost as adjusted in (iv).

(vi) The contract target profit dollars in Production Run B will not be adjusted.

(b) If such actual costs exceed 140.5% of "target cost", the same adjustment procedure will be followed as in (a) above, except a factor of 2 will be used in lieu of the 1.5 indicated in (a) (iii) above.

(2) In the event that such actual costs are less than 90% of the "target cost", adjustment will be made in the unit target costs of aircraft and associated items in Production Run B as follows:

(a) If such actual costs are between 80% and 90% of the "target cost", the following adjustment procedure will be followed:

- (i) Compute actual costs as a percentage of "target cost".
- (ii) Subtract (i) from 90%.
- (iii) Multiply the percentage result of (ii) by 2.0.

(iv) Multiply each unit target cost for aircraft and associated equipment in Production Run B by (iii) and subtract the product from each unit target cost in Production Run B.

(v) Establish a new ceiling price on each aircraft or item of associated equipment in Production Run B, at 130% of the unit target cost as adjusted in (iv).

(vi) The contract target profit dollars on Production Run B will not be adjusted.

(b) If such actual costs are less than 80% of the "target cost", the unit target costs of Production Run B shall be reduced by the same percentage as the experienced under-run on Production Run A. The same procedures followed in (a) (v) and (vi) above with regard to the ceiling price and target profit will be followed.

D. The aircraft option prices set forth in B.(1) above shall only apply in the event the total Production Run B quantity is ordered. If a smaller quantity is ordered the following shall apply:

(1) Unit target costs and prices for a quantity of less than thirteen (13) aircraft shall be subject to separate price negotiation based upon the adjustment methodology described below.

(2) Unit target costs and prices for a quantity of less than forty-six (46) but more than twelve (12) aircraft shall be subject to the following adjustment in the target cost of MPC 1010, MPC 1060, and MPC 1070 with a corresponding increase in target profit:

<i>Total units ordered</i>	<i>Percentage increase in MPC 1010, 1060, 1070 unit target cost</i>	<i>Total units ordered—Continued</i>	<i>Percentage increase in MPC 1010, 1060, 1070 unit target cost</i>
13 -----	5.3	21 -----	1.9
14 -----	4.6	22 -----	1.8
15 -----	4.0	23 -----	1.7
16 -----	3.5	24 -----	1.4
17 -----	2.9	25 -----	1.3
18 -----	2.7	26 to 35 -----	0.8
19 -----	2.5	36 to 45 -----	0.3
20 -----	2.2		

E. (1) Unit and total billing prices for Production Run C will be established for all of Production Run C or such increment thereof as may be ordered based upon a projection of the estimated actual costs being experienced by the Contractor on aircraft and associated equipment in "Production Run B".

(2) Sixty (60) days after delivery of the last aircraft of Production Run B, the parties shall, based upon the then available data, determine the Contractor's actual 3010 BPC (MPC 1010, MPC 1060, and MPC 1070) costs for producing all Production Run B aircraft. A projection of such costs will be made on a straight line unit curve to establish the firm unit and total target cost for Production Run C aircraft. Further, actual 3010 BPC, MPC 1020 and 1040 costs will be determined and a similar projection made to establish firm unit and total target costs on Production Run C AGE and training equipment, respectively.

(3) The Air Force will evaluate the actual current and complete cost data with the Contractor to determine the reasonableness of the unit target cost projections established in (2) above. In the event this review indicates that a straight line projection is unreasonable, the Government will negotiate with the Contractor to reach agreement on an equitable projection. Failure to reach agreement will be considered a disagreement in fact to be resolved under the "Disputes" clause of this contract.

(4) The ceiling price for Production Run C aircraft and associated equipment will be 120% of established target cost.

C-5A OPTION PRICES

Production unit	Air vehicle—MPC 1010		MPC 1060, system engineering/ management	MPC 1065, value engineering	MPC 1070, data	Total unit cost	Profit	Total unit price
	Recurring	Total						
Fiscal year 1970 (33 aircraft):								
59	\$8,834,000	\$8,834,000	\$105,000	\$14,000	\$49,000	\$9,002,000	\$900,000	\$9,902,000
60	8,806,000	8,806,000	105,000	14,000	49,000	8,974,000	897,000	9,871,000
61	8,767,000	8,767,000	105,000	14,000	49,000	8,935,000	894,000	9,829,000
62	8,729,000	8,729,000	105,000	14,000	49,000	8,897,000	890,000	9,787,000
63	8,692,000	8,692,000	105,000	14,000	49,000	8,860,000	886,000	9,746,000
64	8,656,000	8,656,000	105,000	14,000	49,000	8,826,000	883,000	9,715,000
65	8,633,000	8,633,000	104,000	14,000	49,000	8,801,000	880,000	9,681,000
66	8,599,000	8,599,000	104,000	14,000	49,000	8,766,000	877,000	9,643,000
67	8,565,000	8,565,000	104,000	14,000	49,000	8,732,000	873,000	9,605,000
68	8,544,000	8,544,000	104,000	14,000	49,000	8,711,000	871,000	9,582,000
69	8,478,000	8,478,000	104,000	14,000	49,000	8,678,000	868,000	9,546,000
70	8,447,000	8,447,000	104,000	14,000	49,000	8,645,000	864,000	9,509,000
71	8,427,000	8,427,000	104,000	14,000	49,000	8,614,000	861,000	9,473,000
72	8,427,000	8,427,000	104,000	14,000	49,000	8,594,000	859,000	9,453,000
73	8,397,000	8,397,000	104,000	14,000	49,000	8,564,000	856,000	9,420,000
74	8,367,000	8,367,000	104,000	14,000	49,000	8,534,000	853,000	9,387,000
75	8,339,000	8,339,000	104,000	14,000	49,000	8,506,000	851,000	9,357,000
76	8,319,000	8,319,000	104,000	14,000	49,000	8,486,000	849,000	9,335,000
77	8,291,000	8,291,000	104,000	14,000	49,000	8,458,000	846,000	9,304,000
78	8,265,000	8,265,000	104,000	14,000	49,000	8,433,000	843,000	9,276,000
79	8,237,000	8,237,000	104,000	13,000	49,000	8,403,000	840,000	9,243,000
80	8,220,000	8,220,000	104,000	13,000	48,000	8,386,000	839,000	9,225,000
81	8,193,000	8,193,000	104,000	13,000	48,000	8,358,000	836,000	9,194,000
82	8,171,000	8,171,000	104,000	13,000	48,000	8,336,000	834,000	9,170,000
83	8,145,000	8,145,000	104,000	13,000	48,000	8,310,000	831,000	9,141,000
84	8,140,000	8,140,000	104,000	13,000	48,000	8,306,000	830,000	9,135,000
85	8,106,000	8,106,000	104,000	13,000	48,000	8,295,000	827,000	9,098,000
86	8,082,000	8,082,000	104,000	13,000	48,000	8,247,000	825,000	9,072,000
87	8,058,000	8,058,000	104,000	13,000	48,000	8,223,000	822,000	9,045,000
88	8,045,000	8,045,000	104,000	13,000	48,000	8,210,000	821,000	9,031,000
89	8,022,000	8,022,000	104,000	13,000	48,000	8,187,000	819,000	9,006,000
90	8,000,000	8,000,000	103,000	13,000	48,000	8,165,000	816,000	8,981,000
91	7,980,632	7,980,632	103,740	13,000	47,892	8,145,264	815,326	8,960,590
Subtotal.....	276,068,632	276,068,632	3,438,740	449,000	1,605,892	281,562,264	28,156,326	309,718,590
MPC 1020 training.....								
MPC 1040 AGE.....						7,849,000	785,000	8,634,000
Total, fiscal year 1970.....						289,411,264	28,941,326	318,352,590

Production unit	Air vehicle, MPC 1010		MPC 1060, system engineering/management	MPC 1065, value engineering	MPC 1070, data	Total unit cost	Profit	Total unit price
	Recurring	Nonrecurring						
Fiscal year 1971 (24 aircraft):								
92	\$7,966,000	\$158,000	\$97,000	\$13,000	\$46,000	\$8,280,000	\$828,000	\$9,108,000
93	7,945,000	158,000	97,000	13,000	46,000	8,259,000	826,000	9,085,000
94	7,925,000	158,000	97,000	13,000	46,000	8,239,000	824,000	9,063,000
95	7,903,000	158,000	97,000	13,000	46,000	8,217,000	822,000	9,039,000
96	7,892,000	158,000	97,000	13,000	46,000	8,206,000	821,000	9,027,000
97	7,872,000	158,000	97,000	13,000	45,000	8,185,000	818,000	9,003,000
98	7,853,000	158,000	97,000	13,000	45,000	8,166,000	816,000	8,982,000
99	7,834,000	158,000	97,000	13,000	45,000	8,147,000	815,000	8,962,000
100	7,824,000	158,000	97,000	13,000	45,000	8,137,000	814,000	8,951,000
101	7,804,000	158,000	97,000	13,000	45,000	8,117,000	811,000	8,928,000
102	7,785,000	158,000	97,000	13,000	45,000	8,098,000	810,000	8,908,000
103	7,766,000	158,000	97,000	13,000	45,000	8,079,000	808,000	8,887,000
104	7,757,000	158,000	97,000	13,000	45,000	8,070,000	807,000	8,877,000
105	7,738,000	158,000	97,000	13,000	45,000	8,051,000	805,000	8,856,000
106	7,722,000	157,000	97,000	12,000	45,000	8,033,000	803,000	8,836,000
107	7,704,000	157,000	97,000	12,000	45,000	8,015,000	801,000	8,816,000
108	7,697,000	157,000	97,000	12,000	45,000	7,998,000	800,000	8,798,000
109	7,678,000	157,000	97,000	12,000	45,000	7,989,000	799,000	8,788,000
110	7,661,000	157,000	96,000	12,000	45,000	7,971,000	797,000	8,768,000
111	7,643,000	157,000	96,000	12,000	45,000	7,955,000	795,000	8,750,000
112	7,628,000	157,000	96,000	12,000	45,000	7,938,000	794,000	8,732,000
113	7,611,000	157,000	96,000	12,000	45,000	7,921,000	792,000	8,713,000
114	7,611,000	157,000	96,000	12,000	45,000	7,915,000	791,000	8,706,000
115	7,605,000	157,000	96,000	12,000	45,000	7,902,469	792,247	8,694,716
Subtotal	186,397,469	3,782,000	2,322,000	302,000	1,085,000	193,888,469	19,389,247	213,277,716
MPC 1020 training						2,547,000		2,547,000
MPC 1040 AGE						3,925,000		4,318,000
Total fiscal year 1971						200,360,469	20,037,247	220,397,716

REASONS FOR COST INCREASES

Chairman PROXMIRE. Why is it that this will cost an additional \$2 billion, perhaps? What is the reason for this increased cost?

Mr. FITZGERALD. Well, we have had very large increases in manufacturing hours, the time required to build the aircraft, and we have had large increases in general and administrative expenses, and large increases in subcontracting costs.

Chairman PROXMIRE. Lockheed gets the contract on the basis of the original estimate, and then you say you have a recalculation of what the costs are, and the manufacturing costs increase greatly and the administrative costs increase greatly; why did they make such a very bad underestimate?

Mr. FITZGERALD. It is not altogether clear that the basic problem is underestimation of costs initially. I think perhaps this might have been a contributing factor, but I think we must also look at the effectiveness of ongoing control. It is quite possible to have a tough but attainable cost estimate and have it look like a very bad estimate because of inadequate controls in the ongoing program. I am not certain—

Chairman PROXMIRE. On the basis of the information that you have what is your conclusion as to the reason for this?

Mr. FITZGERALD. I believe it is a mixture of the two, plus corporate strategy in this case.

Chairman PROXMIRE. What do you mean by corporate strategy?

REPRICING FORMULA

Mr. FITZGERALD. I think that it is generally acknowledged at this point in time that we have something of a reverse incentive on Lockheed because of the repricing formula.

Chairman PROXMIRE. What does that mean?

Mr. FITZGERALD. At present the repricing formula provides for increases to the follow-on production which may more than offset the losses on the current production program. I will just have to say that I think the formula was not an appropriate application. I think it was a mistake.

Chairman PROXMIRE. So that Lockheed suffered losses on their current production program. To compensate them for this the cost for the prospective program is increased, is that correct?

Mr. FITZGERALD. Whether or not the stated intent was to compensate them for losses, I could not say, but the effect is to do just that, yes, sir.

Chairman PROXMIRE. What degree of pressure is there on the Federal Government, what kind of pressure is there for the Federal Government to go ahead and make a decision in January or before the end of January, to pay the \$2 billion in excessive costs.

Mr. FITZGERALD. Well, I would suppose that, first, there is the desire to obtain the aircraft. We certainly want the very latest and best aircraft that can be obtained, and this is a step forward in large transport technology. I suppose there is an understandable desire to keep the production base active at this particular plant. And beyond that, I can only speculate on pressures that might be generated through elected representatives. I am not subject to these personally. I don't know of

any pressure that would be brought to bear—at least on people at my level—to keep it—

Chairman PROXMIRE. Pressures from elected representatives, Lockheed is located where?

Mr. FITZGERALD. They have plants in several States, Mr. Chairman. Chairman PROXMIRE. Where is their principal plant?

Mr. FITZGERALD. Their principal plant and headquarters is in Burbank, Calif. The C-5A is being built at the Georgia plant, Marietta, Ga.

Chairman PROXMIRE. The C-5A is being built in the State of Georgia?

Mr. FITZGERALD. Yes, sir.

DOD ALTERNATIVES

Chairman PROXMIRE. What alternatives does the DOD have negotiating for this purchase, what can they do if they don't want to go ahead with this?

Mr. FITZGERALD. We are not obligated to exercise the option.

Chairman PROXMIRE. If they wanted the aircraft at this point could they go to Boeing or some other manufacturer?

Mr. FITZGERALD. I am not really qualified to answer that. I think certainly it is conceivable that they could go to another manufacturer. Whether this would prove to be a wise decision is another matter. I just don't know.

Chairman PROXMIRE. It may well be that at this stage if they want the aircraft, and it can be a very useful aircraft for our defense, that the Federal Government may have to go ahead even if there is this enormous increase in cost. Is that likely?

Mr. FITZGERALD. I think it is unlikely that we would go ahead with the worst possible situations on cost that I have mentioned. I can't imagine our going ahead without employing every means at our disposal to minimize the costs.

Chairman PROXMIRE. There is another alternative still that we haven't discussed and that is the alternative to negotiate below the level we were talking about.

Mr. FITZGERALD. Yes, indeed and that is very—

Chairman PROXMIRE. The so-called pricing formula you talk about is not rigid. It is possible now there may be a negotiation to reduce the \$2 billion to some substantially lower figure on negotiation and have it produced by Lockheed.

Mr. FITZGERALD. Well, I should point out quickly that the \$2 billion that was brought up is not all Lockheed by any means. But I would say certainly there are opportunities to reduce any projected cost increases.

Chairman PROXMIRE. You say it is not all Lockheed. Is there a similar problem with General Electric?

Mr. FITZGERALD. We have the repricing formula; I do not have the numbers before me and I honestly have no ready feel for the General Electric figures. However, they are not nearly as large.

Chairman PROXMIRE. Can you give us any notion of the proportions, you say it is not as large, number one, in terms of the absolute amount? Is it as large in terms of the proportionate, are they about 100 percent off?

Mr. FITZGERALD. No, sir; the amounts are not as large in absolute terms or proportionally. I believe that, subject to the secrecy that naturally surrounds negotiation proceedings, these figures could be provided. I hesitate to speculate on them because I do not have them before me. The follow-on arrangements are now being negotiated with Lockheed.

(Mr. Fitzgerald later supplied the following:)

ESTIMATES OF C-5A PROGRAM COST TO THE GOVERNMENT

[Dollars in billions]

	April 1965	October 1968
58 aircraft:		
R.D.T. & E. plus A ¹	\$2.3	\$3.3
AFLC investment.....	.2	.5
	2.5	3.8
120 aircraft:		
R.D.T. & E. plus A and B ²	3.1	4.4
AFLC investment.....	3.3	.9
	3.4	5.3

¹ Estimate includes the cost of development and production of the first 58 aircraft and their engines.

² Estimate includes the cost of development and production of the first 58 aircraft and their engines plus aircraft and engines for which the Government holds options to order additional quantities.

³ Initial spares estimate only. Common age modification and replenishment spares are not included in October 1965 estimate but are included in October 1968 projection. Current estimate of initial spares is approximately \$500 million.

EXCESS CARGO-CARRYING CAPACITY

Chairman PROXMIRE. Earlier in the hearings we had testimony from GAO about excess cargo-carrying capacity and millions of dollars of unused space. We were not given the percentages because GAO didn't know but they said there was a great deal of excess capacity and costs to the Government. Is it your understanding that we do already have more cargo capacity than we need?

Mr. FITZGERALD. I have read the GAO testimony, and I have seen informal—

Chairman PROXMIRE. We are cutting down presumably, we are leveling off at least in Vietnam, we all hope and pray we may be able to reduce the level of operations there, there are other areas where we may not be able to level off.

Mr. FITZGERALD. I have no reason to doubt the GAO findings or other indications that I have seen that this is true. I think the thing that is not before us is the possible requirements for airlift in other situations of this sort which might be postulated. I would suggest that someone in the systems analysis function of the Department of Defense would be better qualified in this area than I am. This is not an area of my direct concern. I do grant that GAO figure at this time is probably accurate.

Chairman PROXMIRE. I have a note here from the staff saying about, the contention that, we are shipping telephone poles to Europe. The only reason I bring this up is whether or not you have any particular knowledge of the judgment being used in using the kind of cargo capacity we have now. Obviously, if we need cargo planes for moving troops in a hurry we have to have them, if that is the strategic judgment of our President and of the Chiefs of Staff and so forth. But to simply be used as a more rapid means of moving material that prob-

ably ought to be shipped by cheaper water transportation, it is another question. Do you have any views on this or any knowledge?

Mr. FITZGERALD. I have, of course, heard of such situations. I have no personal firsthand knowledge or any facts to either deny or refute these stories. I am certain that such things do occasionally happen.

Chairman PROXMIRE. If you were in charge of this program completely and had complete discretion what you would do, what do you think ought to be done about the C-5A and the excessive costs that have been run up in this program?

Mr. FITZGERALD. Well, of course, if I were in charge, I would first have to find out about some of these things that I am not knowledgeable about now.

Chairman PROXMIRE. Well, on the basis of your present knowledge?

Mr. FITZGERALD. As a minimum as I mentioned before, and I believe this will be done, I would make every effort to find out what means are available to us to mitigate damages to the Government. I think this is an absolute necessity, and if it were clear that the contractual incentives were not working, I would attempt to use other means to motivate improvement of the cost performance. However, I could not postulate any "cook book" remedial activity.

Chairman PROXMIRE. I'm sure that long, loud buzzer doesn't mean that the Secretary of Air Force is operating the buzzer system in this building. (Referring to the sound of building buzzer system being tested at this time.)

Mr. FITZGERALD. I believe he is abroad. [Laughter.]

At this point I am reasonably confident that such actions will take place. I can't promise you because it is not my area of direct responsibility, but I think the impact of the conceivable increases in the program is sufficient to motivate most of us, I would say all of us, in the Air Force secretariat to do whatever we can to control the situation.

Chairman PROXMIRE. Thank you very, very much, Mr. Fitzgerald.

Mr. BUESKING, will you tell us your former capacity with the DOD? What your principal responsibilities were, and what you are now doing?

Mr. BUESKING. Yes, Mr. Chairman.

Most recently I was the Director of Management Systems Control in the Office of the Secretary, Assistant Secretary of Defense (Comptroller) for over 2 years. Prior to that I spent a number of years in the Minuteman weapons systems as a Chief, Production Programs. Currently, I am on the faculty of the University of Southern California in the school of public administration.

Chairman PROXMIRE. You make three vital points in your statement, number one that contractor costs are excessive. That poor performance has not resulted in reduced profits, and that defense profits were equal to or higher than commercial work. Will you explain each of these points? First contractor costs were excessive.

Mr. BUESKING. I would try to do so, Mr. Chairman.

EXCESSIVE CONTRACTOR COSTS

On the first point of contractor costs, I base my statement on the samples that I personally gathered, some 12 major evaluations. These

conclusions are based on examination of the work content involved in contractors' plants, examination of the use of control of work, examination of the general, industrial engineering standards being used and the levels of realization attained. A multidiscipline team was used to conduct these evaluations including engineers, industrial planners, cost accountants et cetera. The general conclusion of each of these examinations was that the costs could be reduced through improved planning and control of the operations.

The range of reduction is a matter of opinion because there was not always a unanimity of agreement by the people discussing the subject. However, typically the range was 30 to 50 percent.

NO CORRELATION BETWEEN PROFITS AND PERFORMANCE

The second point, poor performance not resulting in reduced profits, is based on the specific operational requirement for the hardware which was delivered but did not perform at the required level or the various performance parameters.

In the cases mentioned the performance was reduced in some instances to as low as 25 percent of the requirement. There was no resultant reflection in reduced profit expressed as return. This point is based on investment observation as well as the study made in the electronics industry where delivered hardware consistently performed below the desired level. Unfortunately I am not at liberty to quote the specifics because the performance in some of these systems is classified.

Chairman PROXMIRE. So when you have a contract based on negotiation with the sole source and no further developments involved your conclusion has been that poor performance isn't reflected in lower profits which is the prime discipline, the principal force that most of us recognize in any way, in good cost performance. This is really what puts the pressure on management, isn't it?

Mr. BUESKING. The change process gets involved here when alterations to performance requirements occur for field conditions which may have been overlooked. When test results and actual performance under field operations then are available contracts are altered to reflect the facts of life. These alterations do not always take into account the appropriate adjustments.

Chairman PROXMIRE. Do you think there is any way we can do something about this, because, I think you are right, I don't know if you or one of the other witnesses mentioned in the statement there, I read them all; read both of yours. Of course, I didn't have Mr. Fitzgerald's, but it was mentioned that more important than excessive profits are excessive costs, much more important, and you mentioned that they are 30 to 40 percent in excess of what they should be or they might be under a competitive environment. This is really appalling because when you recognize we are procuring \$43 billion of defense procurement and almost all of it is not advertised competitive bidding and most of it is simply negotiation with a sole source, it is clear that the Federal Government is spending billions of dollars every year more than they should.

Mr. BUESKING. The figures do have some validity. Again I can say there is considerable controversy in substantiating those kinds of statements. There have been two specific programs where this sort of

evaluation took place and there were reductions in this range achieved by the Department and the contractor involved.

Chairman PROXMIRE. On the basis of that, you say there were reductions achieved in the area of 30 to 40 percent of the costs?

Mr. BUESKING. Yes, sir.

REASONS FOR COST INCREASES

Chairman PROXMIRE. Are these because of padded costs, contractor inefficiency, Government inefficiency, what is the reason for it?

Mr. BUESKING. Well, it is difficult to distinguish between padded costs, contractor Government inefficiency. (Costs are generally arrived at collectively by the Government negotiating team and evaluating team and the contractor based on a detailed examination of the work process involved and joint discussion which results in a contract. There are undoubtedly some improved efficiencies achieved in the work layout, the work process. There are also some adjustments in the estimates that were made because we frequently find the basis of estimating target costs may differ quite radically from the basis of assigning resources to perform the work.

INCREASING COMPETITION

Chairman PROXMIRE. This does not stress very emphatically the great importance of putting much more stress on some kind of competition, doesn't it? We had testimony by Prof. Weidenbaum on Monday, the first day of our hearings, that in his view there were sources available in almost all these areas. You didn't have a single source only to produce most of these weapons, the overwhelming majority he said "there were at least two or three or four firms that can do the job, and furthermore, he made the point that in subcontracting, which is such a very important part of this whole thing, when you break down the big missile systems and so forth, here there is far too little competition, we should get a lot more of it. How do we do that?

Mr. BUESKING. Well, I would make two points, Mr. Chairman. The first is I recognize that Professor Weidenbaum as an economist believes the only solution tie is improved competition. I don't think you are going to achieve what I call pure total competition.

Chairman PROXMIRE. He didn't, either.

Mr. BUESKING. There are just not that many competent suppliers.

Chairman PROXMIRE. We want some element of increased competition as perhaps the best way to achieve this.

PROCUREMENT DATA PACKAGES

Mr. BUESKING. There is a possibility of increased competition. This can be done through something that is called reprocurement data packages. On development contracts and initial production runs the Government theoretically receives a package of data which enables them to move the manufacturing process. I don't know of any specific instances where this has been done successfully. The ability of the DOD to move the production process involved basically requires the contractor deliver the specific data which might result in a breakout.

SUBSTITUTES FOR COMPETITION

A second point is the fact that when we do have reduced competition because there are a limited number of firms capable to perform, I think there are a range of actions which might substitute for competition. In addition to the incentives in the form of awards and increased profits, you have to rely on the general efficacy of the planning and control systems the contractor uses to manage. All the planning and all the competition in the world won't help you if the contractor involved does not have the basic ability to plan and control his work. I think there has to be increased emphasis on the general improvement management control systems in use to reflect this. These were designed incrementally in the last 15 or 20 years. There is a major self-help job that could be performed by a number of the major contractors to improve this portion of their management. This would provide some substitute for the competitive aspect.

Chairman PROXMIRE. Would you feel that you can do a much better job in increasing the degree of competition?

Mr. BUESKING. I would say the only possibility of increasing the degree of competition would be the breakout of initial production. I do not see how initially you increase competition because there are just not that many entries in the field.

Chairman PROXMIRE. Of the prime contractor. But in subcontracts you think it could be?

Mr. BUESKING. Yes.

HIGH PROFITS

Chairman PROXMIRE. Then you say the defense profits are equal to or higher than commercial work? On what do you base that conclusion?

Mr. BUESKING. Well, I referred to the two studies, "Risk and the Aerospace Rate of Return," issued by RAND, and Professor Weidenbaum's statement. In my own particular case, I examined a number of major contractors by looking at their capital investment and industrial facilities investments made by the Government. Calculations about working capital were based on the contract formula for progress payments. The result was a conclusion that profits as a return on net worth were over 40 percent.

Chairman PROXMIRE. You came to the conclusion that the profits were somewhere in excess of 40 percent before taxes?

Mr. BUESKING. Yes, sir.

Chairman PROXMIRE. Forty percent of what, sales?

Mr. BUESKING. No, sir; return on net worth.

Chairman PROXMIRE. Net worth?

Mr. BUESKING. Yes, sir.

Chairman PROXMIRE. So that they would be in excess of—20 percent roughly after taxes?

Mr. BUESKING. Yes, sir; in this particular examination.

Chairman PROXMIRE. And this compares to a return of around 12 percent or so in manufacturing and nondefense?

Mr. BUESKING. Yes, sir.

Chairman PROXMIRE. And how comprehensive again was this study of yours?

Mr. BUESKING. This study covered a period from 1958 to 1966, and covered about \$8 billion worth of procurement. The rate of return on sales was average as it has been reported in other studies. It was

in excess of 9 percent but the return on net worth was significantly more.

MINUTEMAN

Chairman PROXMIRE. This is the study in which you indicated one of the two largest programs in DOD there was a profit of 43 percent before taxes.

Mr. BUESKING. Yes.

Chairman PROXMIRE. What program was that?

Mr. BUESKING. That was the Minuteman program.

Chairman PROXMIRE. The Minuteman program?

Mr. BUESKING. Yes, sir.

Chairman PROXMIRE. How big a program was the Minuteman?

Mr. BUESKING. I am not sure of the total size today. At the point in time in 1966 it was around \$8 billion total from initial start. I have no idea of the total size of the program today.

Chairman PROXMIRE. Can you tell us what the rate of profit was on sales in that case?

Mr. BUESKING. Over 9 percent, about 9.7.

Chairman PROXMIRE. 9.7, but it was a 43 percent before taxes on net worth and therefore probably 25 percent in that case. The mix of contractor investment and Government investment was about 52-48.

Chairman PROXMIRE. In this case do you have any knowledge as to whether or not this was renegotiated?

Mr. BUESKING. I have no knowledge of that; no, sir. I have no knowledge of renegotiation.

Chairman PROXMIRE. There are so many exceptions in renegotiation and so many ways in which this can be handled so it wouldn't surprise me if it wasn't renegotiated. I would like to find that out. Can you find that out for the record or would you suggest we try to get that from the Defense Department?

Mr. BUESKING. I would suggest the Defense Department. Effective the first of November I am in retired status.

Chairman PROXMIRE. All right.

"SHOULD COST" APPROACH

You say the "should cost" approach was used in connection with a major Navy engine contract? What contract was that?

Mr. BUESKING. That was the TF-30 engine for the F-111 program.

Chairman PROXMIRE. How big a program was that?

Mr. BUESKING. I am not specifically knowledgeable as to the exact size, but I know it is in excess of \$1 billion.

Chairman PROXMIRE. In excess of \$1 billion?

Mr. BUESKING. Yes, sir.

Chairman PROXMIRE. What was the result of this study that was made?

Mr. BUESKING. This was reported in the Wall Street Journal, the New York Times, and a number of other periodicals at the time the negotiations were in process. As I understand it, well in excess of \$100 million was reduced from the production costs involved in this particular contract.

Chairman PROXMIRE. Reduced?

Mr. BUESKING. Yes.

Chairman PROXMIRE. One very important point that I don't fully understand, you say that performance has little correlation to the product? You mean high profits are correlated with poor performance. You partly answered this.

Mr. BUESKING. I can't judge the value of high. Speaking generally, the particular study I referred to in electronic systems, as well as some of my own observations, indicated that degraded performance was not rewarded with reduced profits or any particular adjustments. Profits were not higher or lower and no particular deviation observed.

MOST CONTRACTS NEGOTIATED

Chairman PROXMIRE. Mr. Fisher, you point out that as long as contracts are awarded competitively, costs and prices take care of themselves. The problem is determining target values for contracts negotiated in a noncompetitive environment. You go on to say that this problem is significant because most weapons systems production and support contracts are presently negotiated without any price competition.

I have two questions in connection with this. No. 1, do you know or can you provide the subcommittee with data showing most weapons systems production and support contracts are negotiated without any competition? What are the dollar amounts reached in the past 3 years; do you have anything like that in your estimate?

Mr. FISHER. Mr. Chairman, I am sure that data are available and would be glad to provide it for the record. The only data that I have available with me refer to Air Force procurement for fiscal year 1967, and indicate that about 25 percent of the total dollar amount spent for major weapons systems and related hard goods was awarded under price competition. The remaining 75 percent was awarded using other techniques.

Chairman PROXMIRE. We are talking about weapons systems production and you say it is about 25-75. We have overall figures that are somewhat similar but—

Mr. FISHER. The figures would be different for the Department of Defense and, as I say, I would be glad to submit them.

Chairman PROXMIRE. What has been the trend over the past 3 years?

Mr. FISHER. Competition has not been increasing.

Chairman PROXMIRE. Has it been decreasing? We found it has been decreasing overall; it has been decreasing for weapons systems.

Mr. FISHER. I don't have that information at my fingertips.

(Mr. Fisher later supplied the following:)

While the DOD does not provide data indicating the extent of competition for weapon system and follow-on contracts, the data is available for Air Force procurements. Since the Air Force is the major purchaser of weapon systems, however, comparison of these figures is instructive. The two accompanying Tables indicate the total dollar amounts spent by the Air Force on complete systems and on major components and accessories during fiscal years 1963-1966.

As is readily apparent, only a small portion of the total dollar amount was obligated under price competition. Moreover, it is not clear whether contracts awarded under the category "negotiated price competition" should be classified as competitive or as negotiated contracts, since prices for many of these contracts are subject to considerable negotiation and adjustment. Nonetheless, whether or not this category is included under competitive procurement, by far the majority of Air Force procurement dollars obligated for complete systems and major components and accessories is accounted for by negotiated contracts.

Another significant point illustrated by these data is the importance of follow-on procurement. The largest single category for both systems and major components consists of contracts that were a follow-on to some previous contract. These contracts are awarded on a sole-source basis without competition from alternative suppliers.

AIR FORCE PROCUREMENT OF MAJOR COMPONENTS AND ACCESSORIES, FISCAL YEARS 1963-66

[In millions of dollars]

Method of determining contract price	Fiscal year 1963		Fiscal year 1964		Fiscal year 1965		Fiscal year 1966	
	Amount	Per cent						
Negotiated contracts.....	836.7	79.9	635.5	84.9	399.2	83.3	962.7	80.1
Design and technical competition...	6.9	0.7	3.2	0.4	3.5	0.3	13.8	1.1
Follow-on after competition.....	700.2	66.8	563.9	75.4	783.1	72.6	709.0	59.0
Sole source.....	129.6	12.4	68.4	9.1	112.6	10.4	239.9	20.0
Price competition.....	211.7	20.1	112.9	15.1	179.4	16.7	238.5	19.8
Formally advertised.....	55.0	5.2	52.3	7.0	70.7	6.6	80.6	6.7
Negotiated price competition.....	156.7	14.9	60.6	8.1	108.9	10.1	157.9	13.1
Total.....	1,048.4	100.0	748.3	100.0	1,078.7	100.0	1,201.3	100.0

Note: Detail may not sum due to rounding.

Source: G. L. Brunner and G. R. Hall, Air Force Procurement Practices, 1964-66, RM-5439-PR, the RAND Corp., April 1968.

AIR FORCE PROCUREMENT OF COMPLETE SYSTEMS, FISCAL YEARS 1963-66

[In millions of dollars]

Method of determining contract price	Fiscal year 1963		Fiscal year 1964		Fiscal year 1965		Fiscal year 1966	
	Amount	Percent	Amount	Percent	Amount	Percent	Amount	Percent
Negotiated contracts.....	1,654.5	92.5	1,499.1	83.9	1,398.5	79.7	1,841.0	97.6
Design and technical competition...	52.9	3.0	79.0	4.4	28.7	1.6	0.7	(¹)
Follow-on after competition.....	1,493.0	83.4	1,397.9	78.2	1,351.4	77.1	1,796.2	95.2
Sole source.....	108.6	6.1	22.2	1.2	18.4	1.1	44.1	2.3
Price competition.....	136.3	7.6	288.5	16.1	355.2	20.3	45.1	2.4
Formally advertised.....	0.1	(¹)	0	(¹)	1.5	0.1	0.6	(¹)
Negotiated price competition.....	136.2	7.6	288.5	16.1	353.7	20.2	44.5	2.4
Total.....	1,790.7	100.0	1,787.6	100.0	1,753.7	100.0	1,886.1	100.0

¹ Less than 0.05 percent.

Note: Detail may not sum due to rounding.

Source: G. L. Brunner and G. R. Hall, Air Force Procurement Practices, 1964-66, RN-5439-PR, the RAND Corp., April 1968.

COST DETERMINATION FOR NEGOTIATED CONTRACTS

Chairman PROXMIRE. Why is it so difficult to determine costs and prices for negotiated contracts?

Mr. FISHER. As Mr. Malloy pointed out yesterday, it is customary practice for the Department of Defense to award most of the production and follow-on contracts for major weapon systems to the original developer without giving other potential suppliers a chance to compete. This places the DOD at a disadvantage, since there is no other way of obtaining reliable price information about what these systems should cost. In these cases the DOD must rely on contractor-furnished cost data to determine a cost target. Two problems arise in this connection. First, the DOD must ascertain the accuracy of the contractor's cost estimate. Second, if there is any question about the con-

tractor's estimate the DOD is forced to negotiate a target that is acceptable to both parties. Since there is no threat of competition from other suppliers, contractors are motivated to overstate their cost estimates and to defend them vigorously during the negotiation procedure and, as a result, it is extremely difficult for the DOD to determine target costs that provide the proper efficiency incentives.

NEED FOR PROFITS STUDY

Chairman PROXMIRE. Would you agree with us that it would be very helpful if we had some authoritative, comprehensive study of what the contractors' profits were? We don't have any now. GAO testified that none was available, and it is true, it would be very difficult to get it, I know, it is not the kind of thing that you just go out and expect to have in a week. You have to have a competent agency like the GAO make a very comprehensive study for a period of some time to come up with it but it would seem to me that this would be a very helpful thing.

Mr. FISHER. Yes; you brought this point out yesterday and I certainly agree. But as you say it would be very difficult to get the required information from contractors. Basically this is what the LMI study attempted to do.

Chairman PROXMIRE. You don't see any technological reason why it would be impossible?

Mr. FISHER. No; I don't.

UNIFORM ACCOUNTING STANDARDS

Chairman PROXMIRE. It could be determined. This is becoming more and more complicated especially when we have firms, and we have many of them which do a great deal of nondefense work. They have to allocate their costs. Wouldn't it be most helpful to have uniform accounting standards apply?

Mr. FISHER. I believe this is one of the current trends in the Department of Defense. There is presently some concern among DOD procurement officials over adopting uniform accounting systems.

Chairman PROXMIRE. That is the trouble, there is a lot of concern, otherwise called opposition, and until we can get those standards it is going to be very, very hard for us to determine what the profits are, reliably and consistently. It seems to be everybody is sure we can technically secure that information and heaven knows there is nothing classified about it.

Would you like to comment?

Mr. BUESKING. I would like to make a comment, Mr. Chairman, about common accounting standards. I would be the first to state we cannot go to a standard accounting system. But I certainly think we can express some capabilities for accounting systems like determination of unit costs as a first step. I have yet to see a contractor's accounting system in major programs that can adequately determine the unit cost of hardware, that would be sort of a first step.

Chairman PROXMIRE. Why couldn't you have something like the kind of accounting standards you have with the Internal Revenue Service? After all, they have to apply some kind of uniform system or at least uniform standards. If they didn't they would have a ter-

rific inequity among taxpayers and they insist upon it. So I don't see why the Defense Department couldn't insist upon the same kind of reporting, the same kind of uniformity, at least.

Mr. BUESKING. I think that this is a task of both the Department of Defense and the accounting profession generally need to face up to, to develop some standard about the capabilities the accounting system should be expected to have.

CONTRACTORS OVERSTATE COSTS

Chairman PROXMIRE. Mr. Fisher, what do you mean when you say that in order to avoid profits that would be politically prohibitive, contractors may be forced to overstate costs?

Mr. FISHER. Perhaps that was an unfortunate choice of terms.

Chairman PROXMIRE. No; it sounds pretty realistic. It is a good point. [Laughter.]

Mr. FISHER. One of the basic reasons why contractors are motivated to overstate target costs is that incentive contracts increase the risk of financial loss.

You can imagine a situation where a contractor is forced into accepting an incentive contract, perhaps a fixed-price-incentive contract with a high sharing rate, for development of a sophisticated weapon system. In this case the contractor may be subjected to a great deal of financial uncertainty. The DOD is reluctant to award contracts with profit rates in excess of 10 to 15 percent, however, and this may not be sufficient to offset the level of risk that the contractor must bear. One way the contractor could reduce the uncertainty and protect himself against a major financial disaster would be to bargain for a larger target cost.

Chairman PROXMIRE. How much uncertainty really is there? There is a lot of uncertainty when you are dealing on a commercial basis or private basis, you can lose your shirt. But here where you have a situation just described as having with the C-5A you have a situation where the Government is going to bail you out, you have a situation where if your costs increase Uncle Sam will take care of it with unlimited bankroll, it seems to me the uncertainty ought to be less.

Mr. FISHER. The degree of uncertainty certainly depends on the type of contract and on the particular characteristics of the program.

Chairman PROXMIRE. Let me just interrupt to say, certainly a man can lose everything when he is dealing with the Government and competes, and specifies he is going to produce a certain amount for a certain price. If his estimate is wrong, he is just out of luck. But where you have a negotiated price with a sole source under many contracts negotiated there isn't much of a risk, is there?

Mr. FISHER. Again, that depends on the particular situation. The risk in a CPI contract, for example, is not much greater than a CPFF contract, but as we move toward fixed-price contracts the risk of financial loss increases.

Chairman PROXMIRE. Give us the full titles.

Mr. FISHER. CPI refers to the cost-plus-incentive contract; CPFF would be cost plus fixed fee. These contracts are rather similar with respect to financial risk, but as we move toward the fixed-price-incentive contracts the level of risk increases. This is one of the reasons contractors may bargain for larger target costs.

Chairman PROXMIRE. When you said politically prohibitive, you were thinking, I take it, that profit at a certain level is, from a public relations standpoint, just unacceptable and you might get members of Congress and others protesting and passing legislation that might be difficult in the future—that kind of thing—is that what you had in mind?

Mr. FISHER. I believe Congress would question negotiated profit rates of 40 or 50 percent on defense contracts. And that may be the level that would be required if the DOD were to force contractors to accept fixed price incentive contracts for very technical and highly uncertain projects.

MINUTEMAN

Chairman PROXMIRE. Well, now, how about your comment on the Minuteman situation which Mr. Buesking just described? He pointed out there was a 43 percent profit here before taxes. Would you say that kind of a profit might very well be appropriate?

Mr. FISHER. It might be. It is certainly difficult to evaluate what factors led to that rate of profit being achieved. If it turns out that it was achieved because the contractor was successful in negotiating larger targets or because of the difficulty in estimating the target cost, then it is completely unjustified. But it could also have resulted from very efficient performance or as compensation for an extremely risky contract.

Chairman PROXMIRE. Let me ask you, Mr. Buesking, was there a high degree of risk involved in this?

Mr. BUESKING. I have to say there is a mix of risk. I would like to say that the 43 percent is not excessive or extremely high. I consider that just a different measure than the 9.7 percent on sales. It is a more realistic measure of its true performance.

Chairman PROXMIRE. I think a lot of people would consider that excessive and extremely high unless you can show there was an extraordinary risk involved.

Mr. BUESKING. Risk was involved.

Chairman PROXMIRE. Was there, was this a fixed price commitment on which they could have lost a great deal?

Mr. BUESKING. There were some of these contracts where they could have lost a great deal.

Chairman PROXMIRE. How much?

Mr. BUESKING. The spectrum ranged from cost-plus-fixed fees in the first early stages of the Minuteman to fixed-price-incentive fees in the later stages. As to the mix of these, I don't have the data available to me any more, how many were high risk and how much were low risk, et cetera. In the Minuteman II development particularly, I think there were some risks taken by the contractors.

TRUTH-IN-PROFITS

Chairman PROXMIRE. I think a lot of this is psychology that I am getting at. This hearing is a great deal like the trouble we have with truth in lending, a bill we had before the Senate Banking and Currency Committee for 7 years before we finally passed it, and business people felt if you ever told the public they were paying 18 percent per year why you would have a revolution on your hands. Well, we are

going to tell them that and, as a matter of fact, Massachusetts has been doing that now for more than a year. You have no problem there. People know it and they are able to make a judgment on the basis of getting the facts.

I feel if this information is revealed, sure, it will have to be justified and explained, but I don't think the public and the Members of the Congress are that stupid or that reluctant to accept facts.

I think that if you have all the information you will have a much more sophisticated understanding and support in the public generally and in the Congress.

Mr. Fitzgerald, do you have an observation on this?

Mr. FITZGERALD. I quite agree. I think the full disclosure would provide for early revelation of difficulties before they grew so large that they became embarrassing, and I see no reason in the world that facts such as you have just discussed should not be made public. I don't understand the problem really. I would urge that to the extent they can be made public, they are made public.

Chairman PROXMIRE. Well, it is very helpful. It certainly expresses my view.

INCENTIVE CONTRACTS FAIL TO REDUCE COSTS

Mr. Fisher, what are your overall conclusions about incentive contracts? Are they working as originally hoped? Have they resulted in lower costs to the Government?

Mr. FISHER. All of the available evidence suggests that incentive contracts are not accomplishing their intended goal of increased efficiency or reduced costs. It appears that the cost savings usually attributed to these contracts may be exaggerated. It is important to point out that, as Mr. Malloy stated yesterday, there is no real way of comparing the total cost of a weapon system under an incentive contract with what it might have been under some other type of contract. We really don't have any numbers that will allow us to make that kind of comparison.

All we can say is that the efficiency incentives supposedly provided by these contracts don't seem to be operating. I also want to stress that there are some major advantages with incentive contracts.

Chairman PROXMIRE. Are you saying although costs are higher under these incentive contracts for all we know they would be even higher if we had some other kind of system of procurement?

Mr. FISHER. I am not saying that costs are higher under incentive contracts. What I am saying is that it doesn't appear that incentive contracts motivate contractors to perform more efficiently or control costs more closely.

Chairman PROXMIRE. Then what good are they?

Mr. FISHER. There are some other advantages with these contracts. One is that they make it clear to both contractors and contracting officers that the Defense Department is concerned with costs.

Chairman PROXMIRE. No matter how concerned they think the Pentagon is if there are no lowered costs what good are they?

Mr. FISHER. In the cost sense, they may not be doing a lot of good.

Chairman PROXMIRE. Isn't that their purpose, the cost sense?

Mr. FISHER. That is one of their purposes; perhaps the major purpose.

Chairman PROXMIRE. What is the other purpose, to get the contractors to bid when they otherwise wouldn't?

Mr. FISHER. I think we ought to state it differently and say that their major purpose is to provide some of the incentives that are missing when we don't have a competitive procurement environment. That is why I made a statement at one point that incentive contracts are often regarded as a substitute for competition.

Chairman PROXMIRE. Yes, but the purpose of a competitive environment is to get your costs down.

Mr. FISHER. True.

Chairman PROXMIRE. And if it is not getting your costs down it is not doing the job.

Mr. FISHER. True.

CONTRACT CHANGE ORDERS

Chairman PROXMIRE. You mentioned numerous costly changes associated with incentive contracts. How numerous and how costly?

Mr. FISHER. Again, this depends on the type of contract. Supplemental changes are much larger with cost-plus-incentive-fee contracts than they are with the fixed-price-incentive contracts; this, again, is because the cost-plus-incentive-fee contracts are very similar to cost-plus-fixed-fee contracts. They are used primarily for research and development projects where there is a great deal of technical uncertainty.

Fixed-price-incentive contracts are usually used later on in the program when there is less uncertainty and fewer changes and modifications. Table 7 in my prepared statement compares average supplemental changes by type of contract.

Chairman PROXMIRE. Mr. Buesking, do you have any comments on that?

Mr. BUESKING. I might add one thing, Mr. Chairman. In the particular program I was involved in, I could not observe much difference between the contract form and the change rate. Although we did shift to fixed-price-incentive type contracts, we still were involved in very significant changes because of the complexity of the system. Once you engage in an extensive change, most of the incentives in the contract disappear and you are in fact operating on a cost-plus-incentive-fee basis even though your contract form is expressed as fixed-price incentive. Once the original agreement is altered, original baselines involving the technical, cost and schedule parameters are gone, and then you are in an entirely different kind of environment.

Chairman PROXMIRE. Is there any suggestion you have as to what we can do about that?

Mr. BUESKING. The problem of change is a very difficult one. For configuration change, that is the physical face of the hardware, there are a number of procedures that assist with this process, the particular function involved is called configuration management, and it does attempt to control the rate of change on the hardware. We are probably not quite as effective as controlling the rate of soft task changes not associated with the hardware in production. Formalities to examine and determine the worth of these sort of changes are very nominal.

Chairman PROXMIRE. Mr. Fitzgerald?

Mr. FITZGERALD. I would agree generally with Mr. Buesking's observation that the incidence of change has been more or less unrelated to the type of contract. I think there have been notable exceptions to this, examples of programs in which the authorization to change was lodged at a very high level, and this seems to inhibit changes.

But in general, the change incidence seems to be at least as great under fixed-price-incentive contracts as under cost-plus contracts.

I think the problem is compounded by the difficulty of arriving at "should cost" figures for changes, all of which are negotiated in a sole-source environment. I personally believe that you can never reduce changes to zero and I think it is probably not desirable to do so. These systems are in process for many years, in the process of development, production, and deployment, and I think it is absolutely essential that we incorporate the latest improvement, if it can be incorporated, in the systems as they are being developed and deployed.

On the other hand, it is extremely difficult to arrive at the "should cost" figure for changes. I would say that it is several times as difficult as going through the same process for initial procurement.

So, we badly need to improve our capabilities in this area. I would say that the twin processes of better definition and better negotiation of changes can bring about very dramatic results.

WAYS TO INCREASE COMPETITION

Chairman PROXMIRE. Mr. Fisher, you say, and I agree, that competition needs to be utilized more extensively in weapons systems procurement. How can we get more competition? You say that in your statement.

Mr. FISHER. There are several procurement strategies that can be utilized to increase the extent of competition in weapon system procurement. These include the total package procurement contract already discussed, use of competing development programs, licensing and separation of program stages, and the second sourcing technique used by the Navy.

TOTAL PACKAGE PROCUREMENT CONTRACTS

Chairman PROXMIRE. The total package procurement program, it seems to me, on the basis of testimony we have had may actually reduce competition, it certainly reduces it. Once you make a commitment to a total package to go all the way through it is hard to shift gears and go to an alternative source and to a more efficient source.

Mr. FISHER. The total package technique is most useful in situations where this sort of uncertainty can be resolved early in the program so that a contract for the entire system can be awarded at the outset. That is why it is particularly well suited to state of the art procurement, to situations involving little uncertainty.

Chairman PROXMIRE. You see, what I am getting at is more and more people say that the thing to do is break out this procurement where you can in every way you can, one way being to try to get competition at a later stage, another way trying to get more competition in the subcontracting phase.

Mr. FISHER. The point that I am trying to make is that there are a number of possible alternatives for increasing competition in weapon system procurement.

Chairman PROXMIRE. I see.

Mr. FISHER. Break-out and competition among alternative producers at a later stage depends again on the particular program. In some programs this approach is quite suitable, while in others it is impossible to utilize. The way that competition can be introduced and the particular strategy that may be employed depends on characteristics of the system being procured.

IMPROVING COST ESTIMATION

Chairman PROXMIRE. You also say we need better cost analysis and estimating techniques. I agree. I think these hearings have demonstrated that. How do we get them?

Mr. FISHER. There are two major problems with using cost estimation to determine target costs. First, these estimates are based on historical cost data reflecting the Defense Department's past procurement experience. Since most of this data consists of costs generated under CPFF contracts awarded without any meaningful price competition, the resulting cost estimates are not comparable to the costs that would result from real price competition.

Even if the data base did consist of competitively determined contracts, there is still a problem with the estimating methodology. Most of the techniques that are presently used average the Defense Department's cost experience over a number of contracts. Since contractors vary in efficiency and in their ability to perform, cost estimation provides an average cost estimate and, as you know, that may be considerably higher than the minimum cost. In fact, some of the available evidence for competitive procurements suggests that the variation in bid prices may be as much as 50 percent or higher.

Consequently, an estimated target cost could not provide much of an efficiency incentive for the very efficient producers, although it might provide some incentives for the less efficient producers. In order to improve cost estimation, we need a better data base, one that reflects competitively determined costs, and we also need to improve cost estimating methodology.

REVISION OF WEIGHTED GUIDELINES FOR PROFITS

Chairman PROXMIRE. Just this morning we heard, Mr. Fitzgerald, something I would like to have your observation on. Is it true the Pentagon is now considering a revision of the weighted guidelines for profits?

Mr. FITZGERALD. I have no personal knowledge of that, Mr. Chairman. I have read it in the trade journals, and so on. I assume it is true.

Chairman PROXMIRE. You don't know whether or not Logistics Management Institute has recommended this?

Mr. FITZGERALD. I do not know. I am sure we could get the answer quickly, though.

Chairman PROXMIRE. You have no knowledge as to whether or not the new guidelines would result in higher profits?

Mr. FITZGERALD. No; I do not. I wouldn't want to prejudge it.

Chairman PROXMIRE. If you get those answers and make them available to us for the record, we would appreciate it.

Mr. FITZGERALD. Yes, sir.

(In response to the foregoing, the material which follows was subsequently furnished:)

PROPOSED REVISIONS IN WEIGHTED GUIDELINES¹

As a part of its continuing effort to update the Government's procurement practices, the Department of Defense initiated the Weighted Guidelines (WGL) procedures for developing prenegotiation profit objectives in 1964. The WGL policy introduced a rational and uniform methodology which provided for the first time a quantitative basis for arriving at the Government's profit estimates.

Since the adoption of the WGL, close management attention has been given to this segment of DoD's procurement policy to assure that the procedure is being correctly implemented, and that areas for further improvement are identified and investigated.

During the past year a number of suggestions have been made which would strengthen the incentive for contractors to acquire optimum amounts of facilities. The intent of the proposed revisions has been neither to increase nor decrease the overall profit dollars paid to contractors. Rather, the focus has been to restructure the WGL to give greater recognition to capital employed in developing the prenegotiation profit position of the contracting office.

A special ASPR subcommittee has been created to research this area and recommend the alternatives which can best achieve this desirable goal. In addition, the Industry Advisory Council (IAC) is studying proposed alternatives. The attached background paper and proposal was discussed at the October meeting of the IAC.

IAC AGENDA ITEM 3C

DEFENSE CONTRACT PROFITS

The area of concern of this presentation is DoD profit objectives used as a basis for negotiating contracts where cost analysis applies. This area has been a subject of concern since 1963, when the first effort began to develop a uniform means of determining profit objectives. The initial result was the current ASPR Weighted Guidelines. Subsequent to initiation of these guidelines, LMI Report 66-12, *Incentives for Contractor Acquisition of Facilities*, indicated several problems with them. In turn, a new weighted guidelines concept has been developed and tested. This new concept is the basis for the proposal herein.

The framework for evaluation of the current guidelines and developing this proposal consisted of an evaluation of both against the desired objectives of DoD's profit structure. Specifically, a sound structure should motivate contractors to (1) assume risks, (2) furnish efficient facilities, (3) apply capable talent and (4) employ resources as necessary for optimum cost, quality, and schedule performance.

The current weighted guidelines are primarily cost-based. The only exception is the source of resources factor, which only considers the relative proportions of contractor versus government-furnished facilities and neglects the total amount of the contractor's facilities investment.

This cost-based profit objective structure produces a business decision process which operates in reverse of typical commercial practice. In effect, DoD's narrow range of profit objectives requires that contractors manage their ratio of cost to capital employed to produce a competitive return on capital. In commercial practice a return on capital within a narrow range is attained for a variety of efficient processes by varying profit on cost over a wide range. DoD's profit structure, however, results in wide range of profit on capital. For example, a preliminary sample of contracts with 6% spread of profit on cost revealed a range of profit on capital more than ten times this large.

¹ Discussion paper prepared by Office, Secretary of Defense, for use at the October 1968 meeting of Industry Advisory Council.

Looked at another way, a cost-based profit structure can bias contractors toward labor intensive processes. First, DoD's narrow range of profit on costs requires that the cost to capital ratio must be managed to attain at least a marginally competitive return on capital, regardless of the type of process. Secondly, there is little incentive to provide more than the absolutely essential facilities capital since a cost-based profit structure reduces profits if cost reducing capital investments are made. One indication of this is the different cost to capital ratios of defense contractors compared to their most similar durable goods counterparts. This comparison indicates that 68% of the largest and most government-oriented contractors exhibit a cost to capital employed ratio greater than 2 whereas 87% of their durable goods counterparts have a ratio less than 2.

One clear conclusion from these comparisons and consideration of the motivational effect of a cost-based profit structure is that our current system penalizes cost reduction and equipment modernization. For example, the combination of decreased cost-based profit and increased capital employed associated with a cost reduction investment yields a negative return on investment to the contractor. This is sufficient cause to prevent contractors from making these types of investments unless they are unavoidable from the standpoint of increasing capacity or performing a particular task.

Any attempt to overcome these shortcomings under a cost-based profit objective structure necessitates identifying, recognizing, and paying for capital employed. Consequently, it is the intention of the proposal to accomplish this within the profit objective scheme as soon as possible.

The first step contemplated by the proposal is identifying the capital employed under future contracts. This has been tested and found to be feasible with currently available accounting data and to be not overly complicated to do. The second step is to firm up a method of recognizing and paying for capital allocated to contracts within DOD's profit objective determination scheme.

To accomplish this latter step, we propose to combine 70% of the current cost-based objective with reimbursement for facilities and operating capital at the annual rates of 15% and 3%, respectively. These percentages are constructed to reproduce 30% of the 5-year average return on capital of 222 most nearly comparable durable goods firms (25.6% before interest and taxes), adjusted by unallowables (+3%) to yield a standard comparable to our negotiated profit objective. Applied to the average defense contractor, this proposal nearly reproduces the result of the current cost-based structure, with the difference being a slight profit-objective increase.

The major objective of the proposal, however, is to develop a structure whereby cost reduction projects are not penalized but, rather, result in a more reasonable sharing of their benefits by the contractor. Comparing this proposal with the current cost-based structure indicates that the previously negative return on a cost reduction investment becomes positive, albeit not phenomenally so, under the proposal.

Therefore, the proposal is a modest but yet significant step toward encouraging and paying for capital which reduces costs and toward ensuring a competitive profit for the optimum amount of capital required. In order to ensure this, DOD would test this proposal on a selective basis. Our approach would be to select several forthcoming contracts at a few major procurement offices. Capital employed data would be solicited with the RFP, and a prenegotiation profit objective would be determined under the proposed and the current weighted guidelines. Lastly, to insure proper application, situations which revealed significantly different objectives under each structure would be brought forward for Secretarial-level review prior to negotiations.

DEFENSE CONTRACT PROFITS (TABLES)

Negotiated profit history

Pre-1963-----	General ASPR policy.
1963-1964-----	Developed and initiated WGL.
September 1967-----	LMI Report 66-12.
1967 to October 1968-----	Develop and test new WGL concept.

Aim of profit structure

Defense needs sound basis to determine profit.

Must motivate contractors to :

Assume risks.

Furnish efficient facilities.

Apply capable talent to the contract task

Employ resources as necessary for optimum cost, quality, and schedule.

Current WGL

On cost elements :	Percent
Direct materials.....	1 to 5
Engineering labor.....	9 to 15
Engineering overhead.....	6 to 9
Manufacturing labor.....	5 to 9
Manufacturing overhead.....	4 to 7
General and administrative.....	6 to 8
On total costs :	
Contractor risk.....	0 to 7
Contractor performance.....	-2 to +2
Source of resources.....	-2 to 0
Other	0 to 2

Defense versus commercial practice

Commercial :

Attainable profit rate on capital.

Cost to capital rate : Profit on cost.

Result :

Narrow range : Profit on capital.

Wide range : Profit on cost.

Defense :

Attainable profit rate on cost.

Cost to capital rate : Profit on capital.

Result :

Narrow range : Profit on cost.

Wide range : Profit on capital.

CAPITAL TURNOVER

[Costs/capital]

Costs/capital:	Cumulative percent	
	Durable goods commercial ¹	Defense contractors ²
0.5.....	3	0
1 to 1.4.....	25	5
1.5.....	62	16
2.....	87	32
2.5.....	91	70
3.....	96	81
3.5.....	98	86
4.....	99	89
4.5.....		
5.....		92
5.5.....		95
6.....	100	100

¹222 durable goods commercial companies.

²37 defense contractors, more than 50 percent Government.

Deficiencies in current system

Not recognizing capital in profit structure, by omission :

Penalizes cost reduction.

Discourages equipment modernization.

FOR EXAMPLE—PENALTY OF REDUCING COSTS

[Dollar amounts in millions]

	Cost reduction investment		
	Before	After	Change
Allowable costs	\$100	\$90	-\$10
Profit on costs ¹ (percent)	10	10	-----
Dollar profit	\$10	\$9	-\$1
Capital employed ²	\$30	\$50	+\$20
Profit on capital (percent)	33	18	-5

¹ Lower cost decreases profit.² Higher capital decreases profit on capital.

Therefore: Correcting these shortcomings contemplates the need to *identify, recognize and pay* for capital employed.

Intentions: Introduce capital employed in profit objective determination as soon as possible.

Immediate steps

Allocate capital to future contract proposals.

Data currently available.

Allocation factors can be readily developed.

Applying to contracts is not complicated.

Firm up methods of developing profit objective from capital allocations.

DoD proposal

Cost-based 70 percent: 70 percent \times current WGL objective.

Capital-based 30 percent:

15 percent per year \times facilities capital.

3 percent per year \times operating capital.

Proposed WGL profit objective.

Where 30 percent of WGL: 15 percent + 3 percent is equivalent to 30 percent \times 5-year average durables (25.6 percent) profit/capital + unallowables (3 percent).

APPLICATION EXAMPLE

[Dollar amounts in millions]

	Cost	Profit on cost (percent)	Profit objective
Present	\$100	10	\$10
Proposed:			
70 percent times present profit objective (\$10,000,000)			\$7
15 percent per year times allocated facilities (\$18,000,000)			2.7
3 percent per year times operating capital (\$12,000,000)3
Total			\$10.0
[Present]			
		Profit on cost	Profit on capital
Comparison:			
Present		10	33
Proposed		10	33

FOR EXAMPLE—PENALTY OF REDUCING COSTS

[Dollar amounts in millions]

	Cost reduction investment		
	Before	After	Change
Allowable costs.....	\$100	\$90	-\$10
Profit on costs ¹ (percent).....	10	10	-----
Dollar profit.....	\$10	\$9	-\$1
Capital employed ²	\$30	\$50	+\$20
Profit on capital ² (percent).....	33	18	-5

¹ Lower cost decreases profit.² Higher capital decreases profit on capital.FOR EXAMPLE: NEW EFFECT OF REDUCING COSTS¹

[Dollar amounts in millions]

	Cost reduction investment		
	Before	After	Change
Allowable costs.....	\$100	\$90	-\$10
70 percent times present profit objective.....	7.0	6.3	-.7
15 percent times facilities (\$18,000,000 and \$38,000,000).....	2.7	5.7	+3.0
3 percent times operating capital (\$12,000,000).....	.3	.3	-----
Dollar profit.....	10	12.4	+2.4
Facilities capital.....	18	38	+20
Operating capital.....	12	12	-----
Capital employed.....	30	50	+20
Profit on capital (percent).....	33	25	-8

¹ Compared with current WGL.*Allocating capital*

Facilities:

Net book value of fixed assets, including land.

Based on latest financial statement.

Updated for changes planned during contracts.

Allocated to contract via depreciation.

Estimated operating capital:

Total capital less net book value of facilities.

Estimate: Inventories + receivables = payables.

Allocated to contract in proportion to costs.

Benefits of the proposal

Important step toward encouraging and paying for capital which reduces costs.

Important step toward ensuring a competitive profit for the optimum capital requirements.

Planned approach

Select major procurement offices.

Select appropriate contracts with criteria.

Collect capital data.

Compute profit objective on current and proposed system.

Set thresholds for secretarial-level review.

Include intended use of data in RFP.

Questions and issues

Can one formula be adopted for all DOD negotiated contracts?

Alternative solutions?

Optimum balance between cost-based and capital-based profit?

Competitive profit on capital standard for firms doing business with DOD?

Should long-term leases be capitalized and added to the investment base?

Chairman PROXMIRE. We will furnish you with the questions at the end of the hearing.

Mr. FITZGERALD. All right.

Chairman PROXMIRE. I would like to ask any of you gentlemen to comment. I have just three final questions.

LAXITY IN CONTROL OF COSTS AND PROFITS

No. 1: These hearings seem to have demonstrated that there is a considerable laxity in the control of costs and profits in our defense procurement program. Does there seem to you to be a problem of loose costs and loose discipline?

Mr. Fitzgerald, do you want to start with that?

Mr. FITZGERALD. While it is probably dangerous to generalize, I believe that we have found many such instances in which management discipline and work habits were poorer than we would like to see them, and I think this is probably due to the phenomenon that Mr. Buesking referred to earlier, the emphasis in periods past, particularly during the so-called missile gap days, in which we were driving ahead full speed to field new weapons with primary emphasis on schedule and secondary emphasis on technical capability of weapons, and with a readiness to pay whatever the costs happened to be. I think that we probably are still paying the bill for this sort of attitude.

Now, whether the bill is worth it or not, I do not know—no one can say.

Chairman PROXMIRE. Just offhand, it would seem that the Vietnam war has been given as the excuse often for slipshod methods and higher costs. And yet, in the first place it is confined to a relatively, compared to the Korean War and World War II, small amount of total procurement, and, No. 2, it is not entirely but very largely, small arms, ammunition, rifles, helicopters, and so on, where you don't have some of these very complex problems you have with missile systems, with the super new aircraft, and so on. It would seem that now we should be making progress rather than retrogressing as we seem to be doing.

Mr. FITZGERALD. I think it is possible to make progress, and my major recommendation would be that we consider all the cost control devices and stimulants that we have available to us in combination rather than attempting to achieve satisfactory control through using only one technique at a time. I think that all of us in the business have been guilty of overconcentration on one technique at a time.

You may recall in my earlier discussions I pointed out that contractual incentives are certainly a preferred method for achieving these goals, but there are times when they do not work, they fail, and we must then be prepared to step in with other devices. I think that if we can learn to use the devices of better cost estimating, and better on-going cost control in conjunction with improved contracts, we will be on the road to some very substantial improvement.

Without question, we have been guilty depending on one or another of these kinds of approaches in the past. I can remember a time when we were placing a great deal of dependence on reporting schemes. They didn't work either. I think it is clear that incentive contracts have not achieved everything that we had hoped for them.

On the other hand, I would not advocate a return to cost-plus contracting. I believe that we have made some substantial improvements in getting contractors to accept fixed-price-incentive contracts where they would not do so previously. I think we must be practical and recognize that the contractual incentive is often inadequate or perhaps even inappropriate, and we have got to be ready with other means as the particular situation requires it.

Chairman PROXMIRE. Mr. Buesking, you just left the Pentagon in August. Will you give us your view on this?

Mr. BUESKING. Yes, sir.

The general point I would make is that we have not shifted our emphasis appropriately to the cost portion of this three-way triangle which includes technical performance and schedule. I have a personal observation that the lack of discipline in good tight budgeting, and good costing techniques has spilled over into other management disciplines affecting our work force.

I think the general lack of tight cost controls has possibly influenced our total competitive position in world markets.

As present ways of doing work for the Department of Defense spill over into commercial endeavors, and there are a great many spin-offs to commercial applications for all sorts of technology, then you start to have a different approach, the basic production task.

This is one major consequence of the lack of shift in emphasis to cost control.

There is a great deal of talk about more attention to costs, but I would have to say that the practice is somewhat different than the stated position on it.

Chairman PROXMIRE. Would you say it is somewhat different, would you say we are not paying the attention to costs that we should?

Mr. BUESKING. I would say we are paying inadequate attention.

Chairman PROXMIRE. Are you saying we are not paying attention to the costs as we have in the past?

Mr. BUESKING. I did not detect any appreciable shift in the attention from the past.

Chairman PROXMIRE. No more actual attention?

Mr. BUESKING. No more, I can't see any significant change.

Chairman PROXMIRE. Gentlemen, if we cut costs in our weapons acquisition program would we also be cutting or is there any danger we would be cutting the quality of hardware and weapons? This is something we want to safeguard against, of course.

Mr. FITZGERALD. I would like to comment on that, if I may, Mr. Chairman.

Chairman PROXMIRE. Yes, sir.

Mr. FITZGERALD. I would second Mr. Buesking's observations that the disciplines tend to spill over. It has been my personal observation that companies, contractors, and Government organizations, for that matter, having poor discipline in one area, cost control, for example, typically have poor discipline in other areas. Almost every situation in which we have found gross failings in cost control techniques through our examination of the systems for compliance to our criteria, have been also situations in which we have severe quality and workmanship problems.

Chairman PROXMIRE. So you say exactly the opposite. You say if you do a good job in keeping your costs down or a sharp cost control method, you are likely also to do a better job in quality?

Mr. FITZGERALD. I think you are likely to have better management and worker discipline throughout the operation. I have observed in some of my early professional experience as a quality control engineer that good people do good work quickly, and that large numbers of excessive people do not contribute to quality product. I think that you can certainly jeopardize the success of any operation by providing inadequate resources, particularly people, but, on the other hand, if you have large numbers of supernumeraries about, your discipline in quality control and other areas tends to deteriorate. So I think that we need to focus on improved discipline in all areas. I don't consider that there is to be a necessary trade off between cost and quality.

Chairman PROXMIRE. Is there a possibility, though, as you put more and more pressure on reducing costs there will be pressure also to try to get your production out with less quality?

Mr. FITZGERALD. That is certainly a possibility and it has to be guarded against.

Chairman PROXMIRE. Particular specifications cannot safeguard against that.

Mr. FITZGERALD. I wouldn't say specifications alone can do that. I believe that you have to make certain that you have the disciplines we mentioned throughout the organization, and I think a tightly controlled, cost-conscious organization is also likely to understand the mechanics required to control quality. The process is a closed loop control system such as I cited in my initial statement. I think the two are almost identical.

PROFITS RELATED TO COSTS

Chairman PROXMIRE. Mr. Fisher?

Mr. FISHER. I would like to add one comment that this is also related to the previous question. I think that many of the difficulties that arise in defense procurement relate to the institutions that now exist. We now have a system where profits are related to costs, the contractor's reward is related to costs and, as a result, all of the incentives are on providing systems to the DOD that cost more.

What we tend to get are very sophisticated, very elaborate systems and, in some of these cases we are probably spending a great deal for very little additional effectiveness.

Chairman PROXMIRE. Maybe the quality is higher than you need?

Mr. FISHER. That is exactly the point. We might be able to reduce costs substantially while giving up very little in terms of real effectiveness.

Chairman PROXMIRE. Secretary McNamara spent quite an effort in trying to overcome the so-called gold plating where you produce a radio that would cost \$10,000 and you could get one that can do all that is necessary for \$500.

Mr. FISHER. That was certainly one of his objectives.

Chairman PROXMIRE. I don't want to get away from that until I get your conclusion. Your conclusion is that by emphasizing costs in this way, relating it to profits and so forth, that there is a temptation to gold plate, and to produce weapons or produce for the Defense Department products that are in excess of what is needed—excess to the quality.

Mr. FISHER. There is certainly an incentive to produce the most costly systems possible. I think the way you put it is exactly right.

Chairman PROXMIRE. As part of this question, and it just occurred to me at the moment, there is also, we spoke, and we didn't mean to just pass over about the importance of having an active defense industry, one that was healthy and one that could respond to the needs of the country, one that was eager to do defense work and, therefore, provide as much competition as possible. Is there a possibility here we may be coming down too hard by emphasizing cost discipline and hammering away at profits that may be too high?

Mr. BUESKING, do you want to comment on that?

Mr. BUESKING. Well, my comment would be that if we are incurring costs beyond what we should, at least by some improvement in efficiency we might get more for the same amount of dollars we are paying. If we want to have a healthy base and we want to maintain a certain capability in the industry, then we ought to make that assessment and make the judgment as to what that level is, and set about the task of getting the most productivity out of that particular base.

Chairman PROXMIRE. Well, what I am concerned about is the notion that we may have an obvious effort on the part of those of us who are in Congress to cut down on spending in all of these areas, and in defense, and one that is shared obviously by most people, but one that may be shortsighted inasmuch as it might result in profits that are too small, encouragement that is too little for the defense industry to be maintained at the level necessary to provide the enormously important defense, the most important, I suppose, responsibilities we have.

Mr. BUESKING. I did not mean to imply the reduction of profits, to take away the stimulus to provide this as an industrial base. I then would address myself to the other problem of costs incurred and relate profits to the performance.

Chairman PROXMIRE. In other words, none of you gentlemen see this as a substantial danger.

Mr. FITZGERALD. Not an immediate one.

INCENTIVES TO CONTROL COSTS WITHIN DOD

Chairman PROXMIRE. Now, finally, what motivation is there within the Defense Department to control costs and profits and what are the rewards or penalties for doing a good job?

Mr. BUESKING, do you want to start off on that?

Mr. BUESKING. Well, it is very difficult to correlate the performance on the part of people to the rewards and punishment systems involved.

Chairman PROXMIRE. I am talking about motivation within DOD now, I am not talking about the motivation of the contractors which we have been discussing in general, but DOD.

Mr. BUESKING. I understand. Both the military officer and civil servant have a highly structured personnel system and the ability to either penalize poor performance or reward outstanding performance is very narrow and constrained, I would suggest. There are certain exceptions, but these kinds of exceptions require very significant attention on the part of very top-level officials. The ability of superiors to do, like I say, both penalize and reward in terms of resources, are not significant enough to provide the proper motivation on their part. The people involved in the management and in the procurement of the defense weapons systems have considerably more responsible positions than many others of similar rank personnel system, and yet the sys-

tem probably views them both the same in terms of their responsibilities and performance.

Chairman PROXMIRE. You left the Pentagon to go into the quieter groves of academe in the beautiful southern California area.

Mr. BUESKING. Yes, sir.

CONFLICTS OF INTEREST

Chairman PROXMIRE. Do you think there is any attrition on the performance of people in the Pentagon because there is a possibility they may go to defense work? We have laws, of course, to prevent any direct, immediate, and patent conflict of interest, but we still have some problems there. Do you think this is something that is of great significance or not?

Mr. BUESKING. I can't really assess the total significance. On my particular part, I elected to take the route you mentioned. However, the financial rewards involved in outside activity in the defense industry are considerably more than those involved internally, as you well know. Consequently, again, I have to go back; we don't have the reward system available to compensate for the quality of management we need on our side of the fence. I think in this particular segment of activity we need to devise much more foresighted methods of both attracting the quality of people to carry out the job, assuming their responsibilities, and rewarding appropriately those kinds of performances that we would like to see.

Chairman PROXMIRE. You can't indicate any specific rewards or penalties for doing a good or bad job? It is just that satisfaction, of course, that any good man has in wanting to do a good job, but there is no—I suppose it is very difficult compared to private business where you can promote people, increase their salary, give them bonuses, all that kind of thing, very little of that, much less of that certainly in the Defense Department.

COST CONTROL AND ANTISOCIAL ACTIVITY

Mr. BUESKING. I can only observe that the social sanctions on those who have attempted to bring about major improvements in the general areas of costs have been significant. It has been my personal observation that a number of competent people who did attempt to stimulate major change in the cost environment are no longer involved in working in that particular environment.

Chairman PROXMIRE. Mr. Fitzgerald, you might want to comment at this point on that.

Mr. FITZGERALD. Yes, sir; I certainly would.

I think that cost reduction and cost control are by their very nature antisocial activities. Nobody really likes the efficiency expert, and I think that a good one expects that and doesn't really try to win popularity contests.

I think there is a difference, though, between the environment in which these people work in a truly competitive private industry and Government. The results of their efforts, however, distasteful to their associates, eventually show up in the profit-and-loss statement in a private company. It is not quite as clear in the defense situation.

While I have great respect and admiration for those people who

do push hard in this area in defense, the benefit to the organization is not as apparent as it is in a commercial situation.

Chairman PROXMIRE. This is a very serious problem, you know.

Mr. FITZGERALD. Yes, sir.

Chairman PROXMIRE. As a matter of fact, there is a negative element here, too. After all, people are human. If you push hard, do a good job, keeping costs down, you are also likely to be keeping profits down and you are going to make the people who do have relationship often with others in the Pentagon and on the Hill, also, make them unhappy, and they will complain. As you say, you don't win a popularity contest in doing a good job here.

Mr. FITZGERALD. It is essentially antisocial activity.

Chairman PROXMIRE. At least antisocial.

Mr. FITZGERALD. To summarize the reward side, the rewards have to be largely those of doing a good job and learning to do an even better job in the future.

I think that this motivates quite a number of people for which we are very thankful.

On the other hand, the penalties for not getting along with people, that is the phrase, you know, I think are very great. I think our personnel system penalizes those who are accused of that, for whatever reason.

Chairman PROXMIRE. Yes.

Mr. FITZGERALD. For this reason, we have made an effort, in recent months particularly, to protect our civil servants and some of our military officers who are put in a position of playing adversary to some of the giant companies with whom they deal. This is a very unfair match, as you might imagine.

Chairman PROXMIRE. I am delighted you are doing that. I didn't know about that, it is fine.

Mr. FITZGERALD. It has been a sort of a personal effort on the part of a number of us in the Government.

Chairman PROXMIRE. How do you protect them?

Mr. FITZGERALD. We have in several cases gotten cases together which were going to become adversary situations and taken these cases to the Secretary or Assistant Secretary and obtained personal backing prior to entering into the adversary situation.

TF-30

Mr. Gordon Rule, who was the procurement officer on the TF-30 project which Mr. Buesking mentioned earlier, did this exceedingly well, I think. He has written a paper on this which I would recommend for the staff's reading.

Chairman PROXMIRE. I hope you will send it to us. I would like to read it.

Mr. FITZGERALD. Yes, sir.

LESSONS LEARNED DURING THE PRATT AND WHITNEY STUDY AND NEGOTIATION

1. Do not start something you cannot finish.
 - (a) Terms of reference.
 - (b) Selection of team members.
 - (c) Topside support.
2. Tactics versus ethics.
3. Know your negotiating position.

4. Expect resistance and criticism.
 5. When such a study should be conducted and by whom.
 6. DCAA assistance.
 7. Fundamentals.
 8. Contract terms and deficiencies.
 9. The corporate mentality.
 10. Patience.
 11. Planning.
 12. Sense of humor.
 13. Regular written reporting.
 14. Firm engine prices.
 15. Orders for team members.
 16. Intellectual honesty.
- Overall lesson learned.

As Chief Negotiator and Head of the Special Negotiating Team established by the Chief of Naval Material at the direction of SECDEF, I feel a responsibility to document what I consider to be the lessons learned from this eleven month effort to definitize certain letter contracts and bring about desired and required changes in the operating and contracting practices and procedures of this important defense contractor.

Lesson No. 1. *Do not start something you cannot finish*

If and when the DOD requests you to set up a team and go into one of the largest defense contractor's plants and find ways of reducing that contractor's costs and increasing his efficiency, you have a hard decision to make—if you are smart.

You have to ask yourself if you are tough minded enough and have the intestinal fortitude to make decisions that will result in considerable opposition, both from the contractor involved and from those in the DOD to whom the contractor has always been a "sacred cow."

If you conclude that you are mentally equipped to take on this assignment, you must then accomplish the following if you are to give yourself any reasonable expectation of finishing what you have been asked to start:

(a) Obtain written terms of reference defining clearly what the assignment is and make absolutely sure that your authority is spelled out in no uncertain terms. If you cannot get the authority and decision making power you feel essential, you better find this out before you undertake the assignment. At that point you have a choice—if, however, you start work without this knowledge, and are pulled up short downstream, it is your own fault and you cannot then be heard to complain about lack of authority.

(b) Obtain unambiguous authority to choose the members of your negotiating/study team. If you are going to be held responsible for the success or failure of the team's efforts, you must be permitted to choose your key team members.

(c) Determine if you and your team have and will continue to have 100% support from the top officials in the organization you are representing.

The absence of either a., b., or c. above can and probably will prove fatal to your efforts. You are supposed to produce results, not merely engage in a level of effort exercise, but without a., b., or c. you will be stepping up to the plate with one or more strikes against you. Perhaps more important, however, is the fact that you will be kidding both yourself and others who believe in your ability if you permit yourself to commence the assignment without the basic tools required to make success possible. With these tools success is not assured, but without them, success is not possible.

In the Pratt and Whitney study and negotiations, all three of these essentials were provided. Admiral Galantin provided perfect terms of reference, provided exactly the team personnel requested and in the later stages of the negotiations when the going really got rough—with both the contractor and certain elements in the Navy—provided 100% support for the Team. This support was complete and absolute, up to and including SECDEF. Had it not been, we could not have succeeded.

Lesson No. 2: *Tactics versus Ethics*

In our study and negotiations with Pratt and Whitney, it was early realized that we were engaged in an adversary proceeding. Government contract negotiations are not normally, but should not be, adversary in nature. The essence of the term "negotiation" is antithetic to the adversary proceeding concept, where, as a case in court, one party wins and the other loses.

The Pratt and Whitney operation ran the complete gamut from the adversary

to sincere appreciation. They did not want us in the plant, they did not cooperate during the study, they went all over DOD in attempts to impede our efforts, they stalled and withheld information, they could not believe the Government would take firm action against them, they finally saw the light and believed we meant business, they then agreed completely and without reservation to do what we required, they are now carrying out their promises and commitments and last, but by no means least, I firmly believe that Pratt and Whitney today—at the top corporate level—is sincerely appreciative of what the Team has finally succeeded in getting the company to do.

This transition was brought about by the utilization of every possible and available tactic through the study and negotiation. We were ever mindful of the line between ethics and tactics. We fully realized that we were dealing with the largest employer of labor in the State of Connecticut which could naturally produce State and Congressional “inquiries”, etc.

The overall tactic was to slowly, step by step, paint the company into a corner from which they could only extricate themselves by engaging in reasonable negotiations. This was done by firm correspondence, by rejecting their proposal to definitize the letter contract as unreasonable and unsubstantiated—something of a shock to any company—by fortuitous public relations and ultimately by a Contracting Officer's Decision setting the engine prices.

To accomplish this with a company that has been dealing with the DOD for many years on their terms, not ours, is not easy and requires a very fertile imagination plus the mental toughness mentioned at the outset. Full use of all available tactics, however, must never cross the line and become unethical. To overstep this line could be labelled “arbitrary and capricious” action by the Government which is not permissible by any standard.

Thus the difference between tactics and ethics. In short, you owe it to the Government and to yourself to effectively use every single tactic at your disposal.

Lesson No. 3: *Know your negotiating position*

As team head, you must analyze your assignment to ascertain your negotiating position. Do you have strength or are you negotiating from weakness?

In the Pratt and Whitney “should cost” exercise we were attempting to determine what jet engines should cost as distinguished from what the contractor said they would cost. Although the Team was conducting the first such in-depth study of a contractor's operations to determine this “should cost” it was realized early in our undertaking that we had no negotiating position or any strength whatsoever.

In reviewing our negotiating position, it became apparent that if our “should cost” study resulted in the conclusion that Pratt and Whitney engines should cost 500K instead of 700K, there was nothing we could do about it, because contractually we were in the position that if we did not agree to the contractor's proposed price to definitize the letter contracts he could stop work and demand a termination of the contract. In short, the letter contract definitization clause was a one way street for the contractor.

In his situation, I decided to *create* a negotiating position for the Government, where none existed. An amendment to the letter contract was negotiated which permitted the Government to unilaterally set engine prices if the parties were unable to mutually agree upon reasonable prices. Under this amendment the contractor was obligated to continue work and could appeal the Contracting Officer's Decision to the Armed Services Board of Contract Appeals. With this amendment the Team was not only in business but now had a means of protecting the Government's interests.

This negotiating position which the Team created for itself was used very effectively later in the negotiations with the result that the contractor proceeded in good faith and negotiated a reasonable settlement.

The point is, you must know your negotiating position and if you have no strength, create strength, don't play a losing game just because you may have to start with nothing.

Lesson No. 4: *Expect resistance and criticism*

When you are engaged in a study and negotiation even comparable to the Pratt and Whitney exercise, you should expect resistance and criticism from your efforts.

Obviously, if your assignment is in reality an adversary proceeding you should expect resistance and criticism from your opposite number—the contractor—but when it comes from people in the Government, who should be supporting your efforts, you will naturally be chagrined.

This “home front” resistance can be much more brutal than that from a con-

tractor. We are even criticized by some of our own people for getting Pratt and Whitney to amend the letter contract to permit us to make a Contracting Officer's Unilateral Decision.

If, however, you have learned your lesson number one above, and have obtained proper terms of reference and assurance of top level support, you need not panic at the opposition to your efforts. Actually, some of these attempts to interfere with and thwart your efforts could be highly amusing if they did not come from grown men who are getting paid by the Government, and thus should think first about the Government's best interests.

If you have also learned another lesson—that of always keeping a sense of humor—you may be able to turn this sort of opposition to advantage by bringing it into the open and publicizing it. Additionally, if you are sufficiently astute you may very well connect degrees of opposition to certain of your actions, which can tell you that you are on a right track or have hit a nerve.

Lesson No. 5: *When such a study should be conducted and by whom*

Our "should cost" study and negotiation were conducted in connection with a particular contract, specifically, the definitization of a letter contract, and the letter contract was several months old when we started work.

If and when it is thought necessary or desirable for the Government to have a comparable study made of a sole source contractor's operation, it is suggested that the study not be made with respect to an individual contract. Such an in-depth study should be aimed at the entire sole source operation rather than one contract.

It is also suggested that this type of study, designed to determine a sole source supplier's overall efficiency, should be performed by a highly professional group of full time people attached to DOD. Objectively, improvement and innovation are not normally the result or by-products of any type of self inspection. Our Team found that part of the inefficiency existing at Pratt and Whitney was the fault of the Navy and our Final Report so stated. Teams set up by a service or an activity within a service are unlikely to criticize the activity they work for, for obvious reasons.

Lesson No. 6: *DCAA Assistance*

In my opinion, it is absolutely essential in any comparable study and negotiation that DCAA be persuaded to supply, as a member of the team, their most capable man.

I picked each member of the Pratt and Whitney Team except the Audit member. Acting upon advice, Mr. Petty, the Head of DCAA was asked to provide one of his very top men and this he did. In retrospect, it is fair to say that without the wisdom, experience and guidance of Mr. Kinelski from DCAA, our results would have been far more difficult of achievement.

Lesson No. 7: *Fundamentals*

One of the most important lessons learned or perhaps relearned was a new appreciation of the very fundamentals of DOD contracting. Basic cornerstones such as the contractor's purchasing system, his make-or-buy plans and program, his proper execution of Form DD 633, his use or nonuse of risk type contracts, his access to records policy and his accounting practices are the sort of things one can easily take a little too much for granted and what we found in these areas at Pratt and Whitney jarred us back to a new appreciation of how DOD procurement people must concentrate on these fundamentals every day of every year if they are properly doing their jobs.

Lesson No. 8: *Contract terms and deficiencies*

Several contract terms and omissions caused the Team unnecessary trouble and should be corrected in future DOD contracts. These are:

(a) *Ceiling prices.*—This term was used in the letter contract to indicate the maximum Government exposure or liability. The letter contract was to be definitized by negotiation to a fixed price incentive contract with target prices, target profit, share pattern and ceiling prices. The contractor contended that the term "ceiling price" as used in the letter contract to indicate maximum Government exposure—for the Government's benefit—also automatically became the ceiling price to be used in the FPI matrix and was not negotiable.

Future use of this term in letter contracts should be carefully circumscribed to indicate its true and restricted meaning.

(b) The use of undefined terms should be avoided. The term "multi-year FPI Successive Targets proposal" appeared in our letter contract and

no two people could agree on what it meant or what was intended. No such term is used in ASPR and the use of such undefined terms should be avoided.

(c) The proper type of contract should be used. We were trying to definitize a so-called multi-year contract which is a perfectly proper contract to use when requirements are firm. Nothing could be as unfirm as jet engine requirements with the result that we encountered terminations, stretchouts, changes in delivery dates through our efforts.

(d) The existing ASPR definitization clause for use in letter contracts does not protect the Government's interests. This was the clause we found in the Pratt and Whitney letter contract which we had amended as discussed under Lesson Number Three. As a result of this Pratt and Whitney negotiation, ASPR Case #67-249 was initiated by the Navy to amend the ASPR clause to permit the Contracting Officer to do, in any difficult case, what we did in the Pratt and Whitney case and without which we would never have definitized the letter contract on any reasonable basis.

(e) Omission of a "Complete Agreement" clause. We were surprised to find the contractor contending that the terms of the written letter contract were subject to oral understandings with certain Navy people. We found that the contractor was indeed right and that an oral agreement was made which was at variance to the contract.

This sort of situation is inexcusable and the Government should always incorporate a so-called "entire agreement" clause to preclude the existence of oral or unrecorded agreements.

Lesson No. 9: *The corporate mentality*

We became well aware of divisions of thinking, at various levels, in the P&W organization. This divergence of opinion is probably par for the course in every concern, but at P&W it was marked—in a very guarded sort of way.

Some knew—and so stated—that changes must be made, others said they had been trying for years to make the company more efficient. Such differences may be of assistance in your efforts but do not rely too heavily upon them, because you cannot always believe what you hear or are told.

The real corporate mentality, which must be determined, is masked behind lawyers, accountants, engineers, vice presidents, and others who take part in contract negotiations with the Government. Each of these groups or individuals are trying hard to look good to top management of the division or corporation with the result that they ask for and insist upon contractual clauses and positions they really have no authority to demand. The Government negotiators don't know this and certainly in the P&W exercise it became all too apparent that these people were overplaying their hands, but the difficulty was to prove it and preclude it.

In addition, we finally became satisfied that *our* positions and objectives were not being relayed to top P&W management by their negotiators, thus what we had thought was the corporate mind and position was proven to be in error. When we made our Contracting Officer's Decision, top management immediately realized that they had not been getting our real message from their own representatives. When they did get it, the negotiation proceeded as it should, with the top management actually doing the negotiation and the previous negotiators being conspicuous by their absence.

The genuine corporate mentality must be ascertained at some point or mistakes will be made on the basis of what someone without authority puts forward as the company position.

Lesson No. 10: *Patience*

Although all good negotiators know the value of patience—assuming they are permitted to indulge this tool—it is doubly important in such a study and negotiation as was undertaken at P&W.

It takes time—agonizing time—to determine the good faith of the contractor and as mentioned in Lesson Number Eight, to understand the genuine corporate mentality toward the negotiation.

In the P&W exercise, I felt that we were waiting too long to make the Contracting Officer's Decision and thus escalate the entire negotiation to top corporate management. On the other hand, and in retrospect, perhaps an earlier showdown could have been labeled as precipitous. By erring on the side of patience the action ultimately taken was unassailable and it proved the time spent to be well worthwhile.

Lesson No. 11: *Planning*

The head of any special group such as that established to work on Pratt and Whitney, must literally spend day and night thinking, planning, anticipating and

being prepared for any eventuality. This must be affirmative planning, not just planning to react.

The other members of such a team will be deeply involved in their own areas of responsibilities and cannot take the time for detailed planning. Inherent in the necessity for planning is to determine your objectives and tell the contractor in writing what they are. This requires clear and unambiguous letters which will lay a foundation to oppose any subsequent appeal by the contractor to the ASBCA.

Proper planning and the use of all legitimate tactics available will serve to keep the initiative throughout the negotiation. By so doing, you build your case and make the contractor increasingly unhappy with you, but as long as you are being firm and fair you want him reasonably unhappy for some time. If he was at all times happy and content you should probably be relieved of your duties.

Lesson No. 12: *A sense of humor*

Although a sense of humor is essential in any successful form of human endeavor, if you attempt to carry out an important study and/or negotiation as was done at P&W without it, you might not even get off the ground.

Heartaches and headaches abound vis-a-vis both the contractor and personnel in the Government, as well as within your own team. If you don't have a sense of humor you are out of place on a team or directing a team. If you deprive yourself of a sense of humor you make your job and that of the team much more difficult. Tensions must be quickly dissipated and not permitted to smolder and grow if perspective is to be maintained and results achieved. A sense of humor is the key.

Lesson No. 13: *Regular written reporting*

Even though you have been entrusted with terms of reference which fully authorize you to make the decisions and obtain results, you will find it invaluable to periodically—on P&W we did once a month—write a memorandum report for the file documenting what was done the previous month and what is planned for the coming month.

By sending copies of such a document to those who need to know, you will assure their full knowledge of what you are doing and hence their continuing support and confidence.

Lesson No. 14: *Firm engine prices*

One of the mistakes of the TF30 engine procurement was not getting from P&W a better firm handle on what production engines were going to cost. The result was unexplained, substantial increases in engine prices from the original "estimate".

It is certainly hoped that in future engine development programs the Navy, or any other procuring service, will be astute enough to require any engine manufacturer to submit either firm target prices or ceilings for the follow-on production engines.

If we do not take this simple, businesslike precaution, it will ill become us to later complain again about unexplained, substantial increases in engine prices.

Lesson No. 15: *Orders for team members*

The P&W Special Negotiating Team was established and the team members appointed by the Chief of Naval Material. Some of the team members were from activities other than the Naval Material Command Headquarters. In retrospect it is clear that individuals designated to work full time on a special mission of some duration should be given TAD orders to the new assignment. By so doing the fitness or efficiency reports for the team members become the responsibility of the person assigning them to the team, rather than the activity from when they came.

This can be very important if the work of the special team affects the activity supplying members to the team.

Lesson No. 16: *Intellectual honesty*

(a) *Preparing for and conduct of study.*—When a special team is established to study any or all aspects of a contractor's operations, two separate phases are involved, first, the preparation for the on-site study and secondly, the conduct of the actual study itself. It is essential that during the first phase you not allow yourself or the team to embrace preconceived or prejudicial positions or convictions. Your objective will normally be to determine facts and despite your knowledge of the contractor's reputation and history you must approach and conduct the study with an open mind. In the P&W exercise I made it clear to the

team that if the facts showed the engines should cost what the company said they would cost, we would so report; there would be no distortion of facts because of preconceived feelings or positions.

(b) *Reporting the facts and making recommendations.*—During the conduct of any fact finding study both favorable and unfavorable facts will be developed. It is incumbent upon you to report fairly both categories of facts and give due weight to the favorable ones in your overall evaluations and recommendations concerning the contractor. Thus we found, and so stated in our report, that P&W produced a high quality product, on time, and that the company had advised the Navy in writing that engine costs would increase substantially because of a greatly expanded program of subcontracting if the Navy wanted them to undertake production of the 2058 TF30 engines over a four year period. These and other favorable facts were given proper weight in our overall conclusions and recommendations.

The same intellectual honesty must be displayed vis-a-vis the particular activity of DOD involved. Facts favorable and unfavorable to any activity must be reported accurately and honestly. Adverse comment and constructive criticism is not a one-way street. Failure of any activity of the DOD to properly carry out their responsibilities must not be covered up or minimized.

OVERALL LESSON LEARNED

There is one paramount lesson to be learned from the P&W exercise. It is a very simple lesson but one which should never be lost sight of by Government representatives. This lesson is that despite all manner of obstacles, despite an adversary climate during much of the study and negotiation, if you are fair and firm throughout your operation, success can be yours, along with respect and even later appreciation from the contractor, for what you have done for both the Government and the contractor.

The most important element of being fair and firm is to not take advantage of the contractor when you reach the point, as we did, where we were firmly in the driver's seat as a result of the Contracting Officer's Decision. The temptation is great indeed to bear down on the contractor at this point to compensate for all your earlier frustrations, delays and lack of cooperation. Do not make this mistake.

When you have the contractor in this position, you must then proceed to secure what you have previously determined to be reasonable positions for both your short term objectives and your long term objectives. If you get all of your long range requirements you may temper your short term ones accordingly. What you want is overall reasonableness, and you do not achieve this by driving too hard a bargain.

Do not concern yourself regarding the in-house noses out of joint at your efforts. Your job is to represent the Government to industry in a firm and fair manner and if you have done so successfully, forget the rest.

GORDON W. RULE.

And I think that this negative incentive can be overcome in this way. I think most of the good people, all of the good people we have, and they are in the majority, want to do a good job in this area, and if they can stay alive while doing it, they will do so.

I am very sympathetic to the people involved in this so I may overstate it slightly.

Chairman PROXMIRE. I can understand why you are.

Mr. FITZGERALD. I picture in my mind the colonel who is perhaps on his last tour or next to the last tour, and he is in charge of a detachment as plant representative. He has very heavy responsibilities, many of which if discharged properly cause him to incur the wrath of the contractor, and he is being cut off in the middle of a career. He has college expenses, and he needs to make money. It requires a very exceptional person, I think, to go all out in this situation and control costs when in turn they have the effect on profit and well being that Mr. Fisher and others have cited.

Senator PROXMIRE. I am delighted you recognize that problem as well as you do and from what you say it seems the administration of

the Defense Department recognizes it, is acting on it and is trying to do their best to overcome the great pressure on personnel not to do a vigorous job in reducing costs.

Mr. FITZGERALD. We don't have a formal program in the Air Force—

Chairman PROXMIRE. I want to see that Rule paper and anything at all, any other procedural reports, that you have, to indicate what is actually being done.

Mr. FITZGERALD. Nothing that I know of in writing, but I think there is an awareness of this problem and a determination at least on the part of the Air Force Secretariat to alleviate it somewhat. It is a very severe one, as you can understand.

DESIRABLE TO REDUCE DOD MANAGERIAL CONTROL

Chairman PROXMIRE. Do you want to comment on that, Mr. Fisher?

Mr. FISHER. I certainly agree with Mr. Buesking and Mr. Fitzgerald that there is an asymmetry between the motivation and incentives provided to contractor's representatives, and those provided to DOD contracting personnel, but there is one other point that I would like to mention, I think we are making a mistake when we insist that the Government have the same capability and managerial skill that contractors have. One of the reasons we have a private defense industry is to pass off some of the managerial problems to contractors. Yet, every time we write a contract with precise specifications we get involved with managerial functions so that it becomes increasingly necessary for the DOD to provide people who can duplicate all of the functions that the contractor is supposed to perform. It would be desirable for the DOD to reduce the managerial control that it now exercises over many of these contracts.

Chairman PROXMIRE. I think it is an excellent point. You want to substitute managerial functioning but at the same time there is a direct, and there should be, a healthy, wholesome conflict between the management people on the outside, the private contractor who wants to make as much money as he can, and that is normal, we expect that, it is part of our system, and the representative of the Federal Government, the Defense Department man who wants to keep those costs down and with the contract would normally persuade management not to do so.

Mr. Buesking, I believe, wanted to make a final comment.

Mr. BUESKING. Yes, I want to make a final comment.

I would agree with Mr. Fisher we should not duplicate all the management efforts of the contractor. We want to shift that to him, but I would make the point we need to have at least some of the expertise and understanding of what he does if we are going to deal with him in an adversary relationship. It would at least require some of the competence in the DOD even if we don't duplicate the total range of activity and I wouldn't expect that we should.

Chairman PROXMIRE. I might just announce we intend to receive testimony from Admiral Rickover in executive session as soon as that can be arranged. Any additional statements we may receive, together with correspondence and statistical data will be included in the record, without objection.

We have a statement from Representative Henry B. Gonzalez, a Member of the Congress representing the 20th Congressional District of Texas. We will include Mr. Gonzalez' statement at this point.

STATEMENT OF HON. HENRY B. GONZALEZ, A U.S. REPRESENTATIVE FROM THE 20TH CONGRESSIONAL DISTRICT, TEX.

Mr. GONZALEZ. Chairman Proxmire, I greatly appreciate this opportunity to address your subcommittee. I wish to commend you for calling these hearings on defense profits. Indeed, you deserve the highest gratitude of the American people for your tireless scrutiny of defense spending.

LACK OF CONCERN ABOUT EXCESS PROFITS

Almost independent of my other congressional duties, I have become concerned about a lack of war-time restraints in a period of high defense spending. I have read many reports on this recently, and have quoted figures from them. But the more I learn the more I remain convinced of an early impression—that there is a studied lack of concern in most quarters about excessive profits on defense contracts.

There is an agency which is solely concerned with recovering excess profits on military spending. It is largely obscure. It does an efficient, effective job within the restricted mandate of its enabling legislation, but this agency—the Renegotiation Board—has withered away from lack of concern for its function.

About the only people who pay attention to the evidence of profiteering turned up by this Board are those contractors who are ordered to return unearned profits. Their determinations of excessive profits are largely on defense contracts, but the Department of Defense does not take note.

GAO STUDY OF RENEGOTIATION BOARD AND DOD

I recently requested the General Accounting Office to study the relationships between the Board and DOD. It was the first serious look GAO had taken at renegotiation. One of the questions I asked was about the policy of DOD in doing further business with contractors who repeatedly ran afoul of the Board. It turns out there is no policy. The Comptroller General, who signed the report to me, stated: "To the best of our knowledge, DOD does not give weight to the Board's findings in selecting suppliers of defense materials nor do the Board's findings diminish a company's chances of receiving another contract."

I venture to say that no private citizen would continue to buy from a tradesman whom he had good reason to believe overcharged him time and time again. But apparently Uncle Sam does not mind.

LACK OF DATA ON PROFITS

An unmistakable manifestation of the general unconcern about whether the taxpayer is being gouged on defense spending is the lack of data on defense profits. Most of the profit levels DOD points to are contemplated profits agreed to before the contracts are awarded, not

the actual profits realized on the completed contract. Not even DOD's expressed concern about the cries of defense contractors that their profits are too low has induced an accurate profile of costs and profits. To shy away from hard data seems to be unofficial policy. Is our bliss being protected by keeping us ignorant?

Two years ago, Adm. Hyman Rickover told Congress it was his experience that defense profits were rising by about 25 percent. DOD would not accept this, pointing to the persistent complaints of low profits by contractors. The House Appropriations Committee ordered a GAO study, issued on April 20, 1967, which indicated that Admiral Rickover was right, and that the contractors were somehow mistaken.

But contractors still complained and DOD, acknowledging their lack of complete information, responded with another study. DOD reached into a segment of the military-industrial-educational complex and contracted to pay \$105,000 for a study of military profits to be based on information voluntarily supplied by the contractors. The results of this "LMI Study" were predictable.

NEED FOR UNIFORM ACCOUNTING STANDARDS

A fundamental difficulty in determining and comparing what the American taxpayer is paying in profits on war goods is the vast assortment of accounting ploys that can be used to compute costs. While I have no doubt that the accounting procedures of most contractors are legitimate tools of management which they apply consistently to all their business, the very multiplicity of accounting procedures lend them to easy manipulation if obscurity or fraud is intended. There are, for example, many ways to charge off depreciation, or overhead costs. The temptation to over-estimate or over-report costs is tremendous, because excessive costs are not costs at all but disguised profits—profits which are not taxable.

The General Accounting Office is aware of this. They are aware that uniform reporting methods have been a burning issue in the accounting profession for years. They are aware that certain costs properly allowable in private industry are not appropriate to Government contracts. They are probably aware of the naval contract on which seven different audits came up with 11 different estimates of the profits which were earned, due to different interpretations of allowable costs.

Yet GAO expressed surprise when a bill to establish uniform cost accounting standards gained serious consideration in Congress this year. I was surprised at their surprise.

GAO is directly responsible to Congress. The Office of Comptroller General of the GAO was established 50 years ago in order to equip Congress with the accounting expertise and audit capabilities necessary to implement congressional review of public funds. The professional staff of GAO has grown to about 3,000 employees.

But the GAO representatives did not give an adept performance before the Senate hearings on the uniform standards bill I helped along to House passage. The GAO seemed confused that their bosses in Congress were suggesting that accurate data on costs was a prerequisite for determining fair profits.

GAO did not deny the need for more precise data on costs and profits. It would seem to me that if the need for usable profit data is

admitted, then the opinions of those professionals in and out of Government who believe that uniform cost accounting standards can be fairly devised should have more weight than those who say the whole idea is preposterously impractical for dozens of resourceful reasons.

Certainly the implementation of uniform cost accounting standards will be politically difficult, for the powerful military-industrial lobby is now adamant against them. But Congress itself is the arena for deciding political differences. I expected from our advisers in GAO a more positive statement on the technical issues involved—issues which must have presented themselves to every defense auditor in GAO for years.

The 90th Congress, of course, enacted the uniform standards bill as Public Law 90-370. It calls for the GAO to complete a study on the feasibility of uniform cost accounting standards for large defense contracts. GAO is pursuing this task vigorously.

However, I suspect that the general unconcern with profiteering is also partly reflected in GAO. Fifty-seven percent of our national budget is being spent directly on defense—over \$70 billion. Are a proportional amount of GAO auditors spending their time and energy reviewing defense contracts? Is more than half their professional staff so engaged? Or is GAO another place where defense profits are muddied waters, where individual examples of profiteering are not allowed to raise larger questions and where the self-serving cries of low defense profits go unchallenged?

GAO SHOULD CONDUCT PROFIT STUDY

In my opinion, Mr. Chairman, your subcommittee can perform one of the most valuable functions of our times by directing GAO in a comprehensive review of profits on all types of defense contracts. The concern Congress expressed in enacting Public Law 90-370 and the intention of Congress in opening a contractor's books to Government inspection for 3 years (Public Law 90-512) are adequate mandates for mobilizing GAO for a more intensive examination of defense profits. Thank you.

Chairman PROXMIRE. I want to thank you gentlemen for a fine job; very frank and responsive, and most illuminating. Thank you, very much.

The hearings are now closed, except for the Rickover testimony which will be heard shortly, in executive session.

(Whereupon, at 12:15 p.m., the Subcommittee on Economy in Government recessed, subject to call of the Chair.)

(Additional statement, presented for the record, follows:)

STATEMENT OF GEORGE W. BERGQUIST, DEPUTY ASSISTANT SECRETARY OF DEFENSE (MANAGEMENT SYSTEMS DEVELOPMENT)

MANAGEMENT SYSTEMS AND CONTROLS

The management control systems that the Department of Defense prescribes in doing business with contractors can importantly influence the quality of what is delivered, the timeliness of delivery, and the cost. These systems can in themselves be costly or reasonable, effective or merely burdensome. While they cannot replace motivated management, they can either vastly help or seriously handicap even the most highly skilled and motivated manager. The

lack of an adequate management control system can defeat the best intentioned manager. Or on the other hand, such systems can frequently be so numerous, overlapping and duplicative as to submerge a manager in a sea of paperwork. The Department of Defense is deeply concerned about insuring that we have better management control systems for use in the procurement process, and that we hold down the number of such systems to a minimum essential level.

With this concern as a foundation, I would like to address the following questions:

1. What do you mean by management control systems?
2. What is the recent history of the Department's concern and activity?
3. What progress have we made toward the goal of better and fewer systems?
4. What are we currently doing, to assist the procurement process with better management control systems?
5. What about the future?

Management control systems

The terms Management Control Systems, Management Systems, and Resource Management Systems are used quite interchangeably these days. For example, DOD Directive 7000.1, the Defense document that assigns the Comptroller's office a charter in this field, speaks of *Resource Management Systems* and defines them in this way:

"Resource management systems include all procedures for collecting and processing recurring quantitative information that (1) relates to resources and (2) is for the use of management. They also include procedures which are closely related to quantitative systems even though the systems may not themselves be primarily quantitative. Resources are men, materials (i.e., real and personal property), services and money."

This same Directive goes on to say:

"Resource management systems are ordinarily described in terms of the flow and processing of information, and the common denominator of this information is often monetary but the information may be non-monetary."

And the Directive says that resource management systems include, among others, "Systems for management of acquisition, use and disposition of capital assets."

Another definition states that a management system is an orderly way, generally including a documented procedure, of assisting managers in—

Defining or stating policy, objectives and requirements;

Assigning responsibility;

Achieving effective utilization of resources;

Periodically measuring performance;

Comparing that performance against stated objectives and requirements;

and

Taking appropriate action.

In the context of this statement, we are dealing wholly with those management—or management control—systems that the Department of Defense uses in connection with procurements from contractors.

History and background

I will now try to sketch the background which lies directly behind our recent and current work in seeking to improve our management systems.

There has been no lack of management systems of the kind we are discussing today. We have very recently compiled an admittedly unscrubbed list of some 1,000 in the Department of Defense. They range from large systems like PERT, to simple one-page reports on costs in a particular procurement. I think most would be judged good, in that they meet recognized needs for data, and they are generally clear, understandable and reliable in the sense of being auditable.

I can speak from personal experience, having served for four years under Admirals Raborn and Galantin in the Polaris program of the Navy. Polaris can certainly be called a successful program. It performs as promised. It was delivered on or ahead of schedule. Costs have been well controlled. The management systems that were developed in the Polaris program—or perhaps they could better be called subsystems within an overall integrated system—contributed importantly to that success, and have been honored by wide imitation. They include such things as PERT, the idea of the independent evaluator, milestone charting, the management center concept, and the imaginative use of graphics and fast communications. Not all of our management system experiments were successful, and we discarded those that were not.

Other project managers of other major weapons system acquisitions were devising management systems at the same time. I suppose the 10-year period from 1955 to 1965 saw our greatest proliferation of management systems. You can make several generalizations about the management systems inaugurated during that decade:

1. There was duplication and overlapping. Many systems were devised that were identical or barely different in content and procedure.

2. Some of these systems penetrated the contractor's plant. That is, some of these systems specified not only *what* data the contractor was to report, and when, and on what forms—but they also specified *how* he was to collect and assemble the data. PERT is an example. Systems of this kind led the contractor either to reorganize his internal control systems, or to operate dual systems—his own and the Government-specified one.

I won't say that these two general characteristics—proliferation and penetration of the contractor's plant—are necessarily all bad. Experimentation and trying out new ideas often leads to proliferation, but by natural selection it might be expected that the best systems would survive. We cannot say this has happened in all cases. Penetration of the contractor's plant with a prescribed system for him to operate can have the benefit of assuring the government's project manager that the data have known origins and meet a certain standard of reliability and comparability. Admiral Rickover and others have pointed out how contractors' systems vary, both as to their quality, and as to the comparability of reported data.

On balance, uncontrolled proliferation turns out to be inefficient and costly, not only in terms of multiple reports and mounting piles of paper, but more important, because it needlessly increases the cost of organizations, procedures, accounting systems, computers, and the efforts of people needed to make the duplicative systems work. And penetration into the contractor's plant with pre-fabricated, prepackaged systems to be applied the same way in every situation, leads all too often to artificialities and window dressing. The best system for an electronics plant is not necessarily the best system for a missile plant.

Recent progress

The main thrust of the recent efforts of the Department of Defense to realize better and fewer management systems in the procurement process has come since the issuance of DOD Directive 7000.1, Resource Management Systems of the Department of Defense, on August 22, 1966. This Directive states DOD policy on the subject, and assigns responsibilities.

It prescribes that systems used in procurements should:

Focus on the item (or component thereof) being acquired, its quality, its time schedule, and its cost, in terms of both plans and actual performance.

Include special information subsystems for acquisitions of selected major capital items.

Be standardized and controlled, to the extent practicable, so as to minimize the data gathering and reporting workload imposed on contractors and our own in-house activities.

Be structured so as to minimize changes required in accounting systems used by contractors.

The Directive also says:

"Each system or subsystem will be compatible with other systems; it should not overlap or duplicate other systems; all the data should meet a recognized need; the value of the information obtained must exceed the cost of collecting it; standard terms and data elements should be used to the extent feasible."

The Directive assigned some specific responsibilities to the Comptroller:

"Subject to the direction, authority, and control of the Secretary of Defense, the Assistant Secretary of Defense (Comptroller) has the responsibility to provide for the design and installation of resource management systems throughout the Department of Defense.

"This responsibility requires that the Assistant Secretary of Defense (Comptroller):

1. Maintain an overview of all DOD resource management systems activity, including an inventory of all significant DOD resource management systems, that are either in use or under development

3. Insure compatibility and uniformity among resource management systems.

4. Provide policy guidance for the characteristics of and general criteria governing resource management systems"

In discharging this responsibility, the Assistant Secretary of Defense (Comptroller) leads in the design of financial systems, participates in the development of others, and in all cases insures that systems meet certain basic criteria.

Within the Comptroller's office, two small groups were assembled in 1966, within the charter of DOD Directive 7000.1, to work toward the twin goals of better and fewer systems for managing procurements.

One of these groups, the Directorate for Assets Management Systems, takes the lead in developing financially oriented systems. The main thrust of its work since 1966 has been toward improving and consolidating management information and reports required of defense contractors in the closely related categories of cost, schedule and technical performance, and toward developing ways to encourage contractors to use sound management control systems.

One of the first tasks undertaken by this group in 1966 was to address the need for reliable, comparable cost information to make it possible for the Department to have a truly independent capability for analyzing and estimating costs of new weapons systems.

We were handicapped by the shortage of adequate data from previous programs for use as the basis of estimating the cost of the new programs. Such estimates help DOD make better choices among competing development alternatives, help those who forecast fund requirements, and provide a cross check against contractor estimates.

What has been developed is an improved system for collecting the necessary data, called Cost Information Reports (CIR). CIR provides a means for collecting uniform sets of historical costs for contracts which are part of major weapon system programs. Cost analysis organizations receive, process, store, and use these with other data stored in regional data banks.

The CIR forms were designed for collecting cost and related information on hardware, software, and services acquired for major military programs. Of the five types of forms used for collecting these data, only the first is mandatory for all contracts in the program to be covered. The remaining four forms are used selectively.

Cost Information Reporting has been tailored to and established for a total of 44 major procurement programs to date. Reporting is in process in all three military departments within the Department of Defense.

Many of the management systems placed on contract in the past have related specifically to performance measurement—that is, to the appraisal of contractor performance in terms of cost, schedule, and technical achievement against the terms of the contract, during the period of contract performance. Performance history is always available at the end of the contract. Prudent management requires that there be visibility of what is going on *during* the contract's life. Different products, different contract terms, different circumstances all argue against the imposition of specific systems on contractors that would require them to operate internally in some invariable way. This led to what has been called the "criteria approach," particularly with respect to the procurement of major weapon systems. As currently being developed and tested, the "criteria approach" involves setting forth certain standards or minimum essentials for contractors' internal management systems and then relieving them from the requirement to operate or superimpose specific, Government-devised systems if their internal systems meet the criteria.

This is a new departure. It says, in effect, "We will specify the data we in the Department of Defense need from you, the contractor. We will not specify the accounting system or data collection system you must use to provide this data. Instead, you may use the management system you consider best for your own operation, provided that your system at least meets the standards or criteria we set forth describing a good system in the public interest." After long discussion, reflecting the difficulty inherent in devising anything that even remotely smacks of uniformity to be applicable across a wide spectrum, Department of Defense Instruction 7000.2, Performance Measurement for Selected Acquisitions, was issued on December 22, 1967.

Applicable at first only to contractors in major procurements, this Instruction states the following: "To provide an adequate basis for responsible decision making by both contractor management and DOD Components, contractors' internal management control systems must provide data which (1) indicate work progress, (2) properly relate cost, schedule and technical performance, (3) are valid, timely and auditable, and (4) supply DOD managers with a practicable level of summarization." It further specifies that the contractor need make no changes in his existing internal management systems except for those necessary

to meet the criteria and it requires the contractor to use data from his own management control system in reports to the Government. If demonstrated as complying with the criteria, the contractor's system may be certified as satisfactory for providing performance measurement data to all DOD Components, and his system therefore need not face multiple jeopardy every time the contractor negotiates a new contract. The criteria set forth in DOD Instruction 7000.2 cover the general areas of organization of work, planning and budgeting, accounting reporting, variance analysis, and revisions to budgets and plans.

The other small, new group we established is the Directorate for Management Systems Control, with four professionals assigned. It was given the task of devising ways to restrain the proliferation of management systems which is the other major job in the area covered by today's discussion. We decided to attack first the problem of proliferation of systems imposed on industry, and to leave until later the problem of proliferation *within* the Department. Fortunately, it happened that the large segments of American industry serving the Department expressed concern about proliferation at this same time, in a report of the Systems Management Analysis Group, called the SMAG Report, for short.

The SMAG report, prepared under the auspices of the Aerospace Industries Association, was presented to Deputy Secretary of Defense Cyrus Vance, and to the Assistant Secretaries of Defense, on May 12, 1966.

Secretary Vance responded positively to Industry's offer to assist the DOD in resolving the management control system problem. Because the subject matter pertained to a broad segment of American industrial activity, the National Aeronautics and Space Administration and the Council of Defense and Space Industry Associations were invited to participate in the development of a recommended course of action to deal with the problem. It was thought the Council of Defense and Space Industry Association (CODSIA) could help, for example, by identifying cases of proliferation and overlapping of systems that were visible from the industry side of the Government-industry interface. This industry help was obtained in strict compliance with DOD Directive 5030.13 on Advisory Committees, and it proved very useful to the Government.

Our first step was the development and approval of a charter outlining the purpose, function, responsibilities, and method of operation of the proposed venture. In November 1966, the charter was approved as being in the public interest. This signaled the formal creation of the DOD-CODSIA Advisory Committee for Management Systems Control "... for a 2-year period ending November 15, 1968 . . ." The Committee's charter has recently been extended for two years, to November 1970.

A comprehensive, three-phase Master Plan was constructed and was approved by Assistant Secretary Robert N. Anthony on January 13, 1967. This approval constituted completion of Phase I of the Master Plan, and commencement of Phase II.

The second phase centered around analysis of the need and use of management systems in certain selected areas. A separate Need/Use Analysis group was established to study each of the 5 of the most significant of some 19 subject matter areas, such as financial and schedule, integrated logistic support and work breakdown structures. The Need/Use Analysis Groups were unique in that they marked the first time a joint Government/Industry team, consisting of qualified personnel at the management level, had concentrated on the management system proliferation problem by examining the role that contractually applicable documents played in DOD management control systems.

The substantive work of the Committee was essentially completed by December 1967. After that, three months were used to analyze, assemble and edit the total product, and the report was published in March 1968.

With submission of this Report, the DOD-CODSIA Advisory Committee for Management Systems Control completed two assigned tasks: (1) It proposed a system to restrain the future proliferation of Defense Department-imposed management control systems, and (2) it made specific proposals for reducing the number and overlapping of systems that now exist. The first task was preventive, the second, corrective.

Here are the principal products of the DOD-CODSIA Advisory Committee's work:

An overall set of standards for management control systems to be used in major acquisitions.

A draft DOD Instruction to prescribe procedures for developing new management control systems.

A draft DOD Instruction to prescribe procedures for applying management control systems in the acquisition process.

Need/Use analyses of selected management control systems in 5 major areas: Systems Engineering/Design Criteria, Integrated Logistic Support, Work Breakdown Structure, Financial/Schedule, and Management System Source Documents issued by the Office of the Secretary of Defense.

A comprehensive inventory of management control systems identified as impacting on industry.

A definition of management control systems, and criteria for use in determining whether a system should be included in the inventory.

A comprehensive plan for implementing in Phase III the recommendations contained in the DOD-CODSIA Advisory Committee Report.

The drafts of the two proposed Instructions were fully staffed, amended and corrected, in the Department, and were approved and issued on June 6, 1968. They are:

DOD Instruction 7000.6—*The Development of Management Control Systems for Use in the Acquisition Process.*

DOD Instruction 7000.7—*The Selection and Application of Management Control Systems in the Acquisition Process.*

DOD Instruction 7000.6, covering the development of government management control systems, requires each DOD Component to submit a plan for any new management control system, or for any substantive revision to an existing management control system, to the Assistant Secretary of Defense (Comptroller), who, in conjunction with the Assistant Secretary having functional responsibility, will approve the plan or recommend changes. The DOD Component then will actually develop the new management control system, coordinating it within DOD, reviewing it with industry as considered appropriate, and submitting it to the ASD (Comptroller) for final approval and inclusion on the Management Control Systems List. This Development Instruction also contains guidance for internal DOD use in developing or revising management control systems. The guidance deals with the characteristics of a suitable management control system, including both content and relationships with other management control systems.

DOD Instruction 7000.7 covers selection and contractual application of systems. The objectives of this Instruction are three: (1) to assure that management control systems are used to assist in the management of the acquisition, rather than as ends in themselves; (2) to identify factors which should be considered in judging the nature, scope and appropriateness of the management control system documents to be placed on contract; and (3) to describe three modes or levels of management to be considered and reflected in application of the management control system requirements. These modes of government management are: *visibility, surveillance, and prior approval*. The mode to be employed in any situation depends on responsibilities of the buyer and the seller, the nature of the product and its procurement, the type and amount of the contract, as well as the program complexity. The Instruction requires that management control system documents to be used on a particular acquisition be selected from those listed on the Management Control Systems List. Those which are selected become a requirement of the contract, after approval in the normal procurement review process.

The Management Control Systems List is a compilation of all management system documents identified by DOD Components as impacting upon contractors, or as being appropriate for contractual application. The List therefore serves as a mechanism to check the proliferation of management system documents, because only management system documents on the List may be contractually imposed. The List will be centrally maintained by the Defense Comptroller, and the steps necessary to add or delete documents from the List are contained in the Development Instruction, 7000.6.

To help insure orderly implementation of this program, the DOD-CODSIA Advisory Committee submitted a proposed Phase III Implementation Plan. The Plan provided for an orderly transition from Phase II, covering the year of work of the Committee itself, to Phase III, involving mainly the staff offices of the Office of the Secretary of Defense, and the DOD Components.

The Final Report of the DOD-CODSIA Advisory Committee, including a detailed Phase III Implementation Plan, was endorsed by the Deputy Secretary of Defense on June 22, 1968, in these words:

"This report provides a sound basis for the analysis, revision and improvement of the Department of Defense Management Control System applied on contract.

The Assistant Secretary of Defense (Comptroller) is coordinating plans for the implementation of recommendations contained in this report. The net result should be a marked improvement in the management control systems we use in dealing with industry."

Successful execution of the two new instructions for controlling proliferation of management systems, and of the instruction on criteria for contractors' management control systems, it was realized, would depend on complete understanding of their objectives and confident knowledge of their details throughout the Department; and therefore we have conducted numerous presentations and training sessions in the field, involving more than 2,000 people to date.

This completes my summary of what we have done in the last two years in seeking to insure better and fewer management systems in the procurement process.

Current and future developments

We in the Department of Defense are not by any means satisfied yet with our efforts to develop systems and procedures to help project managers and procurement officers get the most for their contract dollar, on schedule, and up to specification. We have made progress. We have a long way to go. We think we understand the problem, and have undertaken to work at it in an orderly way, using the resources of skilled people and modern computer technology.

In our program for reducing and controlling proliferation of management systems with DOD Instructions 7000.6 and 7000.7 as tools, we are about to issue the Management Systems Control List and will shortly begin a systematic effort to reduce the some 1000 systems catalogued in it by a significant percentage. There should be dollar savings, as contractors begin to be freed of multiple separate demands for similar or nearly similar data from a variety of Defense customers. The new systems that are developed and applied under the discipline of this program should be simpler, more useful, easier to operate, and more reliable.

In our implementation of DOD Instruction 7000.2 on performance measurement, we are developing a guide for use by contractors in insuring that their internal systems satisfy the published criteria, and for use by Defense evaluation teams and auditors in appraising contractors' systems for certification.

In the public interest, we can never be satisfied, and must continue to work away at the problem.

It is our aim to help insure and maintain the kind of visibility, and in appropriate cases, actual control, that Defense project managers need to have, through management systems that are effective and efficient—and few as possible.

ECONOMICS OF MILITARY PROCUREMENT

THURSDAY, JANUARY 16, 1969

CONGRESS OF THE UNITED STATES,
SUBCOMMITTEE ON ECONOMY IN GOVERNMENT
OF THE JOINT ECONOMIC COMMITTEE,
Washington, D.C.

The Subcommittee on Economy in Government met, pursuant to notice, at 2:05 p.m., in room G-308, New Senate Office Building, Hon. William Proxmire, chairman of the subcommittee, presiding.

Present: Senators Proxmire and Symington; and Representative Griffiths.

Also present: John R. Stark, executive director; and Richard Kaufman, economist.

Chairman PROXMIRE. The Subcommittee on Economy in Government will come to order.

This afternoon the subcommittee resumes the hearings begun last November on the "Economics of Military Procurement."

This subcommittee has had a continuing interest in military procurement dating back many years. Now, I would like to make it clear what the role of this subcommittee of the Joint Economic Committee is with regard to military procurements. We are not a legislative committee. We do not consider legislation, nor do we approve or reject legislative proposals. We do not decide policy. Decisions relating to specific proposals are, of course, made by the appropriate committees.

In the case of military procurement, decisions affecting the substantive legislation and the authorization of funds are made by the Armed Services Committees of the Senate and of the House.

I might say I have great regard for the chairmen of both the Armed Services Committees—in the House and in the Senate. They are extraordinarily able men, and they are very deeply concerned with the kind of issues we are studying.

I wanted to make the jurisdictional matter clear because we have had some attention on our findings. But we must continuously recognize that the whole purpose of our inquiry is to determine the effect of military procurement on the economy, which is very substantial indeed.

The functions of the Joint Economic Committee are to advise the Senate and the House on economic matters. We do this by making continuing studies on matters relating to the national economy.

In studying the national economy, one of the most important factors we have to deal with is Government spending, the impact of Government spending on the economy being obviously very great.

The President's Budget released only yesterday reveals the enormous magnitude of Government spending and the trend upward.

Within Government spending, the largest single item is defense spending. Military procurement, the purchase of weapons and other hardware, by the Department of Defense is the largest single item within defense spending. Last year we spent \$44 billion on military procurement. We are concerned about the impact of the methods of procurement as well as the obvious dollar impact of procurement on the economy of the Nation, for procurement can be done efficiently or inefficiently, can be well-managed or mismanaged, can be done economically or wastefully, and to the extent it is wasteful and mismanaged, it can have a particularly inflationary effect on the economy.

The Subcommittee on Economy in Government is vitally concerned with these matters. Previous studies and investigations revealed widespread waste and mismanagement in military procurement.

Our inquiries and formal recommendations have led to legislative action in other committees, and numerous improvements in procurement policies and practices, and a greater understanding of the problems.

Today's hearing is a followup of the November hearings during which the question of cost controls and cost overruns were discussed. The C-5A cargo program was cited as an example of the issues involved.

Because the magnitude of the overruns in this particular program were alleged to be about \$2 billion more than the contract price agreed upon—I repeat, \$2 billion more—I asked the General Accounting Office to make a special investigation of the circumstances surrounding the overruns. I have also asked the Secretary of Defense to make his own independent study and to cooperate with the GAO.

At today's hearings we will receive the findings of the GAO and the testimony of the Air Force officials about the C-5A and similar contracts.

I want to make it very clear that while the C-5A is a very, very important element, especially because so much money is involved and because it all by itself has a distinct effect on the economy, nevertheless it is only one example of many, and this committee does not mean because we have concentrated on the C-5A that we do not recognize that there are other examples, maybe some of them are even more serious than the C-5A, and we do not expect, as I say, to make any kind of decision in this committee on the C-5A, but simply to disclose as much information as we can to give us a better understanding of the impact on the economy of the procurement, and we hope to make findings that will make for substantial improvement in this enormously expensive area.

Our first witness, I am delighted to say, is Mr. Frank Weitzel, and he is accompanied by Mr. Charles Bailey, Director of the Defense Division of GAO.

Mr. Weitzel is Assistant Comptroller General. He has done a magnificent job in the years he has been in the GAO, and I understand this may be his last congressional appearance. Are you just about to leave the Government, Mr. Weitzel?

STATEMENT OF HON. FRANK H. WEITZEL, ASSISTANT COMPTROLLER GENERAL OF THE UNITED STATES; ACCOMPANIED BY CHARLES M. BAILEY, DIRECTOR, DEFENSE DIVISION; ROBERT F. KELLER, GENERAL COUNSEL; JAMES H. HAMMOND, ASSOCIATE DIRECTOR, DEFENSE DIVISION; AND GEORGE GEARINO, SUPERVISORY ACCOUNTANT, ATLANTA REGIONAL OFFICE, GENERAL ACCOUNTING OFFICE

Mr. WEITZEL. I am; that is correct, Mr. Chairman, and I am delighted to have it before your subcommittee.

Tomorrow is my last day in office after an exciting 43 years in GAO.

Chairman PROXMIRE. How many years?

Mr. WEITZEL. Nearly 43 years.

Chairman PROXMIRE. It is hard to believe. You do not look old enough to have served so long.

Mr. WEITZEL. The last 15 years I have served in my present position, and it has been my pleasure to work with many leaders and committees of the Congress, and I am proud to be working in an agency of Congress.

Chairman PROXMIRE. Forty-three years; for heaven's sake!

Mr. WEITZEL. I know this seems like a lot to you because you are much younger than I am.

Chairman PROXMIRE. I do not know how you fellows who look 45 years old do it, but I guess GAO is a place where you keep your youth somehow. Go right ahead.

Mr. WEITZEL. Some days, Mr. Chairman, it does not seem like that, but may I say that I am also glad that Mrs. Griffiths is here today. It has been my pleasure to appear before her on many occasions and to work with both of you on many things that we think have contributed to the interest of Government efficiency, economy, and effectiveness. We know that you are going to go on, the GAO is going to go on, and I am certainly going to keep my interest in all these things.

Again, I say, I am pleased to appear before your subcommittee today. On November 23, 1968, you requested the General Accounting Office to report to the Subcommittee on Economy in Government our findings related to the following areas:

1. An investigation of the cost overruns and total costs for the Lockheed C-5A cargo plane to include analysis of the costs of R. & D. and production of the plane, engine, and spares.
2. How much in progress payments has been paid to Lockheed and how much actual progress has been achieved in performance of the contract.
3. Whether the progress payments have been used by Lockheed or GE to finance nondefense ventures, such as Lockheed's commercial version of the C-5A.

GAO CONCERNED OVER C-5A OVERRUN

At the outset, Mr. Chairman, I would like to stress that we share the subcommittee's concern with the indicated large overrun on the C-5A program. We are concerned, too, with the questions raised as to the effectiveness of the type of contracting used in this case as against other more conventional types.

TOTAL PACKAGE PROCUREMENT

The C-5A contracts with Lockheed and General Electric were the first of what has now become known as total package procurement. This method of procurement anticipates obtaining under a single contract, containing price, performance, and schedule commitment, the maximum practical amount of design, development, production, and support needed to introduce and maintain a system or component in the inventory.

Under these contracts, it was envisioned that the contractors would provide the development, production, and support of the C-5A airplane and TF-39 engine in one total package that included price and performance commitments. The contract for the airframe provided for five R.D.T. & E. aircraft, an initial production run of 53 airplanes and an option quantity of 57 additional airplanes.

REPRICING FORMULA TO PROTECT CONTRACTOR

In order to protect the contractor against excessive losses on the first 53 production airplanes, a formula was included in the contract increasing the price of the total quantity of airplanes—115 airplanes—if costs on the initial production run exceeded the ceiling price. On the other hand, if the contractor had experienced lower than target costs, the price would be reduced.

The engine contract with the General Electric Co.—GE—provided for 54 R.D.T. & E. engines, an initial production run of 228 engines, and an option quantity of 279 additional engines. As in the case of the airframe contract with Lockheed, a clause was inserted in the engine contract to protect the contractor against excessive losses on the initial production quantity. The formula under this clause provides for increasing the price of the total quantity of engines—561—if costs on the initial production run exceed the ceiling price. If the contractor experiences lower costs, the price will be reduced.

AIR FORCE DENIES REQUEST FOR COST ESTIMATES

Pursuant to your request, representatives of the GAO met with Air Force officials to discuss certain information that we believed necessary to provide an initial base for our review. Specifically, we asked for cost information and estimates that the Air Force or Lockheed had prepared relating to the cost to produce the first 58 airplanes. In addition, we requested information on causes of the overrun position on the first increment of airplanes, studies made by the Air Force to evaluate need for the C-5A airplanes, and whether January 31, 1969, was a firm date by which the Government must exercise its option to procure the 57 additional airplanes in accordance with the contract terms.

At that time, the Air Force stated that the current estimate of cost to complete the first 58 airplanes constituted an important element to be considered in negotiating for the option quantity; and that this information should not be made public because its disclosure might compromise the negotiations then underway between the Air Force and Lockheed.

AIR FORCE PROVIDES COST INFORMATION TWO DAYS BEFORE HEARING

We were told by Air Force officials that they could provide us the information requested if we could assure them that it would not be made public. Since we were obtaining this information in response to the committee's request, we were not in a position to give the Air Force this assurance. However, in reply to a letter dated January 9, 1969, which I have submitted to you as appendix I (see p. 257) in which we asked the Air Force to confirm that certain data we had requested would not be made available because of the negotiations in progress, the Assistant Secretary of the Air Force—Installations and Logistics—stated that negotiations had progressed to the point where it was possible to release data to us.

These data were received in the afternoon of January 4, 1969, just the day before yesterday. I have submitted a copy of the Air Force letter of January 14, 1969, as appendix II (see p. 258).

GAO UNABLE TO ANALYZE OR VERIFY COST INFORMATION

During the short time we have had these data we have not been able to analyze or verify the information received. However, cost data provided in this letter indicate that their current cost estimate for Lockheed to develop and produce 58 C-5A airplanes is \$2.436 billion.

AMOUNT OF OVERRUNS

This amount exceeds the Air Force 1965 estimate of Lockheed's cost of \$1.470 billion by about \$966 million. The current Air Force estimate exceeds the target price included in Lockheed's contract of \$1.406 billion by an additional \$64 million. Data provided us at Lockheed indicated that about \$622 million of the cost overrun is anticipated in the airframe costs of the production airplanes. The major portion of the remaining overrun costs is expected in the development effort of the program.

The Air Force cost data also indicate that costs for the engines provided by General Electric are expected to exceed the initial estimate by \$119 million.

PRICING EFFECT OF OVERRUNS

Under the provisions of the contract the pricing effect of these overruns on the total C-5A program will be dependent upon the actual costs of initial production runs as well as the number of aircraft and engines procured. However, the cost overruns in the initial production runs will have a significant impact on the price of the second production runs and the total target cost of the program if contract pricing formulas are used in procuring additional quantities of airplanes.

REASON FOR OVERRUNS

We have been unable to identify the reasons for the indicated significant cost overruns. However, in discussing this matter, Air Force and Lockheed officials at the contractor's plant advised us that there were general overall increases which were not attributable to any particular system or subsystem. They advised us that current inflationary trends and full production schedules of suppliers contributed to increased costs.

In its letter of January 14, 1969, the Air Force stated that according to their best estimates, which are necessarily broad, the increase in costs from their 1964 estimate of \$3.116 billion was made up of about \$500 million resulting from inflation, \$350 million related to an 83,000-pound increase in the gross weight of the airplane to increase its capability, and \$400 million attributed to "technical and schedule problems."

AIR FORCE REQUIREMENT STUDIES UNAVAILABLE

We were also informed in the Air Force letter of January 14, 1969, that the requirement studies we requested could not be made available to us. Specific C-5A requirements studies are a part of overall force structure and operational planning for strategic mobility and, according to the Air Force, are not releasable. They stated that they would be prepared to address the broad question of requirements during their forthcoming testimony before your committee.

COSTS OF L-500

With respect to costs being incurred for the commercial version of the C-5A airplane, Lockheed officials advised us that some work has been done in this area. Costs related to this work have been accumulated under a separate work order structure in accordance with Lockheed's cost-accounting system. We have identified certain work orders that have been established for the commercial L-500 program and found that costs have been charged against these work orders. However, in the limited time available, we were not in a position to determine whether all costs related to the commercial work were properly recorded.

We have noted that the contract terms provide that where commercial sales result from the development of the C-5A airplane, the contractor shall negotiate with the Government either an equitable reduction from the final contract price or an equitable payment to the Government for the proration of nonrecurring program costs, learning benefits from military production, and research and development costs applicable to this contract.

PROGRESS PAYMENTS

Regarding progress payments, we found that Lockheed can be reimbursed up to 90 percent of incurred costs. However, after September 1968, if the contractor's unreimbursed costs are less than \$50 million, progress payments will be paid only up to 70 percent of incurred costs. As of December 27, 1968, Lockheed reported incurred costs of about \$1.278 billion. A total of \$1.207 billion of these costs have been reimbursed through progress payments. To date, Lockheed has completed assembly of four C-5A airplanes and another 17 units are in various stages of assembly.

As of December 1, 1968, General Electric informed us that total costs incurred on the C-5A engines were about \$351 million, including payments to subcontractors and material in inventory. A total of approximately \$321 million of these costs have been reimbursed through progress payments. In the case of GE progress payments are reimbursed up to 90 percent of incurred costs except, that after September 1, 1968, if total unreimbursed costs are less than \$20 million,

progress payments will be paid only up to 70 percent of incurred costs. As of December 31, 1968, a total of 62 engines had been delivered and 13 engines were in various states of assembly.

Under current Department of Defense regulations costs included in the request for progress payments include all costs which are reasonable, allocable to the contract, and consistent with sound and generally accepted accounting principles and procedures including costs identified through the accrual method of accounting.

Just as an aside, Mr. Chairman, our secretary spelled this "a cure-all" method of accounting, but I am afraid we have not arrived at it yet.

Chairman PROXMIRE. I was looking forward to it.

Mr. WEITZEL. This we will arrive at in our feasibility study.

Both Lockheed and General Electric's procedures for reporting costs incurred for progress payment purposes provide for including accrued liabilities such as unpaid material invoices, billings from subcontractors and allowable overhead. These procedures appear to be in compliance with existing regulations and we understand they are followed by many other contractors doing business with the Government.

We attempted to determine the extent of accrued liabilities included in Lockheed's progress payments and found that such information is not readily available. Therefore, we are unable to determine if any part of these progress payments were used to finance the commercial effort associated with the L-500 program.

OPTION EXPIRES JANUARY 31, 1969

The Air Force did advise that January 31, 1969 is a firm date for exercising the option for additional aircraft, under the current contract terms.

Mr. Chairman, that completes our statement and we will try to answer any questions that you might have on this matter within our limited capability in terms of the amount of research we have been able to do since we got this information from the Air Force.

Chairman PROXMIRE. Thank you very much, Mr. Weitzel.

(Appendixes I and II, referred to, follow:)

APPENDIX I

COMPTROLLER GENERAL OF THE UNITED STATES,
Washington, D.C., January 9, 1969.

B-162578.

The Honorable the SECRETARY OF THE AIR FORCE.

DEAR MR. SECRETARY: As you are aware, we have been requested by the Chairman, Subcommittee on Economy in Government, Joint Economic Committee to investigate the reported cost overrun and total costs of the C-5A aircraft program and to provide testimony to the Committee on our findings on January 17, 1969.

We are currently preparing our statement for this Committee and would like to confirm with your office the position taken regarding our requests to the Air Force for certain information.

Specifically, we are interested in the Air Force position on our requests for:

1. Supporting cost data for the estimated cost figures included in the Air Force press release for the first 58 aircraft and the 120 aircraft ultimately contemplated.
2. The most recent study prepared by Lockheed depicting the current estimate of the cost to complete the production of the first 58 aircraft.

3. The Air Force analysis of the Lockheed cost study and the estimated costs arrived at by the Air Force to complete the initial procurement of 58 aircraft.

4. Studies performed by the Air Force to evaluate and establish the current needs for the C-5 aircraft.

5. Information on causes for the overrun position on the C-5 aircraft.

6. An explanation whether the January 31, 1969, reported date for exercising the option for additional aircraft was a firm date.

Our interest in obtaining this confirmation is to be able to communicate in our statement a clear understanding of the Air Force position on this matter. We would appreciate hearing from you in this regard by January 13, 1969 in order that we may consider your reply in our statement.

Sincerely yours,

(Signed) ELMER B. STAATS,
Comptroller General of the United States.

APPENDIX II

DEPARTMENT OF THE AIR FORCE,
Washington, January 14, 1969.

Hon. ELMER B. STAATS,
Comptroller General of the United States.

DEAR MR. COMPTROLLER GENERAL: This is in response to your letter of January 9, 1969 regarding the information you desire on the C-5A program.

As indicated in our previous discussions last month, detailed cost data were being withheld in order to avoid possible compromise of negotiations then underway between the Air Force and Lockheed. Circumstances of the negotiations now make it possible to release the data to you at this time.

In answer to the first question, the estimated cost figures used in the press release should be clarified as follows: the original \$3.116 billion 1964 estimate did not include the increase in cost associated with the increase in size of the aircraft from 645,000 to 728,000 pounds, the increase in load capacity resulting therefrom, and an increase in flight range. The original 1964 Air Force estimate for 120 airplanes, adjusted to reflect this increased capability, should be \$3.466 billion. The current Air Force estimate for 120 airplanes is \$4.348 billion. Thus, the increase in estimated cost from 1964 to the present is 25% rather than the 39% as indicated in the press release. The 41% figure for 58 aircraft referred to in the press release would be reduced proportionately. Also, the 1964 estimate was in constant dollars and thus did not include any allowance for inflation. The current estimates do include the inflationary trends of the economy as we now project it through the life of the contract. Included as Attachment #1 is an overall breakdown of program costs to support the press release. Also, we are enclosing a copy of the 1964 Air Force study and cost estimate for the C-5A, which is the supporting data for the \$3.116 billion estimate.

In answer to your questions two and three, the following is submitted.

In October 1968, the Aeronautical Systems Division made an independent cost estimate of \$1,525.9 million for production Run "A", exclusive of production Run "B" and RDT&E costs. The production Run "A" costs were for Material Program Codes 1010 (air vehicle), 1060 (systems management), and 1070 (data) only. The Lockheed estimate for these same three Material Program Codes was \$1,457.0 million. Differences between government and Lockheed cost estimates were found in practically all major areas—engineering, tooling, manufacturing, quality assurance, materials, subcontracts and general and administrative costs. It should be pointed out that the Aeronautical Systems Division cost team firmly believes that Lockheed was overly optimistic in their estimate of \$1,457.0 million. In the event you need clarification or additional backup information, please feel free to contact the C-5A Systems Program Office (SPO) at Wright-Patterson Air Force Base, Ohio.

The requirements studies which you requested cannot be made available. Specific C-5A requirements studies are a part of overall force structure and operational planning for strategic mobility, and are not releasable. We are prepared to address the broad question of C-5A requirements insofar as possible during the forthcoming hearings before the Joint Economic Committee, but we cannot do so in the detail which you have requested.

As indicated in our press release, the causes for the overrun position on the C-5A program are mainly attributable to increased cost for labor and material re-

resulting from the combination of a significant war effort coupled with unprecedented demand for civilian aircraft both of which occurred after the original estimates, the introduction of new technology, and contractor initiated modifications to overcome technical difficulties inherent in the development of all new aircraft. Our best estimates, which are necessarily broad, are \$500 million resulting from inflation, \$350 million related to an 83,000 pound increase in gross weight of the aircraft and \$400 million attributable to technical and schedule problems. If you desire any additional information regarding this overrun, again feel free to call the C-5A SPO.

In answer to question six, January 31, 1969 is a firm date for exercising the option for additional aircraft, under the current contract terms.

I sincerely hope the information provided above is sufficient to give you a clear understanding of the Air Force position on this matter. The Air Force policy continues to be one of providing the General Accounting Office with all data necessary for the prompt and accurate completion of Congressional requested requirements.

Sincerely,

ROBERT H. CHARLES,

Assistant Secretary of the Air Force (Installations and Logistics).

ATTACHMENT 1

COST INFORMATION C-5A

\$2 billion target price (58 aircraft) :

Lockheed -----	\$1, 414
GE -----	466
Subtotal -----	1, 880
Abnormal escalation -----	127
Total -----	¹ 2, 007

\$2.4 billion ceiling (58 aircraft) :

Lockheed -----	1, 672
GE -----	546
Subtotal -----	2, 218
Abnormal escalation -----	127
Total -----	² 2, 345

¹ \$2,000,000,000.

² \$2,400,000,000.

58 AIRCRAFT

[In millions]

	October 1965 estimate	Current estimate
Lockheed -----	\$1, 470	\$2, 436
GE -----	467	586
Air Force adds ¹ -----	325	232
Total -----	2, 262	3, 254
Rounded -----	2, 300	² 3, 200

120 AIRCRAFT

	October 1965 estimate	Current estimate
Lockheed -----	\$2, 027	\$3, 169
GE -----	583	754
Air Force adds ¹ -----	477	425
Total -----	3, 087	4, 348
Rounded -----	3, 100	² 4, 300

¹ Air Force adds include: 5 run C aircraft, engineering changes, 1st destination transportation, Government-furnished aeronautical equipment, base level aerospace ground equipment.

² 41-percent increase.

39-percent increase.

Chairman PROXMIRE. Since Secretary Charles is here, what I am going to do primarily in questioning you, Mr. Weitzel, is to direct it at the difficulties which you have had in getting this information, and try to develop out of our questioning what we can do to give you the kind of authority and the kind of ability which I am sure Congress intended you to have so that you can find out information for us when we direct you to get it.

Then Secretary Charles can answer directly on the details that you have revealed to some extent in your statement, as far as I am concerned, on the C-5A.

As you know, following the November hearings, I wrote to Mr. Staats, the Comptroller General, and requested a complete investigation of cost overruns and total costs of the Lockheed C-5A cargo planes.

GAO UNABLE TO OBTAIN ESTIMATES

Do I understand correctly that GAO was not able to obtain current estimates of costs to complete the first 58 planes until January 14?

Mr. WEITZEL. I believe this is correct, Mr. Chairman. The reason given us previously by the Air Force was that this constituted information that was being used in current negotiations, and that disclosure of it might have some adverse effect on the negotiations. The Air Force will be here, of course, to speak for themselves on this matter.

Also, I believe we now have the latest obtainable cost reports by the contractors in this area, which we have not had an opportunity to confirm.

Chairman PROXMIRE. But you feel that this is a full explanation of why it took so long to obtain this information from the Air Force?

Mr. WEITZEL. Mr. Bailey, do you know of any other reason? We did get certain information from them, and also in their letter of January 14, they told us that if we feel that we need any additional information that we should feel free to contact the systems program office at Dayton which, of course, we have not had an opportunity to do yet.

I do not know of any other cause to attribute this to.

I will call on Mr. Bailey to state whether he knows of any.

Mr. BAILEY. Mr. Chairman, I know of no other cause. This was the reason that we were given at the time; the stated reason they were not able to release this information to us was that it might have an effect on the negotiations they were conducting for the follow-on portion of the contract.

LOCKHEED REFUSES TO DISCLOSE COST ESTIMATES

Chairman PROXMIRE. What efforts did you make—did GAO make—in the course of the investigation since November 23 to obtain the cost information directly from Lockheed? What success or obstacles did you meet in trying to get it from the company?

Mr. WEITZEL. I would like Mr. Bailey to comment on this, and we also have a gentleman from our Atlanta office, Mr. Gearino, and we have Mr. Hammond, who is Associate Director of the Defense Division. It was under Mr. Bailey's and Mr. Hammond's supervision that these efforts were directed, and Mr. Gearino, took part in them him-

self. We do have considerable information on this, if I may turn this over to Mr. Bailey.

Chairman PROXMIRE. Yes, indeed.

Mr. BAILEY. We were able to obtain some cost reports that the contractor had submitted to the Air Force as a part of the normal flow of information from the contractor to the Air Force.

But in view of the fact that we do have with us Mr. Gearino, who is completely familiar with it, it might be well for him to answer the question.

Chairman PROXMIRE. Mr. Gearino, come to the table, please.

Mr. GEARINO. If I understand your question, Mr. Chairman, it is, "What efforts did we make at Lockheed to obtain the information?"

Chairman PROXMIRE. That is correct.

Mr. GEARINO. On November 15 we requested the information from the contractor; that is, the study he prepared which indicated the amount of overrun that he anticipated on the program. The contractor's officials informed us that they prepared this for the Air Force and they preferred that we ask them for it. Local Air Force officials at Lockheed requested that we ask the systems program office for this information. We subsequently wrote a letter, on November 22, to the system program office, and we have as yet not had a reply.

Chairman PROXMIRE. When did you first ask Lockheed for the information?

Mr. GEARINO. On the 15th of November and again on the 12th of December.

Chairman PROXMIRE. Again, what position did they take in saying—in not providing you with the information you requested?

Mr. GEARINO. It is my understanding that they had contacted the systems program office, and they told me that the systems program director had requested that we ask him for this information rather than Lockheed.

GAO ABLE TO OBTAIN RECORDED COSTS

Chairman PROXMIRE. All right.

Thank you, sir.

Did you find in the course of this investigation that you are limited in your statutory authority, Mr. Weitzel, to fully investigate the cost overruns in this program? Do we need new law?

Mr. WEITZEL. I do not know that we could recommend new law on the basis of our experience, Mr. Chairman. We have got considerable information on recorded costs. It is the projected costs where we had difficulty in getting information, and this on the basis that these figures were being used in contract negotiations.

As you know, our statute does give us authority in the case of negotiated contracts to look into any costs or transactions directly pertinent to the contract and, as I understand it, we were given access to the incurred cost records; is that correct, Mr. Gearino?

Mr. GEARINO. Yes.

Mr. WEITZEL. And have considerable information as to those cost records and as to the trend in those incurred cost reports during the latter part of the calendar year 1968.

It was the Air Force projection of costs to completion that we did not have until the figures were released to us by the Air Force a day or two ago.

EFFECTS OF TOTAL PACKAGING ON DISCLOSURE OF COSTS

Chairman PROXMIRE. If we continue having this total package procurement with contracts that go over many years, this goes over a number of years, won't we constantly be prevented from getting the kind of information that we need, and certainly definitely be prevented from getting it in any timely way?

Mr. WEITZEL. I can see many benefits that would flow from having information of this sort. However, I can also see that certain types of information, if they become public during the course of negotiations, could tip the Government's hand or be a premature disclosure of information detrimental to the Government's interests.

Now, the General Accounting Office has insisted on its right to all pertinent cost information under negotiated contracts, and when the negotiations are completed we normally get this information. We also get performance cost information under negotiated contracts similar to that provided to Defense Department auditors under the law you sponsored and which was enacted during the last session of Congress.

Chairman PROXMIRE. This is the difficulty, of course, of trying to solve this problem with a law and, at the same time, I understand your position. You are in a very delicate position with the Air Force and Lockheed. It just seems to me you have to press hard and satisfy yourself at least so you can, in turn, try to satisfy congressional committees that there is a legitimate reason for holding this up.

It is my understanding, and I could be completely misinformed, it is my understanding that Lockheed and the Air Force have an enormous amount of information that we do not have about each other, and that this argument about negotiations is really pretty hard to support. Are you in a position to give us a judgment on that?

Mr. WEITZEL. I doubt it, not having seen what information they may have that we have not yet had access to, and we still do not have all of the studies that have been made by the Air Force, do we, Mr. Bailey?

Mr. BAILEY. No.

Mr. WEITZEL. Current studies the Air Force has made of Lockheed projections, that it would cost \$1.457 billion for the airplane, systems management, and data for the first 53 airplanes, indicate the Air Force estimates Lockheed's costs will be \$1.525 billion. We do not have the details on these studies, but we have been invited to ask the Systems Program Office at Dayton, and we shall certainly do this.

So I do not know how much information we may ultimately get. It is a question of balance, I suppose, between information that is sensitive from the standpoint of disclosure, and information which should be given to the independent audit agency of the Congress. However, we have insisted on access to all information that our statutes provide us with the right to require.

We have not generally, as far as I know, insisted on having access during negotiations to information that is critical to and currently being used in negotiations.

One way a congressional committee might obtain such information would be to ask the GAO to lend people to the committee, and then exercise the committee's subpoena power to obtain the information from the executive agency.

AIR FORCE TO BUY ADDITIONAL C-5A PLANES

Chairman PROXMIRE. You see the difficulty is that I have a release here from the Air Force, just today, reporting that the Air Force is to buy additional C-5A aircraft. They are going to go ahead and do it, and you are still trying to get information on it.

Mr. WEITZEL. This is correct.

Chairman PROXMIRE. This may be a completely properly decision, and I personally am not going to question this at any time in the hearings, but I just want to bring this out as a matter of understanding what kind of information Members of the Congress are going to have in this kind of thing. You at the GAO are our watchdogs, you are the auditors, accountants, and experts; you are the ones authorized to go in and get the information.

Mr. WEITZEL. It is public disclosure, Mr. Chairman—

Chairman PROXMIRE. And it seems to me we are in a pretty feeble position to determine this.

PUBLIC DISCLOSURE PROBLEM

Mr. WEITZEL. It is public disclosure that they found problems with and, as I mentioned in my statement, they told us they would give us the information if we would promise we would not make it public. Of course, we were not going to make any such commitment.

Chairman PROXMIRE. That means you cannot report to Congress; is that correct?

Mr. WEITZEL. It would amount to that, sir, unless the congressional committee also made the same promise. When contract negotiations are in progress, I think we both can see—you do not have to agree with me, but I can certainly conceive that there could be cases where the Government may have a quite different estimate of the cost of completing certain work than a contractor might have and that disclosure of the Government's estimate might affect the negotiations.

Now, we understand here the Government had a higher estimate of cost to completion than Lockheed did. I do not know whether they discussed this at the negotiating table, but I can see if they did it would not encourage Lockheed to come down in its estimate in dickering with the Government over any future costs. It does have some effect on the bargaining position of either party to a negotiation if he discloses everything to the public before the negotiations are completed.

Chairman PROXMIRE. I am going to yield to the distinguished Senator from Missouri, who is extremely expert in this field, and who is a member of the Armed Services Committee, as well of this committee. And, as we all know, he was the first, and a great Secretary of the Air Force, Senator Symington.

Senator SYMINGTON. My able chairman is very kind. He has forgotten more in this field than I will ever know.

AIR FORCE REFUSES TO DISCLOSE COST ESTIMATES

Mr. Weitzel, what was the information the Air Force said they would give you which you could not give the Congress?

Mr. WEITZEL. It was information as to the projected costs to complete the first 58 airplanes.

Senator SYMINGTON. Why wouldn't they give you that information?

Mr. WEITZEL. These were estimated costs.

Senator SYMINGTON. But why wouldn't they give them?

Mr. WEITZEL. They said—and we now have their written statement—that they felt that public disclosure would affect the negotiations.

Senator SYMINGTON. We get a good deal of classified information from the General Accounting Office.

Mr. WEITZEL. This is correct.

Senator SYMINGTON. It is classified and given to you and you classify it and give it to us.

Mr. WEITZEL. We use the same classification that the military does. On this I suppose it would not necessarily be classified military secret or confidential, but they would feel it should be restricted.

Senator SYMINGTON. All right.

Then why couldn't they give it to you to give us on a restricted basis?

Mr. BAILEY. We did not explore this possibility with the Air Force.

Senator SYMINGTON. You did not really want the information?

Mr. BAILEY. No, sir; it was not that.

Senator SYMINGTON. What was it then?

Mr. BAILEY. We had been asked by this committee to get the information for the committee and, at the time we asked the Air Force for the information, we were informed that it could be made available to us if it were not made public. We were not in a position to assure them that the committee would not make the information public.

Senator SYMINGTON. Well, did you notify the committee to that effect?

Mr. BAILEY. Let me verify that with Mr. Hammond.

Mr. HAMMOND. We did not at that time formally advise the committee, but we did later advise the committee staff.

Senator SYMINGTON. When did you ask for the information?

Mr. HAMMOND. At Lockheed we asked for it on about the 15th.

Senator SYMINGTON. Of what?

Mr. HAMMOND. Fifteenth of November—and we wrote a letter to the Air Force System Program Office on November 22. I do not have the exact date, but probably within a week after the 23d of November we also requested the information of the Air Force in Washington.

Senator SYMINGTON. Then what happened?

Mr. HAMMOND. We told them we wanted information as to the cost of A run plus the estimated cost to complete the first 58 aircraft. They told us that the estimated costs of completing the first 58 aircraft were an important element for consideration in the second production run, and that they could not make this available to us. About that time—I do not have the dates but I can furnish them—Mr. Staats called—

Senator SYMINGTON. You are giving us a lot of detailed information; but what I would especially like to know is when did you receive information that they could not give you this information; and when did you report that to this committee?

Mr. HAMMOND. I believe I can get you that information.

Senator SYMINGTON. Was it a week or two weeks?

Mr. HAMMOND. I would say about a week or 10 days after. I can get you the exact date; yes, sir.

Senator SYMINGTON. Then what happened?

Mr. HAMMOND. In the meantime, Mr. Staats got in touch with the Secretary of the Air Force and asked him for this information, and he said he would look into it and call back.

He called back and came up with basically the same answer, that this information was an important element in the second run.

Senator SYMINGTON. Start from the 23d.

Mr. HAMMOND. I do not have a chronology of that.

Senator SYMINGTON. Please file that for the record.

Then what happened?

(The following information was subsequently supplied by the GAO:)

Chronology of events

November 15, 1968: GAO inquired at Lockheed about reported cost overruns on C-5A program. Advised by Lockheed officials that a cost study had been made for the Air Force and that this study should be requested from the Air Force. Lockheed cost study was requested from Chief, Contract Administration AFPRO Lockheed. Advised that an analysis of this study had been made by the Air Force and DCAA. Later told that GAO request had been forwarded to the System Program Office (SPO) and that the SPO stated that GAO should make request directly to the SPO.

November 22, 1968: Letter from GAO to SPO formally requested Lockheed cost study and Air Force analysis.

November 23, 1968: Date of request from Subcommittee on Economy in Government to make investigation of cost overrun.

November 27, 1968: GAO held initial meeting with Air Force officials in Washington and requested cost and other data on C-5A airplane program.

December 2-6, 1968: GAO held telephone discussion with Air Force officials concerning request.

December 5, 1968: GAO met with Mr. A. E. Fitzgerald, Air Force regarding cost figures reported in his testimony and other data on C-5A airplane.

December 10, 1968 and December 12, 1968: Telephone discussions between Comptroller General and Secretary of Air Force in which Air Force stated it was conducting negotiations with Lockheed and cost information requested couldn't be made public.

December 11-12, 1968: GAO held discussions with Lockheed Vice President in charge of C-5A program and Air Force Chief, Contract Administration at Lockheed regarding reasons for cost overrun and other factors related to the C-5A program. Continued effort by GAO at Lockheed realigned to consider conditions regarding availability of cost information at this time.

December 17, 1968: GAO met with Mr. A. E. Fitzgerald and other Air Force officials concerning management reports on C-5A program.

December 18, 1968: GAO requested suboffice at Dayton to obtain cost information and other data from General Electric.

December 19, 1968: GAO met with Subcommittee Staff to report progress regarding Subcommittee request on C-5A program.

December 23, 1968: Date of letter from Subcommittee advising of the hearing date and noting difficulties encountered by GAO in obtaining cost information.

December 31, 1968: GAO received reply from Dayton suboffice regarding request for cost information at GE. Advised that GE could not provide requested cost estimates and cost reports because Air Force stated that data included forecasts of cost and for this reason should not be furnished to GAO.

January 2, 1969: GAO formally summarized, in letter to Subcommittee, results of activities to date on C-5A request.

January 9, 1969: GAO requested from the Air Force in writing, positions on request for cost information and other data.

January 14, 1969: GAO received limited summary cost data from the Air Force and advice that the SPO could now provide supporting detail information.

GAO MAKES REQUEST IN WRITING

Mr. HAMMOND. When the hearing date was set by this committee, our requests so far had been discussed orally with the Air Force, except for the letter that we had written to the project officer on November 22. Mr. Staats thought that the positions the Air Force had taken with us should be put in writing.

On January 9 we confirmed the request we had made, and on the 14th of January we got a letter back stating that this information could now be made available. We got limited, summary information at that time indicating that detailed information would be available at the project office in Dayton.

Senator SYMINGTON. When?

Mr. HAMMOND. Now.

Senator SYMINGTON. You are going to get it now?

Mr. HAMMOND. Yes; sir.

Senator SYMINGTON. But you were told you could not have the information until you put it in writing; then that you wanted it; then you were told you could have it; is that right?

Mr. HAMMOND. That is right. And we were told the reason that we could now have it was that negotiations had progressed to such a point that it could be made available. I do not know what happened at that particular point that made it possible for the Air Force to furnish us the information.

Senator SYMINGTON. What do you think that means?

Mr. HAMMOND. Well, the letter we got on the 14th indicates that the Air Force is no longer negotiating price with Lockheed and, therefore, the information is not critical.

Senator SYMINGTON. Why aren't they negotiating it any more? Is it all agreed on?

Mr. HAMMOND. I do not know just exactly what they mean.

Senator SYMINGTON. The thrust of my questioning is that one gets a little disturbed upon hearing that money appropriated for a contract, with you, the General Accounting Office, being the people who are supposed to review the wisdom of expenditures for the Congress, the Congress nevertheless cannot get the information. How hard do you really try to get the information? I do not mean that critically, just surmising. Let us put it that way.

Mr. WEITZEL. If I might speak on that, I would like to say we have been constantly trying to get the information, and we were not sure at first how much would be given, how much would be denied. I would not like the record to show that they said we could only get the information if we put our request in writing. It was not exactly that way.

The reason that we put our request in writing was that we wanted to nail it down, what their position was on not giving us the information that we had been trying continuously to get, and that as of January 9 we had not gotten.

As has been indicated, Mr. Staats had talked with the Secretary of the Air Force and discussed their furnishing of this information. We did not feel that we had a final word from them whether they were going to release it or not to be able to release it for the committee's use and that is—

HEWLETT-PACKARD CASE

Chairman PROXMIRE. It is a matter of timing; you just did not have enough time to proceed. Because, it seems to me, you have gotten a lot tougher. In the Hewlett-Packard case, as I understand it, you went to court. Hewlett-Packard denied you the information, and you went to court, and you got the information after you went to court.

Mr. WEITZEL. This is correct, Mr. Chairman. The case was in a different posture, as you recall. We were making a review of the cost performance of a contract, and we were asking for information which we wanted in order to check whether the Government was given a fair price during the negotiations.

Chairman PROXMIRE. You see, here is the problem. It is true that you were postauditing in that case.

Mr. WEITZEL. Exactly.

UNITED ACCESS TO COST ESTIMATES

Chairman PROXMIRE. But when you have this total package procurement operation that goes on and on—this will go on until 1974—we are in a position where we just cannot get the information in any timely way, or when it is of any real use.

Mr. WEITZEL. I hope some way will be worked out, Mr. Chairman, whereby you and we can get it. However, it is this limited category of information that is the critical thing here.

We have information here with us today as to the costs incurred by Lockheed under the contract; as to the amount of progress payments which have been reimbursed and, as far as I know, we have not been denied access to the records for this sort of thing. It is the estimates; they are similar to the type of information that we do not get from executive agencies as to their budget, their forward budget projections.

Our Budget and Accounting Act gives us access to all records of the executive agencies as to their organization, methods of doing business, financial transactions, and so forth. But this has never been construed generally as covering budget projections when a budget has not yet been sent up to the Congress.

Chairman PROXMIRE. Now, the information you did get came only on the 14th. This is the 16th.

Mr. WEITZEL. On January 14.

Chairman PROXMIRE. It came the day before yesterday.

Mr. WEITZEL. In the afternoon, Mr. Chairman.

Chairman PROXMIRE. In the afternoon.

So you just did not have time to analyze it, verify it, give us your own conclusion on it?

Mr. WEITZEL. So far we can only give you the summary information that the Air Force has given to us.

TIME NEEDED TO VERIFY COST DATA

Chairman PROXMIRE. How long would it take your GAO to analyze, verify the cost data?

Mr. WEITZEL. Mr. Bailey, would you hazard a guess at that? I am sure it will take considerable time because these are very general summarizations, and they involve considerable research and analysis of Lockheed's books.

Mr. BAILEY. Mr. Chairman, I would hazard a guess that it would take anywhere from 4 to 6 months to do this type thing. It all depends on the extent of detail we have to probe into to really verify with any degree of completeness the charges that have been made. These are very, very large contracts and there are tremendous amounts of detail.

Chairman PROXMIRE. You know, I think it is good to go into these things after they are over; we learn lessons, but they are expensive lessons. Yes, indeed.

Mrs. Griffiths?

EFFECTS OF TOTAL PACKAGING ON DISCLOSURE OF COSTS

Representative GRIFFITHS. May I ask you if this contract had not been in this form, but first in research and development form and then a production line contract. They have, for all practical purposes, completed their research and development—approximately—have they not?

Mr. BAILEY. Well, a substantial amount of the research and development has been done, Mrs. Griffiths.

Representative GRIFFITHS. Then you would have been able to get the information under research and development at this point, would you not?

Mr. BAILEY. Yes; we should.

Representative GRIFFITHS. If they had been negotiating a forward price at that time, would you then have been able to have gotten the figures on that?

Mr. BAILEY. On the new negotiations?

Representative GRIFFITHS. Yes.

Mr. BAILEY. I doubt it very much, if the contract was being negotiated.

Representative GRIFFITHS. So that, in effect, the contractor who already has the contract, a complete contract, is taking the best of both worlds, is he not? He saying, "I have the contract. This it it. I can bind, I can hold to the contract, but I am going to act now as if the negotiations were negotiations under a production line contract. I won't give you that." In my judgment, gentlemen, he does not have that right. He has a contract. You have a complete right to the information, and I would demand to exercise the right, and I think Congress has the right to know that. They cannot protect themselves on everything.

Who thought up this contract form in the first place, the Air Force or one of those "think" outfits they have out there? [Laughter.]

Do you know?

Mr. BAILEY. No, ma'am; I do not.

Representative GRIFFITHS. Who do they have to get approval from?

Mr. BAILEY. Well, the contract was entered into by the Air Force.

Representative GRIFFITHS. Do they have to have the Defense Department approval? But Congress does not have to agree, do they?

Mr. BAILEY. No, ma'am.

Representative GRIFFITHS. It is entirely possible that the thing we ought to see to is they cannot enter into this kind of a contract. This contract is for all practical purposes a retainer contract. How do they set up overhead in a contract like this? I have been sitting here trying to figure it out. They are estimating their expenses 6 years from to-

day—6 years from when they enter into it. How can they say, "Six years from now we will only have this and so many in the management, and this will be the cost?"

What are they talking about inflation, why didn't they estimate inflation? Haven't these people ever bid before? What kind of nonsense is this?

Senator SYMINGTON. If my colleague will yield, Mrs. Griffiths is penetrating my thoughts which are why aren't you allowed information, based on my understanding of the structure and functioning under the law of the General Accounting Office, when said information is requested by the proper congressional committee? I think Mrs. Griffiths' questions are pertinent as to why it would be advisable to promptly get the information; and why I am a bit surprised there was so much delay.

Representative GRIFFITHS. They do not have a leg to stand on. They have a contract, they are obligated to supply the information. I would not let them get away with that 2 minutes.

Chairman PROXMIRE. Mr. Weitzel?

EXECUTIVE BRANCH HAD ACCESS TO INFORMATION

Mr. WEITZEL. Mr Chairman, I am sure that we all understand that Lockheed was supplying, I assume, any information requested including projected costs to the other party to the contract.

The two parties to the contract were Lockheed and the Air Force, which represented the U.S. Government in this contract. So that the U.S. Government, the executive department, that made the contract did have access to the information.

Now, we in the General Accounting Office agree with the sub-committee that the office should have all of the information necessary to enable us to make an independent audit of financial transactions and make recommendations as to the contract administration and the management involved.

However, as Mr. Bailey and I have pointed out, we do not usually request or expect to get information that is actually being used in the current negotiation of a contract or an amendment.

I do not want to give a legal opinion that we do not have the right to demand this. Under our access to records provision in the Armed Services Procurement Act of 1947, it says we shall have access to and the right to examine any directly pertinent books, documents, papers, and records of the contractor or any of his subcontractors engaged in the performance of and involving transactions related to such contracts or subcontracts.

GAO NOT ORDINARILY FURNISHED WITH ESTIMATES OF FUTURE COSTS

But I do have to state that we have not ordinarily been furnished with estimates that are being currently used, estimates of future costs being currently used.

However, this does not mean that we do not have any information, because these estimates of future costs have to be based on current and prior cost experience under the contract or under other contracts, as we have found. So this is a valuable part of the information that is needed in order to enter into the negotiations.

As far as I know, we have been getting this information, and we have it here, and we had a good bit of it before January 14.

It was the projection of cost to completion of the first 58 aircraft that we did not get. We did have a contractor's cost report. Mr. Gearino, did you have his reports of incurred costs before January 14?

Mr. GEARINO. Yes.

LEGISLATIVE BRANCH SHOULD HAVE ACCESS TO INFORMATION

Chairman PROXMIRE. You see, the principle here—I hesitate to interrupt—the principle is very simple, I think, and that is that we in the Congress have to appropriate these enormous amounts. We have that heavy responsibility and, as you know, they are fantastically big in the Defense Establishment.

If the executive branch which also has the responsibility can have this information, it seems to me, the legislative branch should have the same information.

Senator Symington and Mrs. Griffiths have made, I think, the indisputable point that it should be given to us in some way or other. It is true it might have to be restricted, perhaps, although I am not even sure about that, but it would seem to me that if the Congress is going to be able to function we cannot function without information.

Representative GRIFFITHS. Mr. Chairman, if they had—if they were bidding against somebody, then I think that they should be completely protected, but they are not. They have a contract. You should not carry over an old form, an old form of protection, into a new operation.

Now, the person to protect is the American taxpayer. We deserve to be protected, not Lockheed.

Mr. WEITZEL. I believe, Mr. Chairman, that we did let the committee know of our difficulties in obtaining this information. I won't say that we exhausted the prospect of getting the information under some agreement that the committee would restrict it, but the committee staff was informed and I do feel that what the Air Force had in mind was the same sort of thing. They can speak for themselves better than I can. I am not trying to speak for them, but trying to analyze what they meant when they said that "circumstances of the negotiation now make it possible to release the data to you at this time," which they had not previously furnished to avoid possible compromise of negotiations then underway between the Air Force and Lockheed. I think what they meant was the same thing that happens when you have a labor union negotiation. It is usually conducted by the two parties behind closed doors, and if either side's position gets made public this does compromise its position, and it is more difficult for that side.

So if the Air Force or if the Lockheed estimates came out I think, in fairness, both sides should come out, and this is what the Air Force probably had in mind.

Now, whether there should be some further statutory authority here—

Senator SYMINGTON. To be sure I follow that—you have two estimates, right?

Mr. WEITZEL. We have the Lockheed projections to completion, we have the Air Force analysis of them.

Senator SYMINGTON. Right.

Mr. WEITZEL. And we now know what that was.

Senator SYMINGTON. One is what the company thinks the costs will be. One is what the Air Force thinks the costs will be, am I correct?

Mr. WEITZEL. Correct, Senator.

Senator SYMINGTON. What would be wrong in having the committee know that?

Mr. WEITZEL. I see nothing wrong with having the committee know that, Senator.

Senator SYMINGTON. Thank you.

Mr. WEITZEL. We simply were unable to get it, and I think we did report to the staff that we were unable to get it. I do not have the date here.

Mr. BAILEY. I would like to add just a little bit to Mr. Weitzel's remarks, if I may.

We were trying, I think, during this whole period to get this information for the committee as evidenced—

Chairman PROXMIRE. I think Mr. Staats told me at one point he was unable to get much more. He was very much disturbed about it. My only reaction was just go and get it. What more can I say? I do not have any more power than any other Member of Congress. But we asked for this investigation, the committee did, and it is true that he did indicate he was having difficulty getting the information.

Mr. BAILEY. And we continued to press for the information in the ways we thought the information might be made available to us. It eventually reached the point where we wrote a letter to formalize our understanding.

GAO CONCERNED ABOUT OVERRUN

Chairman PROXMIRE. Let me ask this: You said—and I am very pleased to see the statement because it confirms my deep concern—“At the outset, Mr. Chairman, I would like to stress that we share the subcommittee's concern with the indicated large overrun on the C-5A program.”

Why do you share that, why do you feel that? So far you have given us what it is. Why do you think it is something that concerns you?

Mr. WEITZEL. If I might say one word before that, Mr. Chairman, in fairness to Lockheed I do not want to leave the impression that Lockheed turned us down on getting information. They said that they would refer us to the Air Force, and it was the Air Force, I am sure, that made the decision of how much information we should get.

Now, answering your question about what I said in my statement; of course we are concerned about the large overrun. We are concerned with this to start with as a—

Chairman PROXMIRE. Why?

Mr. WEITZEL. As a figure only it indicates that the program is going to cost a lot more than it started out to cost.

Now, we are immediately concerned then with the question of why did it cost more. Did it cost more because of escalation in the economy? This is a common provision in contracts, to provide for increases in contract prices due to increased cost of material, labor, equipment, and so forth. Or did it cost more because of sloppy management methods on the part of Lockheed, or did it cost more because of loose supervision by the Air Force? Was it because of a possible buy-in effort by Lockheed on the original competition or was it because they were overoptimistic or ran into unanticipated technical difficulties or did not have sufficient

firm estimates from their subcontractors when they presented their proposal? Any of those things could be the cause.

ANALYSIS NECESSARY TO DETERMINE CAUSE OF OVERRUN

Chairman PROXMIRE. It would take you months, according to Mr. Bailey's testimony, in order to come to a responsible conclusion on this; is that right?

Mr. WEITZEL. It would require extended analysis, and just on one subject, for example, the question of the application of overhead charges, so that we could try to determine whether any overhead had been charged to the Government that should be charged to the L-500 program, this is going to require quite an extended analysis of the overhead that has been allocated by Lockheed during the course of the contract.

TOTAL PACKAGE PROCUREMENT

Chairman PROXMIRE. Let me ask you, you also say in the next sentence, "We are concerned with the questions raised of the effectiveness of the type of contracting used in this case as against other more conventional types."

Mrs. Griffiths was pursuing that very effectively, I thought, and I would like to know why you are concerned too. You apparently feel that this type of contract is quite questionable.

Mr. WEITZEL. What we mean there, Mr. Chairman, this is a relatively new type of contract. The C-5A, I think, is the outstanding example of a contract where considerable progress has been made in performance under the contract, but it is a new concept.

The Air Force entered into it in an effort to submit to competition in the first instance the elements that previously had been handled in a disconnected way.

Previously, design and research and development and production had been handled at different stages, and there was a general feeling that under the way of handling it, the Government found itself locked into the research and development contractor because by the time the research and development was completed the R. & D. contractor had all the knowhow. He turned out usually to be a sole source contractor because the Government could not afford to have parallel research and development done to the point where another contractor was ready, willing and able to step in, and at a comparable price produce under a production contract for the Government.

So by what they called contract definition, which was to enable competing proposers to develop a rather definitive package and pattern for entering into R. & D. and performance contracts, and by this total package procurement, whereby the Government submitted to competition the whole R. & D. and production phases, the Government attempted to get the benefit of competition right there at that stage and to get the contractor to assume some responsibility for performance and for price and for scheduling. This was the theory.

Now, what we need to test is, Has it worked out? We know there has been a large cost overrun on the C-5A. I think in order to determine the relative deficiency or the relative advantages of this form of contracting we have to analyze some of the other forms of contracting—the more conventional ones that were used before. We are starting to

make just such a study now in our Defense division. However, Total Package Procurement is too new to get much data on except on the Lockheed contract. We are vitally interested in it.

Chairman PROXMIRE. Let me ask you just a couple of quick things about it.

REPRICING FORMULA CREATES REVERSE INCENTIVE

Does the repricing formula that they have in this create a reverse incentive, that is, the contractor is motivated to increase his costs on the first production run in order to get a high price on subsequent runs?

Mr. WEITZEL. The formula, Mr. Chairman, would increase the target and ceiling price of the total quantity of 115 planes, but only if costs on the production run A exceed 130 percent—the ceiling price.

Chairman PROXMIRE. That is right.

Mr. WEITZEL. The 130 percent is the vital figure there.

Chairman PROXMIRE. What is his incentive? His incentive is not to keep his costs down but to get them up as high as possible.

Mr. WEITZEL. We feel there is some reverse incentive when the contractor reaches the ceiling of 130 percent, and if the option is exercised to buy production schedule B that there is an incentive there for the contractor not to keep his costs down, and a further reverse incentive if he gets up to 140½ percent. If he gets over that there is a multiplying factor of two for the excess costs over 130 percent, whereas it is only 1.5 from 130 to 140½ percent.

Now, we feel by hindsight, I have to say, that it would have been better—

Chairman PROXMIRE. I do not see why this could not have been seen by foresight. You are explaining it very well.

Mr. WEITZEL. We hope this can be taken into account in future cases of this sort, if they can have a constant factor, for example, of 1.5 for all in excess of a ceiling price, say, of 130 percent or if the "two" factor could have been raised to, say, 150 percent or if they had said 1½ percent up to 140½ and 2 percent from 140½ on up, but to go back to 130 percent when the contractor gets above 140½, there is a strong reverse incentive.

Chairman PROXMIRE. No matter what the factor is there is a reverse incentive to get your costs up on the first run, isn't that correct?

Mr. WEITZEL. We feel that as he approaches the target and ceiling adjustment point that there is.

Chairman PROXMIRE. This principal seems to be the result.

Mr. WEITZEL. The Air Force will probably explain this was to protect the contractor from a catastrophic loss, not to make the contractor any money or to even make him whole, because the contractor is supposed to share in the increased costs if there is a cost overrun.

ADVANTAGE FOR THE CONTRACTOR

Representative GRIFFITHS. May I ask, isn't there one other really glorious advantage for the contractor? Now under any ordinary circumstances you could have an R. & D. contract and pay whatever the costs were, and some reasonable profit, not percentage costs but pay a profit, and that is behind you. Now you negotiate a new contract for the production item. But in this one you are not going to do it that way. You are going to pick up the production costs in the pro-

duction run, are you now—I mean the research and development costs that he is going to be behind in the production run, so you are going to have a new price on every plane, every engine, and so forth.

Nobody knows better than airpalne contractors that the people in the Defense Department change, and people like you leave office finally, and we will leave, and they will say, "Well, of course, this was the cost of the plane the whole time." Or they will say, "We will give you a glorious reduction," and the truth is they will be reducing it from the price that would have been the price per plane had these costs all been put out on a production line.

They have gotten a glorious advantage, absolutely tremendous.

Mr. WEITZEL. Mrs. Griffiths, I think that there should be an analysis of the way in which the contractor distributes his costs as between R. & D. and production.

Representative GRIFFITHS. Why, certainly.

Mr. WEITZEL. Because the way the formula operates if costs are assigned to production rather than R. & D. improperly, and I am not saying that they were, but if they were, then this would tend to raise the production cost figure for production run A which, in turn, if it gets over 130 percent can raise the cost for production run B.

Representative GRIFFITHS. Of course.

Mr. WEITZEL. B which also affects A, and a new ceiling is established.

However, I believe there is a separate ceiling in the contract for R. & D. costs, So that—

Mr. BAILEY. R. & D. costs do not enter into the formula.

Mr. WEITZEL. R. & D. costs do not enter into the formula for re-computation of the total cost of the contract. The thing that needs to be looked for is R. & D. costs not being assigned as production costs, and that production costs for production run B don't get assigned as production costs for production run A, and thereby increase the total ceiling of the contract.

Representative GRIFFITHS. I believe a sixth-grade arithmetic student can see that. Why the Air Force has never been able to understand anything like this is beyond me. This is not the only type of thing they have ever done.

When General Schriever was in, and they had Thompson-Ramo-Wooldridge build that 19-story office building out there, and the Air Force was the sole purchaser of any product sold by Thompson-Ramo-Wooldridge, he let them put their \$20,000 in, and we put in \$20 million, and then we bought it back. I could not believe it. He let them run a "think" contract, which is a service contract, as if it were a production run contract, so they thought for 2 minutes on how to figure out the answer to his problem, and 98 minutes on how to think up something else for him to buy. It worked great.

And this thing is the same thing. The first thing we ought to do is repeal this type contract.

Chairman PROXMIRE. I have just a couple of more questions, Mr. Weitzel.

PROGRESS PAYMENTS

Usually, as I understand it, the Air Force, the armed services, give 70- or 75-percent progress payments. In this case, 90 percent was used

on this particular contract which means, of course, that the amount of investment that Lockheed had to make was held down quite low.

Why was 90 percent used in this particular case?

Mr. WEITZEL. Mr. Chairman, the 90-percent provision was in the contract. At the time 70 percent was the limit, I believe. Was it not, Mr. Hammond? I believe the Defense Department has raised the percentage in certain cases over the 70-percent figure now.

As I pointed out, after September 1968, the limit is 70 percent if they don't run over \$50 million unreimbursed costs.

Chairman PROXMIRE. It depends on the particular case as to whether or not they make it 70 or 90 percent. It is a matter of judgment?

Mr. WEITZEL. It was negotiated in this case. However, at this time, higher than 70 percent can be given as a general matter. I would like Mr. Bailey to give you a more specific answer on that.

Mr. BAILEY. I think that the provision now is for an 80-percent progress payment. But there are certain special cases where 90 percent may be paid.

Chairman PROXMIRE. How do they get special consideration?

Mr. BAILEY. I am going to defer to Mr. Hammond and Mr. Gearino on that.

Chairman PROXMIRE. You are getting close to the end of the line here. [Laughter.]

Mr. GEARINO. I think primarily, Mr. Chairman, it relates to the total dollars that will be withheld. If it gets to a point to where it becomes large in volume, that is unreimbursed costs, then they permit the 80 percent to go to 90 percent.

For example, in a contract of this type that we are talking about, a billion and a half dollars, a 10-percent unreimbursed cost figure could result in \$150 to \$200 million, and if it were 80 percent, you see, it would be twice that much, it would be up to \$350 and \$400 million on unreimbursed costs.

Chairman PROXMIRE. In addition to the progress payments which were exceptionally large, the Government owned the plant, as I understand it, at Marietta. How much other Government equipment is being used by this contract?

Mr. GEARINO. We have some figures, Mr. Chairman, about the amount.

Chairman PROXMIRE. So the Government has the big investment, the progress payments take care of the working capital requirements, the Government owns the plant.

Mrs. Griffiths has pointed out far better than I have what many other mighty attractive developments exist in the contract. They have a superincentive for making their first cost run as high as possible which results in a \$2 billion additional payment for the taxpayer.

Mr. WEITZEL. Some figures we have here, Mr. Chairman, and Mr. Gearino can correct me if this is inappropriate, the total Government investment, according to these figures, is \$113.8 million, and the investment by Lockheed Georgia is stated at \$80 million in the facility, so that the Government investment is somewhat greater than the Lockheed investment.

Chairman PROXMIRE. Do you want to make any general conclusion, Mr. Weitzel, as to whether or not this is not a very costly way to do business when you put this whole package together?

Mr. WEITZEL. Mr. Chairman, I think it would be very precarious for us to arrive at any general conclusion today, but you can be assured of our continued interest.

Just the fact there is this much of a cost overrun is certainly something that is extremely important, but we cannot answer the question today as to why there was a cost overrun, how much of it should have been anticipated or how much of it is controllable. This is something that will require some detailed analysis and, perhaps, the Air Force can give you some information that we do not now have.

PROGRESS PAYMENTS DIVERTED ?

Chairman PROXMIRE. Can you tell us whether or not progress payments have been diverted for nondefense work?

Mr. WEITZEL. This is a difficult thing for us to determine. It would involve analysis of their records as to how much they have paid for nondefense work and, as I recall, Mr. Gearino was unable to get this information because they did not have a breakdown as to their payments to subcontractors, suppliers, and so forth, between defense and nondefense, and they did not want us to look at their total records because they felt this was proprietary information to Lockheed.

Chairman PROXMIRE. As I understand it, Lockheed is developing parallel a commercial plane very similar, a big commercial cargo carrier airfreight plane, at the same time. They have not produced the planes, but their research is going on in a parallel way. That is why I am concerned about the possibility that these progress payments, which were perfectly enormous, of course, for the military plane the Air Force is buying, could be diverted, and if they were so diverted, wouldn't this contribute to the cost overrun problem?

Mr. WEITZEL. I have no data, and I do not know that our people have to indicate there is any such diversion. We would be interested, certainly, if Lockheed was charging to the Government any costs that should be chargeable to the commercial development, and probably this involves the question of allocation of overhead.

We can make an analysis of overhead to determine whether the overhead charged to the Government contract is proper. We have not had access to all their records on the costs incurred under the commercial L-500 program, which is a private program, and under the law, we do not have access to cost information covering the commercial version.

Mr. Bailey, do you have any further information on that?

Mr. BAILEY. We do have some information on the extent of work in process in the contractor's plant or the value of the work in process in the contractor's plant, which may give you some idea of the amount of money that Lockheed has tied up in the C5A program. It can be compared with the amount of progress payments that have been paid, together with information on items delivered, invoiced, and accepted by the Government.

The amount of items delivered, invoiced, and accepted according to the 165th request the contractor submitted for progress payments,

amounted to about \$383 million, and according to Lockheed's work in process records through December 1, 1968, the work in process in the plant amounted to about \$941 million. So you have a total there of \$1.23 or \$1.24 billion. Progress payments have run, as we indicate in our statement, about \$71 million less than this.

SPECIAL PAYMENTS FOR "MILESTONES"

Mr. WEITZEL. We ought to call your attention, Mr. Chairman, to the fact that the contractor is entitled to some special payments for reaching certain milestones in the performance of the contract which can result in his receiving payments of more than the value of the work actually performed at that date; is that correct, Mr. Gearino?

Mr. GEARINO. Yes.

Chairman PROXMIRE. So they can receive in a sense more than 100 percent in terms of value of the work up to date?

Mr. WEITZEL. Up to that date, but not in the work they finally do.

Chairman PROXMIRE. Has that been done?

Mr. WEITZEL. I think there have been some payments in achievement of special milestones. Do you have the figures?

Chairman PROXMIRE. Special milestones? They are \$2 billion over the original estimate, the most fantastic overrun I ever heard of, and they are getting special milestone achievement payments because they have reached them, and they are getting more than 100-plus percent?

Mr. WEITZEL. Up to 100 percent. There were milestones for the design, development, test and evaluation aircraft, delivery of airplanes to the flight test organization, at which time the contractor was paid 98 percent of the selling price for these aircraft, and also the contract provides certain penalties, as I recall, for late deliveries. I do not know that any have been assessed.

The Air Force, I believe, feels that the contractor is up to his schedule.

Chairman PROXMIRE. Mrs. Griffiths?

SOLE SOURCE NEGOTIATIONS

Representative GRIFFITHS. Actually on what are they bidding? I notice that this is supposed to be keenly competitive. What is competitive about it?

Mr. WEITZEL. Well, I will try to give a very general answer to that.

It was the design, the development, and production of a package of aircraft which would satisfy the stated needs of the Air Force which were submitted to the three potential bidders, the three firms which were asked to submit proposals, and in response to the request for proposals which was issued, I believe, in 1965.

Mr. Hammond, would you want to add to that?

Mr. HAMMOND. In the original award there was competition among Douglas, Lockheed, and Boeing. But at this particular time, according to the Air Force, they were negotiating with Lockheed to determine whether or not they would exercise the option for the second increment of aircraft and, if so, under what conditions they would. This was a sole-source negotiation between the Air Force and Lockheed.

Representative GRIFFITHS. Well, at any rate price has very little to do with what they are bidding on, does it not? In a limited way maybe it has something, but it must be whether or not they can produce the aircraft and on time.

Mr. WEITZEL. All of these elements, Mrs. Griffiths, were taken into consideration in connection with the initial competition back in 1965, performance, price, and delivery.

COSTS SHOULD BE DISCLOSED

Representative GRIFFITHS. From now on I do not think they are bidding at all. I do not think there is anything secret about it nor should there be anything secret, and I do not go along at all with the fact that the Government has to make its analysis clear on what it thinks of its price. I do not think there is anything unfair about having Lockheed supply their cost breakdown completely, and that if the papers publish it, let them publish it. It is entirely possible somebody might be able to point out where we are paying too much, and there would be a great saving.

CONTRACTOR PROTECTED

I do not see anything wrong about it because they are totally and completely protected. They have a contract. We are going to pay on that contract.

There is not any problem with that, but the thing that is wrong with the contract is that the more complicated the contract becomes, the longer it has to run, the greater the risks that you are not going to be able to figure out a proper price.

Now, in theory this risk should really be on the seller, but you know well and good that in fact it has not been.

No airplane companies that have been selling to the Government have gone out of business, have they? Nobody has gone broke. They have all been paid.

So this is not even private enterprise, you know. These people are paid just like Senator Proxmire and I are—and you.

Mr. WEITZEL. There is no question, Mrs. Griffiths, that the more risk there is undertaken by the contractor, the more he is going to want to cushion himself against possible contingencies.

This particular contract did include considerable risk because of the need for new technology, and there were certain provisions which the Air Force inserted to try to protect the contractor from this undue risk which would make him raise his initial price.

Representative GRIFFITHS. Why, certainly.

Mr. WEITZEL. However, the Air Force attempted to make as certain as possible what the contractor was to be responsible for, and to make him responsible for delivering to the Government at the prices stated in advance in his contract or adjusted for contingencies which were ascertainable and computable at the time, the number of aircraft that were promised, to perform as promised, and on a schedule as promised.

How this is going to work out only the future really can tell. The production run A has not been completed. We do not yet know what the final costs are going to be.

I hope they are not going to be much higher than projected now, but with the present trend in the economy they could go up even more before the Government finishes paying for the aircraft. We will certainly be as concerned as the committee with anything that can be done to determine whether this is a good method of contracting compared to others which were previously in use, and whether it produces economical, efficient, and effective results for the Government.

Representative GRIFFITHS. Well, I am sorry to see you leave, Mr. Weitzel.

Mr. WEITZEL. Thank you. You are very kind, Mrs. Griffiths. I have tremendously enjoyed working with you.

Representative GRIFFITHS. Thank you.

Chairman PROXMIRE. So am I. Thank you again, once again, Mr. Weitzel. And if the tenor of the questioning today indicated anything but complete and total respect and admiration, I am sure it was just because we wanted to get into the material.

You have done a magnificent job, including your work on this, and I am very, very grateful to you for your wonderful service over 45 years in Government, and 43 years with the GAO; is that correct?

Mr. WEITZEL. Well, Mr. Chairman, the reason for the difference is that I went back to school for a while after I started in as a messenger boy at GAO.

I have had 43 years altogether, but it extends over 45. It is all GAO, and the admiration I appreciate. It is mutual, and I want to say that I have enjoyed these interchanges.

I know we have the same objective, and we are working as hard as we can to help you analyze these situations and arrive at some results which, if they cannot correct past conditions can provide a guide for the present and the future.

It has been tremendously exhilarating to me, and it is my regret that I will not be able to appear before you probably next week or next month in this same capacity.

Chairman PROXMIRE. We regret it, too. Thank you very much.

Mr. WEITZEL. Thank you, sir.

Chairman PROXMIRE. Our next witness is the Honorable Robert H. Charles, Assistant Secretary of the Air Force for Installations and Logistics.

We are very happy and grateful to Mr. Charles for coming.

Mr. Charles, just before Senator Symington left he leaned over and he said that Bob Charles is a real expert and one who can testify with great expertise in this area.

Incidentally, I might also say when we invited Secretary Brown and he said he wanted to come but he unfortunately could not make it, he said you, Mr. Charles, are the man who wrote the book, know all about this subject and know it very thoroughly, so we are very pleased to have you.

STATEMENT OF HON. ROBERT H. CHARLES, ASSISTANT SECRETARY OF THE AIR FORCE (INSTALLATIONS AND LOGISTICS); ACCOMPANIED BY THOMAS W. NELSON, OFFICE SECRETARY OF THE AIR FORCE

Mr. CHARLES. After this hearing I hope you will agree with Senator Symington.

Chairman PROXMIRE. Well, I must say we have set up a nice adversary situation. If anybody can knock it down, I am sure you can.

SUPPRESSION OF WRITTEN TESTIMONY OF A. E. FITZGERALD

Before you begin your statement though I would like to ask you a few questions concerning or surrounding, the testimony before this committee last November of Mr. A. E. Fitzgerald, an Air Force official. Mr. Fitzgerald was instructed not to provide a written statement for the subcommittee in November even though we requested one.

Did you have anything to do with the decision to instruct the witness not to give a written statement?

Mr. CHARLES. Not directly.

I should say this: I personally was concerned about Mr. Fitzgerald's appearance before your committee in November. This concern did not at that time pertain to any misstatement he might make concerning his own area of responsibility. My concern was this: He is not responsible for procurement nor has he so indicated. Nevertheless, when you start discussing a program like the C-5A, even though that discussion is intended to deal with those financial aspects for which he does have responsibility, the implication therefrom naturally impinge on the entire procurement process for which he does not have responsibility. The C-5A, as you well know, is a very complex matter. I feared that an isolated discussion of only one of its elements would not be placed in perspective. My fear turned out to be justified.

The public now has the impression that the C-5A is a bad program, and that the manner in which we are procuring it is equally bad. For example, the responsible Washington Post in an editorial on last November 17 stated, and I quote:

The first 58 C5A Galaxy aircraft * * * may now cost \$2 billion more than the original estimate. Since the original estimate was about \$3 billion it makes a total of \$5 billion. This \$5 billion * * * for 58 airplanes.

Again, in "The Nation" of December 23 appears this statement:

Between 1965 and 1967 Lockheed Aircraft's net income dropped 21 percent. * * * so to help Lockheed along, the company was allowed to pad its costs for building the monster freight airship, the C-5A.

Chairman PROXMIRE. If I can just interrupt, Mr. Charles, and you proceed in any way you want, but it might be more orderly if you understood what I am trying to get at.

What I would like to do, if possible, is to develop your thoughts and your response and the Air Force position on Mr. Fitzgerald first.

Mr. CHARLES. I am trying to do that.

Chairman PROXMIRE. Under the C-5A.

Mr. CHARLES. I am trying to do that.

Chairman PROXMIRE. Fine.

Mr. CHARLES. I am still quoting from this article:

The job of padding has been so accomplished that it now appears costs will run at least 100 percent ahead of estimates—an extra \$2 billion.

In assessing the merits and demerits of the C-5A program and of Total Package contracting, no one who has publicly discussed this matter so far has asked the most critical question of all; namely, "Compared to what?" When the question "Compared to what?" is asked, then we get an entirely different conclusion.

Comparing this airplane's actual performance with the contractor's proposed performance and with his contractual commitments, both of which it is expected to exceed, the results are far better on the C-5A than any other system ever procured by the Air Force.

Comparing the C-5A cost growth—25 percent above our original estimate excluding inflation, and 10 percent including it—with the much greater increases on other systems, again the results are far better on the C-5A program; and the method of procurement used on the C-5A has effected great improvement in the cost area.

Now, the reason I was concerned, of course, is that I think the public has gotten the wrong impression, and this was my concern at the time.

Chairman PROXMIRE. But, Mr. Charles, what we did was to invite Mr. Fitzgerald, and we invited other representatives of the Air Force to appear.

Mr. Fitzgerald simply answered our questions and said there were overruns, and the overruns he told us about, so far as we could determine, were precisely accurate. If the public got the wrong impression, the Air Force was not only in the position at the hearings but any other time to correct that impression.

Mr. CHARLES. We are going to correct it today.

Chairman PROXMIRE. So it would seem to me Mr. Fitzgerald performed a most useful function in letting Congress know what it had every right to know. We have the responsibility for it.

Mr. CHARLES. I think I have the facts, and we will get over them today.

Chairman PROXMIRE. Do you know whether the fear Mr. Fitzgerald would tell us about C-5A overruns had anything to do with instructing him not to give a written statement?

Mr. CHARLES. Would you ask that question again?

Chairman PROXMIRE. Do you know whether the fear Mr. Fitzgerald would tell us about C-5A overruns had anything to do with instructing him not to give a written statement?

Mr. CHARLES. Not that I know of. As I understand it, he was to be a backup witness. Backup witnesses normally do not have statements. On the other hand, he was perfectly free to come over here, and he did.

Chairman PROXMIRE. We invited him to make a statement, we invited him in writing to make it. Under those circumstances when a congressional committee invites a responsible official in the Air Force to make a statement, isn't he normally permitted to do so?

Mr. CHARLES. I do not know whether he is normally permitted to do so or not. He did come over here and he did answer your questions.

Chairman PROXMIRE. Well, there was also some effort made in the Defense Department to prevent Mr. Fitzgerald from testifying at

all. Do you know anything about that, trying to prevent him from testifying at all?

Mr. CHARLES. No; I do not. He was to be a backup witness.

Chairman PROXMIRE. Was the effort made to keep him away from the committee related to the C-5A overruns or other overruns, the cost control problems?

Mr. CHARLES. No. As I said, my only concern was that the matter would not be presented in its entirety and, therefore, the perspective would be lost.

CIVIL SERVICE STATUS OF A. E. FITZGERALD

Chairman PROXMIRE. Now, this is the most puzzling and distressing case because, you know perhaps what happened. As I recall, in September Mr. Fitzgerald was given a memorandum which indicated that his position was going to be given civil service status and civil service tenure.

Then on November 13 he testified before this subcommittee, and on November 25 he was notified that this September notice was a mistake.

I discussed this with the Secretary of the Air Force not very long ago, in this year, and he indicated to me that this was a computer error.

When I related this in a statement to the press, saying how unhappy I was that there was the coincidence of a computer error—and the computer, after all, cannot sign the memorandum, cannot deliver the memorandum, it has to be done by a human being—that this coincidence, and it seems to me one in 10,000 prospect, that the computers go wrong, I hope it is not more than that or we are going to be in real danger, in view of the computer's powers in the Defense Establishment, that this should happen to one of the very rare people who come before us and tell us that there are mistakes or in this case that there was an overrun.

So I pointed this coincidence out. Then, on January 9, Secretary Brown said he was shocked at my statement, objecting to the treatment of the witness following his testimony.

As I had done earlier, I invited Secretary Brown to discuss publicly this extremely disturbing matter at today's hearings. Unfortunately, Secretary Brown has declined my invitation, although he was shocked enough to release his letter to me to the press. The shock apparently was not sufficient to bring him to this hearing to openly discuss it, and to make any comments about the actions taken against Mr. Fitzgerald after his November testimony.

Mr. CHARLES. I know of no action taken against him.

Chairman PROXMIRE. Well, the action taken against him was a memorandum indicating that he had tenure, that he was protected, that he would not be discharged from a position of this kind, that this was apparently revoked.

Mr. CHARLES. Mr. Chairman, no one regrets more than I the coincidence that did occur. I am not qualified to answer all of your questions on this matter, but Mr. Nelson, who is here with me, may be responsive to these questions.

Chairman PROXMIRE. Fine. Will you identify your position and your first name, sir?

Mr. NELSON. Yes, sir.

Mr. Chairman, Thomas W. Nelson. I work in the Office of the Secretary of the Air Force, for the Administrative Assistant to the Secretary.

My job is in the field of administration, including responsibilities in the personnel area.

What I would like to do is give you a short—

Chairman PROXMIRE. Do you work for John Lang?

Mr. NELSON. Yes, sir; I do.

Chairman PROXMIRE. Thank you.

Mr. NELSON. I would like to give you just a little chronology, if I can, of what happened and shed some light.

On the 6th—well, I should start back.

In June of last year, in Headquarters, Air Force, for the Office of the Secretary and the rest of the people in the headquarters, we placed our personnel records in a computer. Our personnel actions are now prepared by machine, so it is a thoroughly new process a little over a year old, and we do have problems with it, as in any new program. We do make errors, and we have made an error.

On the 6th of September a Standard Form 50, which is a notification—

Chairman PROXMIRE. You used the plural on errors. Have you made other errors?

Mr. NELSON. Yes, sir; we have.

Chairman PROXMIRE. With this computer?

Mr. NELSON. Yes, sir.

Chairman PROXMIRE. Can you tell us how many?

Mr. NELSON. Yes, sir; I can.

Chairman PROXMIRE. How many?

Mr. NELSON. We have 55 people in the headquarters in the excepted service, as with Mr. Fitzgerald. There were eight errors made since June of 1967.

Chairman PROXMIRE. How many people are affected by this computer, how many?

Mr. NELSON. Approximately 4,300.

Chairman PROXMIRE. 4,300?

Mr. NELSON. Yes, sir.

Chairman PROXMIRE. It has made—would it be an accurate statement to say that it had made 4,300, I cannot call them decisions, I do not know what you call what a computer does, 4,300 memoranda had come as a result of this computer?

Mr. NELSON. It is many more than that.

Chairman PROXMIRE. How many more?

Mr. NELSON. It is at least—I do not know the exact number, sir; I can provide it.

Chairman PROXMIRE. Would you say it is 50,000?

Mr. NELSON. Let me just do a little thinking just a minute. Perhaps I can give an estimate.

Chairman PROXMIRE. Sure.

Mr. NELSON. I am afraid I cannot give you—there are approximately 4,300 people, approximately 225 actions per week that come out.

Chairman PROXMIRE. Two hundred twenty-five actions per week over a period of what, 6 months?

Mr. NELSON. No, sir; no, sir. This is the normal production, 225 per week come out of the computer.

Chairman PROXMIRE. How long has this computer been in operation?

Mr. NELSON. Since June 1967, a little over a year and a half, since June 1967.

Chairman PROXMIRE. A year and a half?

Mr. NELSON. Yes.

Chairman PROXMIRE. That is 18 months times 4 times 225, and we have it; is that correct?

Mr. NELSON. That is correct.

Chairman PROXMIRE. I don't blame you for taking a little while to figure that out.

At any rate, it would be maybe 20,000 or 30,000. Maybe you can figure that out back there and let us know what it is, and just eight mistakes made?

Mr. NELSON. No, sir. This was for the 55 people in the excepted service, not the full 4,300. I did not make this point clear, I am sure.

Chairman PROXMIRE. So it has made eight mistakes on the 55 people?

Mr. NELSON. Yes, sir.

Chairman PROXMIRE. How about the 4,300?

Mr. NELSON. I do not have the number of errors made on that. I assume it must be proportionate. I do not know.

Chairman PROXMIRE. It must be proportionate.

Mr. NELSON. In the same proportion. I do not know what the situation is.

Chairman PROXMIRE. I should think that computer ought to be fired. [Laughter.]

Mr. NELSON. There are a great many—I think there are 90-some separate programs on the computer.

Chairman PROXMIRE. Were these mistakes made both in favor of the employee—

Mr. NELSON. Yes, sir. As a matter of fact, of the eight errors that I pointed out, six of them were in favor of the employees. Two of them might be—

Chairman PROXMIRE. Only two were against the employee?

Mr. NELSON. Yes.

Chairman PROXMIRE. And this was one of the two?

Mr. NELSON. Yes, sir.

Chairman PROXMIRE. Was the other just a matter of paying him too much, or something of that kind?

Mr. NELSON. No, none of these affected pay. This is just terminology on this document. None of them have affected pay.

Chairman PROXMIRE. So in a year and a half this computer made only two errors against an employee, and Mr. Fitzgerald was one of the two?

Mr. NELSON. Of the people in the excepted service.

Chairman PROXMIRE. Of the 55 people?

Mr. NELSON. That is correct.

Chairman PROXMIRE. All right. Go ahead.

Mr. NELSON. If I may go on.

This was on the 6th of September with an effective date of the 20th of September 1968.

The reason for this is Mr. Fitzgerald would have been or was on the—in this position for 3 years as of the 20th of September 1968.

This position that he occupies has existed since 1962. It has been in the excepted service, as opposed to the competitive civil service, that full time. It has never been changed. It is not being changed now. There is no intention of changing it.

Therefore, this error that was made and Mr. Fitzgerald pointed out, in essence, gave him tenure that the Air Force does not have the authority to bestow on him in the first place.

Chairman PROXMIRE. You have the authority if the Civil Service Commission approves.

Mr. NELSON. Yes, sir. But we have to request it from the Civil Service Commission, which we have not done.

Chairman PROXMIRE. So the authority depends—you have the authority to request it?

Mr. NELSON. Yes, sir; we do.

Chairman PROXMIRE. And it has been done in the past, that you have requested positions to be covered under civil service?

Mr. NELSON. I am sure it has been done; yes, sir.

At this point, since we did not have the authority to bestow this career status—

Chairman PROXMIRE. Without Civil Service approval.

Mr. NELSON. That is correct. Since we took no action we have still taken no action, nor is any action contemplated, it was not possible for us to give Mr. Fitzgerald what we told him we had given him on this document.

Chairman PROXMIRE. Well, you could have done it. He had every reason to expect that he was getting it. After all, he got this memorandum. If I received a memorandum like that I would have assumed you would have consent from the Civil Service Commission, and getting approval from the Civil Service Commission is simply notifying them with a carbon copy and if there is no adverse action on their part.

Mr. NELSON. No, sir.

Chairman PROXMIRE. This has to be affirmative?

Mr. NELSON. Yes, sir. It has to be published in the Federal Register before we can change a position from the excepted service to the competitive. It is quite an elaborate procedure here and quite time consuming.

Then, if I may proceed, during—since this is a new computer program, we conduct—and when I say “we” I should identify this a little closer, the clerical staff of the Headquarters, Air Force Personnel Office that services the Office of the Secretary—the clerical staff conducts a 100-percent postaudit of these actions primarily, of course, to catch mistakes. But until in this computer all the bugs are worked out of this program, it also points out where the errors are so corrective action can be taken.

Mr. Fitzgerald’s conversion at the end of this 3-year period was the first of these schedule A excepted service appointments that we have had since the computer has been in operation.

What it boiled down to is we had not properly programed the computer to cover this type of an exception. As soon as it was discovered a corrected copy of this Standard Form 50, a corrected copy of this Standard Form 50 was provided Mr. Fitzgerald, and that is where the impression came—and I can understand how we would get this im-

pression, it is two pieces of paper—naturally, the impression was created that we had given him something and taken it away.

Chairman PROXMIRE. Once again, perhaps I missed it, did you say why this was programed into the computer to begin with, why Fitzgerald's name got in there?

Mr. NELSON. No, I did not, sir. I can. It gets a little complicated here.

All employees, whether in the competitive service or in the excepted service, as Mr. Fitzgerald is, are in a conditional type of employment, whether it is career conditional or excepted conditional, for a 3-year period in the Air Force.

So the computer was programed for when the 3 years are up you automatically convert them into career. There are 55 people in the excepted category, most of whom had had their excepted—they had been out of the conditional status for years. This was just overlooked. It has been corrected now.

Chairman PROXMIRE. This means Mr. Fitzgerald's name was put in error; that was the mistake?

Mr. NELSON. No. All the employees' names are in the computer, all the records are in the computer.

But what happened was when he had 3 years' service it automatically cut an action giving him career tenure. It should have given him tenure in the excepted service.

Chairman PROXMIRE. He is the only one, however, the only one who received tenure who should not have had tenure?

Mr. NELSON. That is correct.

Chairman PROXMIRE. That is the only time this computer has made this mistake?

Mr. NELSON. Yes, sir; that is correct.

Chairman PROXMIRE. Any further observations?

Mr. NELSON. There is one other thing that I should point out. On the face of the document Mr. Fitzgerald received there is a basic inconsistency between two blocks. In one place at the top of the form it says that he acquired career tenure. Then down in the center of the form it shows him being in the excepted service, which is a basic inconsistency on the form itself.

The form was in error, and it still is when you look at it. The two are inconsistent with each other. Rather than go through the rest of this, I would—I do have a statement. We have gone through some discussion, with some correspondence and Mr. Fitzgerald did visit the Civil Service Commission to discuss the case with them. I was asked to accompany him and did.

He was given an explanation by an official of the Civil Service Commission, and we have received a document which I would like to read today and have entered in the record, if I could.

Chairman PROXMIRE. Go right ahead.

LETTER FROM CIVIL SERVICE COMMISSION

Mr. NELSON. Dated the 16th of January 1969, from the Honorable Robert Hampton, U.S. Civil Service Commission:

By telephone conversation with the Administrative Assistant to Air Force Secretary this date the following statement on the case of A. Ernest Fitzgerald.

Mr. A. Ernest Fitzgerald was appointed in 1965 as a GS-17, Schedule A, as

Deputy for Management Systems in the Office of the Assistant Secretary of the Air Force (Financial Management). At no time has the Commission been requested to take any action to convert this status. The Air Force does not have the authority to convert Schedule A appointment to Career Appointment or Career Conditional. Those actions can be taken only by the Commission. If queried by Congress on this subject, the above would be the response of the Civil Service Commission.

Chairman PROXMIRE. That completes your statement?

Mr. NELSON. Yes, sir; it does.

FURTHER ACTIONS AGAINST A. E. FITZGERALD

Chairman PROXMIRE. Now, Mr. Charles, I would like to ask you, do you know whether any further action is planned or contemplated against Mr. Fitzgerald?

Mr. CHARLES. I not only know of no further action that is planned against him, I know of none that has been taken against him.

TRANSMITTAL OF FITZGERALD SUPPLEMENTAL TESTIMONY

Chairman PROXMIRE. All right.

I want to get into that in a minute. In the November hearings I asked Mr. Fitzgerald to provide us with certain cost data on the C-5A and other information. That was at the November hearing, November 13.

I received nothing from him or from the Air Force until December 24. The delay in transmitting this supplemental testimony has held up publication of the November hearings.

Can you tell us why the Fitzgerald inserts were not sent to the committee until December 24?

Mr. CHARLES. I am not an expert in that, but I will say this: it is my understanding that something was sent over around the latter part of December, about the 20th of December, something like that, which those who sent it over were under the impression it was in accordance with your wishes.

We understood later, I think from Mr. Fitzgerald, that more was wanted, and therefore, it was sent over several days ago.

Chairman PROXMIRE. It was not just more that was wanted. The Christmas Eve package that was received on December 24 was labeled, and I quote in full, "Insert for the record, testimony of A. E. Fitzgerald."

Now, do you know whether this accurately reflected Mr. Fitzgerald's testimony?

Mr. CHARLES. I do not.

Chairman PROXMIRE. Do you know the C-5A cost figures in the package had been changed from the ones submitted to this office by Mr. Fitzgerald?

Mr. CHARLES. I did not.

Chairman PROXMIRE. Well, they were.

Yesterday we received another package from the Air Force labeled, "Insert for the record, testimony of A. E. Fitzgerald."

Can you explain to the committee why it took so long to transmit these materials?

Mr. CHARLES. I think this is the same answer I just gave.

Chairman PROXMIRE. Well, what happened? All right, the explanation to our staff was that the first—when we asked them, as a matter of fact, when we got this testimony, it did not square with what we had heard from Mr. Fitzgerald. The cost figures were quite different. Mr. Fitzgerald said that that was not his testimony. So we went back to the Air Force and we asked them why they did not send us Mr. Fitzgerald's testimony, and they said, "Well, we felt that we should give you the Air Force position, total Air Force position, including what Mr. Fitzgerald thought and what we thought," and so on.

Well, this would have been useful and interesting provided it had been properly labeled, but it was labeled "Testimony of A. E. Fitzgerald." That was all we got, and it was not Mr. Fitzgerald's testimony.

The testimony we got after that was quite different, and it was Mr. Fitzgerald's testimony, and he has told us that it is.

Mr. CHARLES. I cannot respond to that because I am not familiar with it. If you will give me the details on the discrepancies, I can look into them and provide them for the record.

Chairman PROXMIRE. We will come to that.

LANG MEMORANDUM

Before we do that, I have a memorandum for Dr. Brown dated January 6, 1969, called "Background Information Relating to Fitzgerald Case."

Now, this fascinating memorandum, what it does, it suggests what can be done to Mr. Fitzgerald, how he can be handled. It goes on to explain the civil service position. I will read part of it:

"In the civil service, all positions are either in the competitive or excepted service. The latter simply means that employees may be selected without the normal competition by examination which is required," and so forth.

It also goes into details to explain Mr. Fitzgerald's position is excepted under schedule A, and so on.

Then it says this:

"As an employee in the excepted service under schedule A, with veterans preference, Mr. Fitzgerald has certain rights, which can be grouped in two categories:" And it indicates the three alternative ways in which Mr. Fitzgerald can be handled.

One is "Adverse Actions. Chapter 752 of the Federal Personnel Manual applies to discharges, suspensions, furloughs without pay, and reductions in rank or compensation taken by agencies against employees of the U.S. Government. Mr. Fitzgerald's rights are:" And they are listed (a) through (f), and I will make that available for the record, and I am going to have that available to the press. I won't go into detail now in the interest of time.

"Reduction in Force." This is the second way Fitzgerald can be handled:

In the event his job is abolished, Mr. Fitzgerald is in Tenure Group I in the Excepted Service and has the right of full application of all reduction-in-force procedures insofar as "bumping" and "retreat" rights within his competitive level grouping. However, since he is the only employee in his competitive level grouping and since he did not progress to this position from other lower grade positions, the net result is that he is in competition only with himself. He could neither "bump" nor displace anyone.

So all that has to be done is reduction in force by one, and Mr. Fitzgerald is out on that, and that might seem the best available.

Now, the third alternative which, incidentally, is not recommended by Mr. Lang, is most fascinating. Mr. Lang says in this memorandum the following:

There is a third possibility, which could result in Mr. Fitzgerald's departure. This action is not recommended since it is rather underhanded and would probably not be approved by the Civil Service Commission, even though it is legally and procedurally possible. The Air Force could request conversion of this position to the career service, utilizing competitive procedures, and consider all the eligibles from the Executive Inventory and an outside search. Using this competitive procedure, Mr. Fitzgerald might not be selected. If not, displacement action would follow.

Now, this memorandum by John Lang, I presume, was prepared because the Air Force was contemplating disciplinary action or dismissal of Mr. Fitzgerald. Once again it seems to me this contributes, in my mind, to a conclusion that this man who testified before us, who only answered a question put to him by this committee, and who had no apparent adverse action against him until he did appear before this committee, is being disciplined; perhaps being dismissed, or they contemplate dismissing him. The Air Force does this simply because he came up here and did what public officials are told to do—and we are assured by every Cabinet officer especially the Secretary of Defense, he is going to encourage this—simply told the truth when we asked him.

Mr. CHARLES. I would have to disagree with your conclusion.

Chairman PROXMIRE. All right, sir.

(The memorandum, quoted in part above, follows:)

JANUARY 6, 1969.

Memorandum for Dr. Brown.

Subject: Background Information Relating to Fitzgerald Case.

In the Civil Service, all positions are either in the competitive or excepted service. The latter simply means that employees may be selected without the normal competition by examination which is required in the competitive service. The vast majority of positions are in the competitive service, however, there are three categories of positions excepted: Schedule A (positions other than those of a confidential or policy-determining character for which it is not practical to examine); Schedule B (The same type of positions where it is not practical to hold a *competitive* examination); and Schedule C (positions of a confidential or policy-determining character).

Mr. Fitzgerald's position is excepted under Schedule A. In the Air Force, there are several types of positions excepted under Schedule A: all attorney positions; civilian chaplain positions; part-time and intermittent positions; summer trainee positions under the Youth Opportunity Campaign; cadet hostesses, physical education and music instructors at the Academy; positions on the AF cable ship operated by the AF Communications Service; and the *specific authority which covers Mr. Fitzgerald's position*; "213.3109(a). *Office of the Secretary*. Three special assistants in the Office of the Secretary of the Air Force. These positions have advisory rather than operating duties except as operating or administrative responsibilities may be exercised in connection with the pilot studies." It is important to note that positions are excepted from the competitive service only after being recommended by the agency, approved by the Civil Service Commission and published in the Federal Register. The other two positions excepted by this specific authority are: Deputy for Personnel Policy, GS-17, SAFMR, occupied by James P. Goode; and Deputy for Transportation and Communications, GS-17, SAFIL, occupied by John W. Perry.

As an employee in the excepted service under Schedule A, with Veterans Preference, Mr. Fitzgerald has certain rights, which can be grouped in two categories:

(1) *Adverse Actions.* Chapter 752 of the Federal Personnel Manual applies to discharges, suspensions, furloughs without pay, and reductions in rank or compensation taken by agencies against employees of the United States Government. Mr. Fitzgerald's rights are:

(a) Adverse action may not be taken except for such cause as will promote the efficiency of the service;

(b) He must be given at least 30 full days advance written notice, identifying the specific proposed action, stating the reasons supporting the proposed action, including names, times and places;

(c) The notice must tell the employee that he has the right to reply both personally and in writing and to submit affidavits in support of his answer;

(d) Normally he must be retained in an active duty status during the notice period;

(e) Full consideration must be given to his reply and if the decision is to effect the action originally proposed, or some action less severe, he must be given a dated and written notice of the decision promptly after it is reached;

(f) The notice of decision must inform him of the effective date of the action, of his right to appeal the adverse action within the agency and to the Civil Service Commission and of the time limits and procedures for making the appeals.

(2) *Reduction in Force.* In the event his job is abolished, Mr. Fitzgerald is in Tenure Group I in the Excepted Service and has the right of full application of all reduction-in-force procedures insofar as "bumping" and "retreat" rights *within his competitive level grouping*. However, since he is the only employee in his competitive level grouping and since he did not progress to this position from other lower grade positions, the net result is that he is in competition only with himself. He could neither "bump" nor displace anyone.

These are the rights involved should charges be preferred or should his position be abolished. There is a third possibility, which could result in Mr. Fitzgerald's departure. This action is not recommended since it is rather underhanded and would probably not be approved by the Civil Service Commission, even though it is legally and procedurally possible. The Air Force could request conversion of this position to the career service, utilizing competitive procedures, and consider all the eligibles from the Executive Inventory and an outside search. Using this competitive procedure, Mr. Fitzgerald might or might not be selected. If not, displacement action would follow.

When Mr. Fitzgerald was appointed in September 1965 by Assistant Secretary Marks to fill the vacancy created by the departure of Mr. J. Ronald Fox, it was with a mutual understanding that this was to be a Schedule A appointment of *two or three years duration*. There is nothing in official records to support this understanding. Dr. Flax contacted Mr. Marks by telephone on January 2, 1969, and verified this understanding and reflected the conversation in his memorandum to the Secretary of Defense, a copy of which is attached. We have carefully screened all files and records and can find no formalized confirmation of this understanding.

If you desire additional information or more detailed specifics, I have the complete files available.

JOHN A. LANG, JR.
The Administrative Assistant.

Mr. CHARLES. As I indicated earlier, I am not thoroughly familiar with this aspect of the case. But your reading of that simply indicates to me that Mr. Lang was outlining various things that could happen under certain conditions. It does not sound like an invitation to dismissal to me.

Chairman PROXMIRE. If I were working for anybody and a memorandum like this was written on how you could handle me and get rid of me, and each one of these alternative suggestions as a way of ending the career in the Air Force of Mr. Fitzgerald, I would figure that they were not exactly contemplating a promotion or giving me a medal. [Laughter.]

Mr. CHARLES. The wording may have been unfortunate; I do not know.

Chairman PROXMIRE. It sure is.

Mr. CHARLES. I do not know who drafted the memorandum.

Mr. NELSON. If I may answer that: this was an answer to a question, "What are Mr. Fitzgerald's rights?" and from a subordinate standpoint I can tell you if the boss wants to know what his rights are he wants to know what they are all the way across. There is nothing in that that said, does not say, nor was it intended to say, that he is going to be dismissed. It is a question of what are the alternatives that the boss is entitled to know, sir.

Chairman PROXMIRE. Well, all I want to say is that it is very, very difficult for Congress ever to determine whether there has been disciplinary action against people who come up here and are frank. It is very difficult for us to determine whether action is taken or not. In the 11 years I have been in the U.S. Senate, this is by far the most conspicuous example of direct retribution against a man who spoke out, and spoke the truth.

I have never seen anything as shocking as this, even though you make the defense that the language was unfortunate; or that the timing is bad; or that computers make mistakes, and so on.

It seems to me it is impossible to give a stronger case that the Air Force is disciplining a man who had the courage and the conviction to tell Congress the truth when he was asked a question.

Now, let us get into the C-5A. You have a very fine statement, and you may proceed any way you want to. This involves as you have said, a complicated and very important procurement.

It is an extremely long statement.

Mr. CHARLES. Yes, it is.

Chairman PROXMIRE. It is available to the press, I take it. We can put it in the record and you can either read the entire statement—I am willing to stay here as late as you want—or you can summarize it and then respond to questions. It is 34 pages long and that is the reason I raise that point.

TOTAL PACKAGE PROCUREMENT

Mr. CHARLES. Yes.

Before I even get into the statement, let me say this: I am responsible for Total Package procurement; I am responsible for its being applied to the C-5A, and I accept that responsibility.

Now, with respect to the statement itself, it is a long statement. I can summarize it in one-third of the time it would take to read the statement.

Representative GRIFFITHS. Let me ask a question before you start, please, because I cannot stay that long.

May I ask you: What, in your judgment, is the effect of permitting the research and development costs to be applied against the production costs, other than fooling the Appropriations Committee?

Mr. CHARLES. Would you repeat that question?

Representative GRIFFITHS. What, in your judgment, is the effect, good or bad, or the desirability of permitting research and development costs to be allocated over on the production costs?

Mr. CHARLES. They are not allocated to production costs.

Representative GRIFFITHS. Well, you show me how they are not.

Mr. CHARLES. They simply are not.

Representative GRIFFITHS. Well, you have not paid off completely any of these costs that have gone over; you permit them to recoup on the next planes, do you not?

Mr. CHARLES. If you listen to the statement, I think it will come out.

Representative GRIFFITHS. Well, I have looked through part of the statement and I still wonder what your theory is and where you point out that it is customary for these contractors to underestimate these costs. I do not think that excuses you at all. I think that makes the thing many times worse, not less.

Mr. CHARLES. If you will allow me to proceed in an orderly way, I will.

Representative GRIFFITHS. Proceed.

Mr. CHARLES. This subcommittee is interested in economy in Government. So are we. This subcommittee is concerned with the cost of the C-5A program. So are we. In fact, we are concerned with the cost, not only of the C-5A, but of all weapon systems. We have been for many years.

It was this very concern which prompted the concept of Total Package procurement, with respect to which there was some testimony at your hearings on November 11-14, 1968.

The C-5A program involved the first use of Total Package contracting. Why Total Package, and what is it?

ENORMOUS COST OVERRUNS IN PAST PROCUREMENTS

The procurement of our major weapon systems has in the past been characterized by enormous cost overruns—several hundred percent—and by technical performance that did not come up to promise.

A large portion of these cost increases resulted from legitimate program changes caused either by technological advances during the period of development and production, or by shifting military requirements. A substantial amount, however, was due to the fact that most contracts for major systems were of a cost reimbursement type which provided little if any motivation for economy, and were not awarded on a price competitive basis. As recently as fiscal year 1961, only 17 percent of the Air Force's contracts were awarded competitively.

The main reason for this low percentage was that in our major programs the production work, which represents about 80 percent of those programs, was awarded without competition to the development contractor.

And so in an attempt to get more competition we are now testing a plan called Total Package procurement. Its first application was to the C-5A program.

COMPETITION IN TOTAL PACKAGE PROCUREMENT

Stated in its simplest terms, it places the bulk of a program, rather than a small fraction thereof, under the umbrella of competition.

In my judgment—and I have the responsibility therefor within the Air Force Secretariat—the best way to achieve superior defense hardware economically and on schedule is by the use of competitively awarded contracts which contain strong incentives for ontime delivery of high-quality products at the lowest cost. Under the competitively

awarded C-5A contract the contractor's performance commitments, which were 7 percent better than what the Air Force expected, are backed up by incentives for improving that performance, and by a clause requiring deficiencies to be corrected at no increase in target price; his price commitments, which were considerably better than what the Air Force expected, are backed up by a formula under which costs above or below the target cost are substantially shared by the contractor; and his schedule commitments, which were what the Air Force requested, are backed up by substantial penalties for late delivery; that is, \$12,000 per day for each of the first 16 airplanes up to a maximum of \$11 million.

C-5A CONTRACT

The economical and onschedule acquisition of superior defense hardware is what Total Package procurement attempts to do. This is what the C-5A contract, which is the only Total Package application on which we now have meaningful experience, is doing.

Let's look at the record.

TECHNICAL PERFORMANCE WILL EXCEED CONTRACTUAL COMMITMENTS

First, with respect to technical performance of the C-5A, we believe that it will exceed the contractor's proposed performance on which the decision to proceed was based, and will also exceed his contractual commitments.

How does this compare with other programs? The record indicates that actual performance on other programs has averaged about 85 percent of the proposed performance and about 90 percent of contractual target commitments. The program most comparable to the C-5A is the C-141, which is uniformly considered to be one of our best managed programs under the conventional sequential contracting method. Like the C-5A, the highly successful C-141 is a subsonic jet transport and was designed and built by the same division of the same company. The principal technical difference is that the C-5A involved a considerably greater advance in the state of the technical art, and, therefore, was more difficult to achieve.

In the case of the C-141, the actual performance came to 87 percent of the contractor's proposed performance and to 92 percent of his contractual target commitments.

In short, the C-5A is meeting the performance proposed by the contractor and on which the decision to proceed was based. It is meeting its contractual commitments with respect to performance. I know of no other aircraft program where the record has been so good.

Therefore, with respect to the technical performance of the equipment, we are most happy with this first test of Total Package procurement.

REDUCTION IN AMOUNT OF PRICED CHANGES

This excellent and unique performance record has been accompanied by a significant reduction in the amount of priced changes. Three years and 3 months after contract go-ahead in each case, priced changes—extrapolated through 120 airplanes—on the C-5A airplane contract have amounted to only one quarter of 1 percent of the original contract

target price. They were seven times greater on the C-141. There have been no priced changes on the C-5A engine contract, which is also Total Package.

COST INCREASES

With respect to costs, we are disappointed. In October 1964, at the beginning of the C-5A program, the Air Force estimated the program cost to the Government of 120 airplanes, excluding spare engines and parts, and in constant 1964 dollars, to be \$3.116 billion. However, this involved a smaller, shorter-range airplane, and an extrapolation of these costs for the larger airplane for which we actually contracted amounts to \$3.466 billion. The current estimated cost of the Government, including projected inflation, is \$4.348 billion, which is \$882 million, or 25 percent more.

Economic inflation has been the biggest single cause of the increased costs, amounting to about \$500 million as compared to 1964 constant dollars. If the inflation of \$500 million is included, the Air Force estimate of October 1964 becomes \$3.966 billion, and the current estimate of \$4.348 billion is \$382 million, or less than 10 percent, above the earlier estimate.

With this background, I would now like to address the specific questions contained in your letter of December 20, 1968.

MILITARY REQUIREMENT FOR C-5A

1. As to the military requirement for this airplane.

During the course of the past 5 years, the Air Force and the Army have given continuous attention to the need for, and the sizing of, our strategic mobility capabilities.

Our capability to respond to the national strategy is analyzed annually in three major documents, the Draft Presidential Memorandum, the Joint Strategic Objective Plan, and the Strategic Movement Capability Study. Supplementary studies are conducted by the Office of the Secretary of Defense, by the Joint Chiefs of Staff, and by the services whenever necessary.

Requirements for the C-5A, based on experience gained in Southeast Asia, changing Army tactics as a result of air mobile, helicopter equipped, units, and other factors from which increased demands for rapid mobility have evolved, are currently being reviewed and measured against the increased costs of the C-5A, and against possible alternatives.

Based on present information, the six-squadron force of 120 C-5A's is being retained in our force structure for planning purposes.

RECOGNITION OF COST INCREASES

2. The second series of questions involves the timing of the recognition of cost increases and what was done about them.

A cost overrun, in the sense that the contractor would exceed his proposed target, was anticipated by the Air Force at the time of contract award, that is, September 30, 1965. That target was proposed in an extremely lively competition. Consequently, the contractor proposed an airplane that had somewhat better performance—about 7 percent—than expected by the Air Force. We accepted this increased

capability since it could be used effectively in accomplishing our mission. He also submitted a minimum cost proposal.

Thus, the \$2.985 billion contract target price for 120 complete C-5A airplanes, which included engines, other Air Force costs, and all but abnormal inflation, was \$481 million lower than the adjusted 1964 Air Force estimate of \$3.466 billion excluding inflation.

Since program inception, costs, schedule, and technical performance have been reviewed continually.

In 1966, wind tunnel tests revealed significant excess drag. This required a redesign of the wing, nose section and fairings, with consequent premiums engineering overtime and out-of-station installation of significant portions of the airplane in order to meet schedule. In addition, the airplane was overweight. This problem forced the introduction of new and more costly materials and manufacturing techniques, such as beryllium in the brakes, electron beam welding, and the extensive use of titanium fasteners.

Problems of this nature are unfortunate, and their solutions are usually costly, but they can and do occur in the design and development of complex, modern weapon systems.

The August 1967 review indicated that engineering design costs were exceeding the contractor's target costs for this element by 80 percent. Similarly, further cost growth became apparent at the sub-contractor level.

The extensive analyses made in the fall of 1968 confirmed and extended these cost increases.

INFLATION AND DEVELOPMENT PROBLEMS

The single most significant cost increase is accounted for by inflation, not only in the national economy, but particularly in the aerospace portion of the economy. The following unanticipated events coincided to produce this inflation:

- (a) There was a sustained boom in the general economy.
- (b) A relatively minor involvement in Southeast Asia turned into a major conflict, and greatly increased the demand for military aircraft.
- (c) There was an unprecedented boom in the commercial aircraft market, particularly for jet transports.

As indicated earlier, it is estimated that the resulting inflation over the 6½-year period required to develop and produce 120 C-5A airplanes, will amount to about \$500 million.

In addition, the disruption of the normal supply-demand equation caused by the above three factors had several other adverse effects on C-5A costs, particularly in the areas of experienced personnel and outside purchases.

In brief, Lockheed entered into a contract and then the economic conditions for its performance turned out to be much more difficult than anticipated, by virtue of the war and a concurrent civilian boom, particularly in the demand for commercial transport aircraft.

In summary, I believe that the cost growth currently projected on the C-5A program has not been the result of inefficiency but rather it has been caused by normal development problems associated with complex weapons, compounded by abnormal escalation in the economy and disruption of the aircraft market.

AIR FORCE RESPONSE TO COST GROWTH

In response to your question as to what was done about the cost growth, that action was taken in 1965 when we decided to obtain the C-5A under a Total Package contract. As indicated earlier, the best way to get superior defense hardware at low cost is to acquire it under a competitively-awarded contract containing strong incentives for high quality at low cost.

For every dollar that Lockheed spends over the target cost set in competition, he pays 30 cents. All costs in excess of the contract ceiling price are borne by the contractor. In addition, he is contractually bound to meet the performance specifications, also set in competition. I know of no other technique that will be as successful in accomplishing what we seek.

RECENT COST ESTIMATES

3. The third series of questions pertains to various recent cost estimates.

In October 1968 the Defense Contract Audit Agency (DCAA) and the Air Force Plant Representatives Office (AFPRO) were asked by the System Program Office to analyze a Lockheed proposal of \$1.457 billion for production run A. This analysis was for the purpose of developing a Government position in connection with the then planned, but subsequently canceled, negotiations with Lockheed.

The DCAA did not conduct separate studies of Lockheed's cost estimates, but rather worked with the Air Force as part of a team. The DCCA relied on the AFPRO technical estimates, and conversely the AFPRO looked to the DCAA for verification of direct labor, overhead, and general and administrative expenses. Only a portion of the total cost estimates is comparable. Therefore, under the circumstances, there is no basis for a direct comparison of DCAA and Lockheed's total estimate.

The Aeronautical Systems Division cost team developed an estimate of \$1.526 billion, including costs attributable to rework likely to result from flight and other testing. The ASD cost team believes the Lockheed estimate was overly optimistic.

A statement was made to this subcommittee on November 13, 1968, to the effect that the cost of this program could increase by \$2 billion. I have been unable to validate this estimate, but I note that \$600 million of this increase—the difference between \$300 million in the original estimate and \$900 million subsequently submitted to your subcommittee in connection with the testimony—is in a category entitled "AFLC investment" which covers spare parts, ground equipment, and similar items.

You should be advised that the Air Force Logistics Command investment—estimated at \$777.2 million, rather than \$900 million—now includes two major categories of cost—replenishment spares and other support—which were not previously included as investment costs, but as operating costs because they were a function of aircraft utilization. Parenthetically, one of the reasons for the increase in these operating costs is that we have included a provision for increasing the wartime utilization rate on these aircraft. In any case, if these items are included in the present estimated investment cost of the C-5A program,

for comparison with the original cost estimate, they should also be included in the original estimate. Otherwise, you are comparing apples with oranges.

Chairman PROXMIRE. Just to interrupt at this point to say they were included in the original estimate Mr. Fitzgerald gave us. They included more—he included spares originally and spares on the basis of the increased costs.

Mr. CHARLES. I would have to see those figures before I agree with that.

Chairman PROXMIRE. All right.

Mr. CHARLES. The fourth series of questions pertains to the legality—

Chairman PROXMIRE. Incidentally, let me just interrupt to say this was the reason for the discrepancy. This explained the discrepancy completely, and the entire difference between the Air Force estimate and the Fitzgerald estimate was in the spares. He included them both times.

Mr. CHARLES. Again, I would like to see the figures before I can comment on it.

REPRICING FORMULA

4. The fourth series of questions pertains to the legality and desirability of applying the repricing formula in the C-5A contract.

We consider that the repricing formula can be exercised in accordance with legal requirements, and is desirable.

There was a valid reason for this provision. The C-5A contract was the first Total Package contract and exposed the contractor to three new risks of major proportions:

The first such risk was a commitment to the technical performance, delivery schedule, and price of operational production airplanes prior to the start of engineering development. As indicated earlier, on conventional sequentially procured systems, such commitment was made only after substantial completion of development, and even then usually in only one year's production run at a time. Further, the C-5A commitment is enforced by a new correction-of-deficiencies clause which is much more strict in assuring compliance with performance requirements than is the normally used inspection clause.

The second such risk involved responsibility for total system performance; that is, the operation in the air of the integrated aircraft, including engines. Previously, the responsibility for integration problems, for example, at the interface of the airframe and the engines, was largely assumed by the Government because of the difficulty of allocating responsibility for degraded performance between different components of the integrated system.

The third such risk was a commitment of extreme length; that is, 6½ years from contract go-ahead and 7 years from submission of firm proposals. Normally, the commitment involves between 1½ and 3 years.

In view of these risks, and of the uncertainties attendant upon the development of any major new system, the C-5A contract was purposely structured to provide protection, for both the Government and the contractor, against unanticipated contingencies arising out of this first use of the Total Package concept.

I should point out that, in the absence of protective provisions, all the competitors would have had to include in their proposed prices some margin to cover these contingencies at a price increase; and then contingencies might not have occurred, in which case the Government would have been paying something for nothing.

It was to this situation that the C-5A price adjustment formula was addressed. Thus, the contract provided that if the actual cost of the 53 airplanes of run A exceeded their target cost by more than 30 percent, an upward price adjustment would be made. It also provided that if the actual cost of those 53 airplanes was below the target cost by more than 10 percent, a downward price adjustment would be made.

The adjustment was not intended to turn a loss into a profit nor even to eliminate a loss. It was designed only to prevent corporate disaster by reducing catastrophic losses to manageable proportions or, on the other hand, if costs were substantially below target to reduce excessive profits by providing a refund to the Government.

This repricing clause was in the proposed contract to which all the competitors bid; and their bids assumed that, if consummated, the resulting contract would be honored. Therefore, adhering to this clause is desirable in the interest of preserving the integrity, not only of this contract, but of the relationship between the Government and industry.

POSSIBILITY OF REVERSE COST INCENTIVE

The only objection to the repricing formula is that in theory it contains the possibility of a reverse cost incentive under certain conditions which may exist in the future. This, of course, bears on the question of legality, in particular the prohibition against cost-plus-a-percentage-of-cost contracting.

The conditions which might create a reverse cost incentive do not exist now, nor will they exist, at the earliest, until such time as we decide to authorize expenditures on airplanes beyond the fourth squadron, which we have not done.

If at any time in the future there is a possibility that a reverse cost incentive might arise, I assure you that the repricing formula will be used, in modified form if necessary, in accordance with the statutes and regulations proscribing cost-plus-a-percentage-of-cost contracting and otherwise in the best interests of the Government.

To be perfectly clear on this matter of price adjustment, the Government is not altering in any way the pricing formula set forth in the original contract, which was entered into in competition. We are simply invoking the pricing provisions of the contract in accordance with its terms.

REPRICING FORMULAS IN OTHER CONTRACTS

5. The fifth series of questions pertains to other contracts which contain similar repricing formulas.

There are two others: The A6M-69A Short Range Attack Missile (SRAM), and the A6M-65A Air-to-Ground Missile (Maverick).

In the SRAM contract, the repricing formula is not applicable unless actual costs of the initial production options exceed 130 percent of target cost or are less than 90 percent of target cost.

An overrun in the amount of \$55 to \$60 million is currently projected in the development portion of this program. This overrun does not form a basis for applying the adjustment formula. Nevertheless, the program has been, and is, under continuous review to insure that the operational requirement is still cost effective in light of the increased cost.

In the Maverick contract, the repricing formula provides for upward repricing if the actual cost of the first two production runs exceeds target cost by more than 25 percent, and for downward repricing if the actual cost is lower than target cost by more than 10 percent.

Chairman PROXMIRE. Can you give us that cost effectiveness ratio, the benefit-cost ratio, or however you figure that?

Mr. CHARLES. Excuse me?

Chairman PROXMIRE. You say in the sentence you just read the program has been and is under continuous review to insure that the operational requirement is still cost effective in the light of the increased cost.

Mr. CHARLES. Yes.

Chairman PROXMIRE. Can you tell us what the cost effectiveness ratio is now?

Mr. CHARLES. I wish I could. I cannot tell you that. All I meant to imply from this statement is that in view of the increasing costs on that program we are looking at it constantly to see if it is still worth buying. That is what it amounts to. To date we think it is, so we have not reached that point yet.

Chairman PROXMIRE. At any rate you have not gone ahead to spend \$2 billion for 62 additional planes, but simply for 23 planes?

Mr. CHARLES. You are talking about the C-5A?

Chairman PROXMIRE. Yes.

Mr. CHARLES. I thought you were talking about the SRAM.

Chairman PROXMIRE. I am sorry. I guess I did read it incorrectly.

Mr. CHARLES. All right.

Chairman PROXMIRE. You have not gone ahead, and I may have given the impression that this letter that I had—incidentally, everything is hitting us today at once—I have a letter from Secretary Clifford dated yesterday which we just received and which was first called to my attention a couple of minutes ago which says, "Expenditures and commitments will be limited to the 23 airplanes of the fourth squadron."

Mr. CHARLES. That is correct.

Chairman PROXMIRE. If they intend to go ahead with the fifth and sixth squadron they can make the decision later. But the feeling was because the new administration was coming in they would have to make a decision in 11 days; that is, before February 1, it would be necessary to, they could not do it efficiently in that way. So you made the decision not to go ahead with 23 more planes.

Mr. CHARLES. That is exactly right.

Chairman PROXMIRE. Can you give me information on the additional costs if it is not \$2 billion including spares, what would be the total cost?

Mr. CHARLES. I think I can give you that among these papers, but I am almost finished with this statement, and I will be glad to give it to you.

Chairman PROXMIRE. All right, sir.

Mr. CHARLES. There is no actual or projected cost overrun on the Maverick program at this time.

C-5A AN OUTSTANDING PROGRAM

I would now like to return to the C-5A program and to Total Package procurement, and to conclude this statement. While we are disappointed with the increased costs on the C-5A, I am convinced, weighing all factors and considering the problems with which it has been faced, that it is an outstanding program.

Comparing this airplane's actual performance with the contractor's proposed performance and with his contractual commitments, both of which it is expected to exceed, our analysis indicates that the results are far better on the C-5A than on any other system ever procured by the Air Force.

Comparing C-5A cost growth—25 percent above our original adjusted estimate excluding escalation and 10 percent including it—with the much greater increases on other systems, we are satisfied that the method of procurement used on the C-5A has effected great improvement in the cost area.

That concludes my statement, and I will be glad to try to answer any questions.

(The complete prepared statement of Mr. Charles above-referred to, follows.)

PREPARED STATEMENT OF ASSISTANT SECRETARY OF THE AIR FORCE, ROBERT H. CHARLES

Mr. Chairman and Members of the Subcommittee: This subcommittee is interested in economy in Government. So are we. This subcommittee is concerned with the cost of the C-5A program. So are we. In fact, we are concerned with the cost, not only of the C-5A, but of all weapon systems. We have been for many years.

It was this very concern which prompted the concept of Total Package procurement, with respect to which there was some testimony at your hearings on November 11-14, 1968.

The C-5A program involved the first use of Total Package contracting. Why Total Package, and what is it?

The answer to these questions stems from the history of the procurement of major weapon systems. According to Peck and Scherer, in "The Weapons Acquisition Process," published in 1962, actual costs of 12 major systems developed during the 1950's exceeded their estimated cost by an average of 220%, and in only one case was the "overrun" less than 100%. Of 22 programs studied by Marshall and Meckling of The RAND Corporation, actual costs exceeded estimates by 140-200%. Even wider disparities were noted in a recent study published by the Brookings Institution, "Government Contracting and Technological Change," by C. H. Danhof:

"During the 1950's, virtually all large military contracts reflected an acceptance by the military agencies of contractor estimates which proved highly optimistic. Such contracts ultimately involved costs in excess of original contractual estimates of from 300 to 700 percent . . ."

A large portion of these increases resulted from legitimate program changes caused either by technological advances during the period of development and production, or by shifting military requirements. A substantial amount, however, was due to the fact that most contracts for major systems were of a cost reimbursement type which provided little if any motivation for economy, and were not awarded on a price competitive basis.

It is difficult to quantify the cost effect of cost reimbursement contracts, but the odds favoring economical and efficient operations are higher under a contract which provides a monetary incentive therefor than under a contract which

assures the reimbursement of all of a contractor's allowable costs and therefore contains no such incentive.

More importantly, we believe, as does Congress, in the salutary influence of competition, wherever it can be effectively used. It results in better products, at lower prices. But as recently as FY 1961, only 17% of the Air Force's contracts were awarded on a price competitive basis. And if you review the major changes in our approach to system acquisitions since then, you will find that one of the driving ideas behind many of those changes has been simply this: we should devise procurement techniques that harness the forces of competition so as to make those forces work for both technical excellence and maximum economic value.

It is extremely difficult, however, to obtain price competition in our major systems such as the B-52, Minuteman, F-4, F-111 and C-5, which represent the core of our military hardware capability. Such systems always involve some advance in technology, and because this requires probing into the unknown, it is not possible accurately to estimate their performance and cost prior to their development. In view of this, it became the normal practice to award only the development work at the outset of a program. Subsequently, the production of the operational systems had to be awarded to the development contractor on a non-competitive basis unless the Government was willing to maintain two or more competitors during the development period; and in view of the great cost of development (e.g., \$900 million on the B-52), this could involve costs considerably greater than the benefits of preserving competition. Thus, by the time one of these major systems was ready for production, which was normally two to three years after go-ahead, the selected development contractor was so far into the program, and had built up such a store of technical knowledge, data and equipment applicable to that system, that it was virtually impossible to change contractors or to inject competition at that point. The company which won the development contract was for all practical purposes assured of winning the follow-on production contracts, on a non-competitive basis; and since production work normally represents about 80% of the total cost of a major system, the amount of competition could never exceed the 20% represented by development under the conventional procurement approach.

We were thus engaged in what former Air Force Secretary Zuckert referred to as "iceberg" procurement, with the partially visible out-of-water portion representing development and the larger invisible underwater portion representing production. We became wedded to a program and to a particular contractor without meaningful performance and price commitments, and without competition, with respect to the operational units in which we were really interested. As a result, we were too often confronted with very large cost overruns and less-than-promised performance which resulted, at least in part, from cost estimates which were understated and performance estimates which were overstated on the initial development contract.

It seemed to us that we must attack the real root of the problem, namely, the underwater portion of the iceberg.

But this appeared impractical if not impossible. How could you obtain competition with respect to an undefined system? Even if you could persuade industry to submit binding proposals concerning performance and price—a risky proposition indeed—how could you obtain, with respect to an undefined system, the comparability essential to a fair competition?

As part of a continuing effort to solve this dilemma, in 1964 the Department of Defense inaugurated a new procedure called Contract Definition. The heart of this procedure involves a conscious decision not to proceed with the development engineering of a system until it has been sufficiently defined to obtain credible estimates of performance and cost. Under this concept, pre-development contracts are awarded to two or more competitors to define the system more fully; and at the end of this definition phase, each contractor submits a performance and price proposal for development of the system. Since such proposals are based on a greater degree of refinement and clarity in the Work Statement, they are more comparable, and competition is more effective. Even so, the role of competition is severely limited if it stops at this point and applies only to the 20% of a program represented by development.

But in our major defense systems, there is no clear-cut point at which development stops and production begins. Development and production are a continuum. This, incidentally, helps to explain why it is difficult to change contractors at *any* point in a program. Development continues throughout production, although normally at a reduced level, and each step is interrelated with and builds upon

previous steps. But since the process is a continuum, the question arises: Why not treat the entire iceberg, both underwater and out-of-water, for what it is—a single unit? If the program is adequately defined, and if the technological building blocks are in hand, why not complete the entire package, i.e., both development and production?

The major additional question was: could we compete entire programs without imposing too much risk on industry, simultaneously providing industry the incentive to turn out the best quality at the lowest cost? We thought so, provided the incentive formula was properly geared to the technical and financial risks involved. In this connection, defense industry, if efficient, should earn the kind of profit needed to obtain the capital, personnel and facilities, and to perform the independent research and development, which are essential to making a continuing contribution to our national defense. In view of the risks inherent in making commitments concerning operational hardware before it has been developed, a contractual framework carefully tailored to these risks is required.

And so, in an attempt to obtain meaningful competition, and to obtain other benefits which I will describe shortly, we are now testing a plan to do just this. We call it "Total Package Procurement." Its first application was to the C-5A program.

Total Package Procurement postulates that if we can define with reasonable accuracy what a system is to do and if the needed major technology is already known so that its application to the system can be accomplished through straightforward development engineering, as opposed to exploratory research, then we can obtain contractual commitments concerning operational equipment, in competition, before development begins. Stated in the simplest terms, it places the bulk of a program, rather than a small fraction thereof, under the umbrella of competition.

Some of the expected benefits of Total Package Procurement are:

1. Although it cannot eliminate overly optimistic proposals concerning performance and cost, which are encouraged under conventional development-only contracts where the contracts can try to "get well" under the follow-on non-competitive production contracts, the production commitments in a Total Package contract do discourage such proposals, and thus should reduce performance disappointments, budget disruptions, funding reallocations, program stretchouts, and possible program cancellations.

2. It requires the Government to be more specific in telling industry what is wanted, and it requires industry to be more precise in making proposals, thus providing firmer information concerning performance, cost and delivery schedule before substantial resources are allocated to a program.

3. Since the contractor's commitments pertain to *production* units and their operation, he must design from the beginning (a) for economical production (thus minimizing production redesign and achieving earlier production learning curve benefits), and (b) for the reliability and simplicity of maintenance to which he is by then committed. All of these are direct functions of initial design.

4. The contractor will be more interested in obtaining components, supplies and subcontract work, which average nearly 50% of most aircraft programs, from the most efficient sources, and by the most efficient means.

I do not want to suggest that Total Package procurement is suitable for all new major weapons systems, nor that there are no significant problems associated with its use. It should not be applied to programs subject to high development risk or to rapidly changing technology or requirements. But even if the dynamics of defense planning, with all its inherent instabilities, reduces the scope of what would otherwise be made susceptible to competition by the Total Package technique, this technique nevertheless holds high promise for very substantially expanding the extent to which we can procure major systems on a competitive basis.

One of the advantages of Total Package procurement is that it permits the Government to "disengage" from the "management" of the day-to-day operations of contractors, a practice felt to be necessary under cost reimbursement contracts and conventional contracts for development only followed by successive production runs.

Government "management" of industrial operations is not effective in creating or inducing efficiency because industrial efficiency, or inefficiency, is the product of hundreds of thousands of small decisions by company personnel. The result of attempts to exercise such "management" is a spiral of additional peo-

ple—of contractor control personnel trying to surround Government control personnel and vice versa. In my judgment, it is no coincidence that between 1955 and 1961, when the ratio of "Government-managed" cost-plus-fixed-fee contracts in the Air Force rose 77%—from 26.2% to 46.4%—the ratio of managers, schedulers, controllers, procurement and other overhead and administrative services personnel in the aerospace industry rose 107%—from 14% to 29% of total employment.

There is a significant difference in the degree to which Government "management" is required in conventional development-only contracts as compared to Total Package contracts. In the former case, the contractor has no contractual responsibility for anything other than development, and the Government clearly must be in a position to exercise control over contractor trade-off decisions during development which could adversely affect the operational characteristics or cost or availability of production articles—the only items in which the Government is ultimately interested. Under a Total Package contract, however, such control is less necessary because the interests of the contractor, having committed himself to *production* articles, are aligned with those of the Government; in short, both are interested in operational equipment which meets specification at the lowest cost. In fact, to the extent that the Government "manages" the contractor's work, it will succeed only in relieving the contractor of his responsibilities. Thus, when the Government approves the details of design, for example, it can hardly avoid sharing the responsibility for degraded performance if the part manufactured to that design does not operate as expected. Authority and responsibility are twins; you cannot have the one without the other.

Although I have emphasized the importance of management by the contractor, I must also stress the fact that visibility by the Government of the cost and performance of a contractor is essential. The Government needs this visibility to make decisions concerning budgeting, funding, and the all-important question of whether to continue with a program whose cost may escalate beyond its worth. The Air Force has pioneered in establishing new techniques for obtaining this visibility. But in itself this visibility will not, I believe, have any significant impact on the contractor's costs.

On the other hand, the Air Force has for many years sent industrial management review teams into its contractor's plants periodically, with a view to spotting management deficiencies to which contractor managements had become accustomed, and which an outsider can sometimes more readily detect.

In my judgment—and I have the responsibility therefor within the Air Force Secretariat—the best way to achieve superior defense hardware economically and on schedule is by the use of competitively awarded contracts which contain strong incentives for on-time delivery of high quality products at the lowest cost. Under the competitively-awarded C-5A contract: the contractor's performance commitments (which were 7% better than what the Air Force expected) are backed up by incentives for improving that performance, and by a clause requiring deficiencies to be corrected at no increase in target price; his price commitments (which were considerably better than what the Air Force expected) are backed up by a formula under which costs above or below the target cost are substantially shared by the contractor; and his schedule commitments (which were what the Air Force requested) are backed up by substantial penalties for late delivery, i.e., \$12,000 per day for each of the first 16 airplanes up to a maximum of \$11 million. The economical and on-schedule acquisition of superior defense hardware is what Total Package procurement attempts to do. This is what the C-A contract, which is the only Total Package application on which we now have meaningful experience, is doing.

Let's look at the record.

First, with respect to technical performance of the C-5A—which is what we are really after—all flight test and other data now available (3¼ years after contract go-ahead and 6½ months after first flight) provide a reasonable basis for confidence that it will exceed the contractor's proposed performance on which the decision to proceed was based, and will also exceed his contractual commitments. Thus, after weighting various characteristics according to their relative importance, actual performance exceeds both the contractor's proposed performance and his contractual commitments by nearly 1% (both of which exceeded Air Force expectations by 7%), and in no single characteristic is there a deficiency. Details are shown in the following chart:

C-5A TECHNICAL PERFORMANCE

Performance element	Performance history			Actual performance (per- cent) compared to—		Weighting of performance element
	Contractor's proposal	Contractual commitment	Projected, actual	Contractor's proposal	Contractual commitment	
Cruise speed (kilometers).....	440	440	440	100.0	100.0	0.11
Takeoff distance, heavy payload (feet).....	8,000	8,000	7,814	102.3	102.3	.12
Landing distance, radius mission (feet).....	3,900	3,900	3,700	105.1	105.1	.12
Payload at 3,000 nautical miles (pounds).....	220,000	220,000	220,000	100.0	100.0	.30
Payload at 4,000 nautical miles (pounds).....	176,000	176,000	176,000	100.0	100.0	.20
Payload at 5,000 nautical miles (pounds).....	112,600	112,600	112,600	100.0	100.0	.15
Weighted average, actual per- formance.....				100.9	100.9	1.00

How does this Total Package record compare with other programs which were procured under conventional sequential contracts, i.e., on the basis of an initial development contract followed by non-competitive production buys? The record indicates that on those contracts actual performance, again after weighting various characteristics according to their relative importance, has averaged about 85% of proposed performance and about 90% of contractual target commitments. The program most comparable to the C-5A is the C-141, which is uniformly considered to be one of our best-managed programs under the sequential contracting method. Like the C-5, the highly successful C-141 is a subsonic jet transport and was designed and built by the same division of the same company. The principal technical difference is that the C-5 involved a considerably greater advance in the state of the technical art, and therefore was more difficult to achieve. For example, the C-141's engine was one of the more recent members of a family of turbofans developed and produced in substantial quantities over a period spanning almost 10 years, and this family was in turn an outgrowth of a turbojet engine, the development of which goes back to 1948. On the other hand, the engine for the C-5 is a new engine, representing a significant advance in technology: fan by-pass ratio of 8-to-1 vs. the previous 1.2-to-1; pressure ratio of 23-to-1 vs. 17-to-1; and turbine inlet temperature of 2300° F. vs. 1900° F. In the case of the C-141, the actual performance came to 86.8% of the contractor's proposed performance and to 91.7% of his contractual target commitments, as indicated by the following:

C-141 TECHNICAL PERFORMANCE

Performance element	Performance history			Actual performance (per- cent) compared to—		Weighting of performance element
	Contractor's proposal	Contractual target com- mitment	Actual	Contractor's proposal	Contractual target com- mitment	
Cruise speed (kilometers) ¹	440	440	430	97.7	97.7	0.11
Takeoff distance (feet).....	6,000	6,000	6,640	89.3	89.3	.12
Landing distance (feet).....	5,280	5,500	4,650	111.9	115.5	.12
Payload at 3,000 nautical miles (pounds).....	81,000	70,000	72,197	89.1	103.1	.30
Payload at 4,000 nautical miles (pounds).....	69,200	68,700	58,850	85.0	85.7	.20
Payload at 5,500 nautical miles (pounds).....	39,200	38,700	21,350	54.5	55.2	.15
Weighted average, actual per- formance.....				86.8	91.7	1.00

¹ Objective.

In short, based on flight testing and other analyses to date, the C-5 is meeting the performance proposed by the contractor and on which the decision to proceed was based. It is meeting its contractual commitments with respect to performance. I know of no other aircraft program where the record has been so good.

Therefore, with respect to the technical performance of the equipment, we are most happy with this first test of Total Package procurement.

This excellent and unique performance record has been accompanied by a significant reduction in the amount of priced changes, which usually increases the original cost estimates substantially, but which is not considered a cost overrun. Again, a comparison of the C-5A and C-141 programs is instructive: 3 years and 3 months after contract go-ahead in each case, priced changes (extrapolated through 120 airplanes) on the C-5A airframe contract have amounted to one-quarter of one percent of the original contract target price. They were seven times greater on the C-141. There have been no priced changes on the C-5A engine contract, which is also Total Package.

With respect to costs, with which I will deal more fully later in this statement, we are disappointed. In October 1964, at the beginning of Contract Definition for the C-5, the Air Force estimated the program cost to the Government of 120 airplanes, excluding spare engines and parts, and in constant 1964 dollars, to be \$3.116 billion. However, this involved a smaller, shorter-range airplane, and an extrapolation of these costs for the large airplane for which we contracted amounts to \$3.466 billion. The current estimated cost to the Government, including projected inflation, is \$4.348 billion, which is \$882 million, or 25% more than the October 1964 estimate of \$3.466 billion, adjusted for the larger airplane.

There have been many reasons for these increased costs, as I will indicate later, but economic inflation has been the biggest single cause, amounting to about \$500 million as compared to 1964 constant dollars. It must be remembered that the contract for 120 airplanes extends over 6½ years, much longer than the normal 2 or 3 year contract. Thus, if the inflation of \$500 million is included, the Air Force estimate of October 1964 becomes \$3.966 billion, and the current estimate of \$4.348 billion is \$382 million, or less than 10%, above the adjusted 1964 estimate of \$3.966 billion.

With this background, I would now like to address the specific questions contained in your letter of December 20, 1968 to the Secretary of the Air Force.

1. The first series of questions pertains to C-5A force structure, that is, to the military requirement for this airplane.

During the course of the past five years, the Air Force and the Army have given continuous attention to the need for, and the sizing of, our strategic mobility capabilities. In airlift, our objective has been twofold: to provide the capability to deploy the required personnel and major items of Army and Air Force equipment within the closure times essential to JCS-approved contingency plans, and subsequently to assure an adequate volume and timely resupply thereof to combat areas; and to make all these moves with a speed which precludes the necessity for extensive and costly forward basing.

Since the hearings on Military Posture in January and February of 1964, the Department of Defense has annually validated before the Congress, the need for the C-5A. This new weapon system will provide greatly increased mobility for the large Army and Air Force first echelon items since it is the only aircraft in being or now on order for either airline or military purposes which is capable of on-loading the substantial quantities of this defense equipment which is too large to be carried in the C-141. In addition, the C-5A will represent the lowest cost military airlift available. A listing of DOD testimony before the various Senate and House Committees can be provided if you so desire.

Our capability to respond to the national strategy is analyzed annually in three major documents, the Draft Presidential Memorandum, the Joint Strategic Objective Plan (JSOP), and the Strategic Movement Capability Study (MOVECAP). Supplementary studies are conducted by the Office of the Secretary of Defense, by the Joint Chiefs of Staff, and by the Services whenever necessary. Requirements for the C-5A, based on experience gained in Southeast Asia, changing Army tactics as a result of air mobile (helicopter equipped) units, and other factors from which increased demands for rapid mobility have evolved, are currently being reviewed and measured against the increased costs of the C-5A and against possible alternatives. Based on present information, the 6-squadron force of 120 C-5A's is being retained in our force structure for planning purposes.

2. The second series of questions involves the timing of the recognition of cost increases, and what was done about them.

A cost overrun, in the sense that the contractor would exceed his proposed target, was anticipated by the Air Force at the time of contract award, i.e., September 30, 1965. That target was proposed in an extremely lively competition. The winner was expected to be the military airlift specialist for many years. In addition,

as a result of developing the C-5A, he was expected to gain an important position in the future commercial market for huge jet cargo transports. As stated by FORTUNE magazine in December 1965:

"The competition for this contract was memorably exhaustive . . . The competitors * * * spent some \$60 million of their own funds and committed more than 4,000 of the nation's top engineers to the undertaking. They committed themselves to this gruelling exercise because they were aware that the stakes were appreciably greater than the * * * [military] program itself. The winners could expect to get a corner on the commercial market for a plane that promises eventually to become a standard work horse of the air transport business."

For these reasons, as indicated earlier, the contractor proposed an airplane that had somewhat better performance (about 70%) than expected by the Air Force. We accepted this increased capability since it could be used effectively in accomplishing our mission. He also submitted a minimum cost proposal.

Thus, the \$2.985 billion contract target price for 120 complete C-5A airplanes, which included engines, other Air Force costs, and all but abnormal inflation, was \$481 million lower than the adjusted 1964 Air Force estimate of \$3.466 billion excluding all inflation, for a lower performance airplane.

Since program inception, costs, schedule, and technical performance have been reviewed continually, but several specific instances are worth noting.

In February 1966 (4½ months after contract award), the C-5A System Program Office (SPO) reviewed the direct labor and overhead rates being proposed by Lockheed on the C-141 airplanes being built in the same plant and found them to be significantly higher than those on which the contractor had predicated his C-5A target price. At the same time, our System Program Office review of the subcontracts which Lockheed was negotiating on the C-5A program indicated that the contractor's outside purchases would involve higher costs than expected.

Later in 1966, wind tunnel tests of the then projected C-5A configuration revealed that significant excess drag would prevent the airplane from meeting its performance guarantees. This required a redesign of the wing, nose section and fairings, with consequent premium engineering overtime and out-of-station installation of significant portions of the aircraft in order to meet schedule. In addition, the airplane was overweight. This problem forced the introduction of new and more costly materials and manufacturing techniques, such as beryllium in the brakes, electron beam welding, and the extensive use of titanium fasteners. Problems of this nature are unfortunate, and their solutions are usually costly, but they can and do occur in the design and development of complex, modern weapon systems.

Another significant review occurred in August 1967, when data became available through the point where 90% of the engineering design had been released for manufacture. This review indicated that engineering design costs were exceeding the contractor's target costs for this element by 80%. Similarly, further cost growth became apparent at the subcontractor level.

Again, in March 1968, data on shop completion of the first airplane indicated that manufacturing costs would cause Lockheed substantially to exceed target costs.

The extensive analyses made in the fall of 1968 confirmed and extended these cost increases.

The foregoing examples reflect the normal Air Force management review of weapon systems during the critical stages of a new program as it progresses through design, development, and into production. These reviews will continue through the testing and concurrent production phase. In addition to the Secretary of the Air Force's semi-annual required review on major systems in development and acquisition, the System Program Office and the Air Force Plant Representative continually review the contractor's progress in cost, performance and schedules, both attainments and projections, through monthly and quarterly management reports.

As a general observation, potential deviations from contract target cost can be identified at various times throughout the life of a contract. Usually, potential deviations begin to surface during engineering development when the design is firm enough to estimate manufacturing costs and when subcontract commitments are being negotiated.

Under some circumstances situations occur that may reveal cost divergencies earlier. For example, during initial design, restarts may be necessary if preliminary testing and analyses indicate potential performance problems. This condi-

tion actually happened on the C-5A drag and weight problems mentioned earlier.

Even when design is reasonably firm, subsequent events may flag cost increases. Static, fatigue, or flight tests may reveal design deficiencies that must be corrected to meet contractual performance requirements. Such corrections in design, and the resulting changes in subcontracting and manufacturing, operate to increase initially estimated costs.

Any one of the foregoing situations is aggravated by concurrent development and production, i.e., release to production before completion of design, development and testing. Our more recent Total Package Procurement contracts, such as those for the SRAM and Maverick, require successful development demonstration before items are released to production.

Notwithstanding the above factors, the single most significant cost increase is accounted for by inflation, not only in the national economy, but particularly in the aerospace portion of the economy. The following unanticipated events coincided to produce this inflation:

- a. There was a sustained boom in the general economy.
- b. A relatively minor involvement in Southeast Asia turned into a major conflict, and greatly increased the demand for military aircraft.
- c. There was an unprecedented boom in the commercial aircraft market, particularly for jet transports. For the first time in history, in 1967 commercial aircraft deliveries, in pounds of weight empty, i.e., the manufactured hardware, exceeded military aircraft deliveries.

As indicated above, it is estimated that the resulting overall inflation, over the 6½-year period required to develop and produce 120 C-5A airplanes, will amount to about \$500 million on this program.

In addition, the disruption of the normal supply-demand equation caused by the above three factors had several other adverse effects on C-5A costs, particularly in the areas of experienced personnel and outside purchases. For example, because of the heavy demand for engineers in this country, Lockheed had to employ 850 engineers in England. While engineering talent there is good, and less costly per direct man-hour than in the U.S., these advantages were more than offset by the requirements for overseas liaison and differences in engineering techniques. With respect to outside purchases, it has been difficult to obtain parts and components from suppliers on schedule. Thus, the lead time on some forgings increased from 18 weeks in 1965 to 30 weeks in 1967—a 12-week delay. Typically, in an aircraft development-production program, this has the following effect. The part containing that forging is not ready for testing, or for incorporation into a component which must be tested, until 12 weeks after it is expected, and on which other testing, and the production schedule, is planned. In the meantime, production parts are fabricated on the assumption that the engineering design analysis prior to testing, is correct. When the tests are finally conducted—12 weeks late—any redesign results in a new cycle of testing and the scrapping or re-work of parts built to the original pretest design. Thus, in view of the tightness of the C-5A schedule, and of the penalties (up to \$11 million) for late delivery, the prime contractor released engineering drawings to production earlier than he would like and with less assurance that subsequent tests would not reveal deficiencies which could then be corrected, at added cost, only by an expensive out-of-station manufacturing operation, or by scrapping and refabricating the hardware involved.

In brief, Lockheed entered into a contract and then the economic conditions for its performance turned out to be much more difficult than anticipated, by virtue of the war and a concurrent civilian boom, particularly in the demand for commercial transport aircraft. In summary, I believe that the cost growth currently projected on the C-5A program has not been the result of inefficiency but rather it has been caused by normal development problems associated with complex weapons, compounded by abnormal escalation in the economy and disruption of the aircraft market.

In response to your question as to what was done about the cost growth, that action was taken in 1965 when we decided to obtain the C-5A under a Total Package contract. As indicated earlier, the best way to get superior defense hardware at low cost is to acquire it under a competitively-awarded contract containing strong incentives for high quality at low cost. For every dollar that Lockheed spends over the target cost set in competition, he pays 30¢. All costs in excess of the contract ceiling price are borne by the contractor. In addition, he is contractually bound to meet the performance specifications, also set in competition. I know of no other technique that will be as successful in accom-

plishing what we seek. In order to give us greater visibility of future cost trends, we have directed the installation of a new accounting system which our financial management people have been anxious to obtain.

3. The third series of questions pertains to various recent cost estimates.

As previously indicated, the Lockheed cost projections have been under continual review. The September 1968 review of those projections for Run A was made by an Aeronautical Systems Division cost team which included representatives of the Air Force Plant Representative's Office (AFPRO), and a Defense Contract Audit Agency (DCAA) member. The AFPRO assisted in estimating tooling, engineering, quality assurance and other areas involving technical matters. The DCAA team member reviewed subcontracts and material areas, along with direct labor, overhead, and general and administrative expenses.

In October 1968 the DCAA and the AFPRO were asked by the System Program Office to analyze a Lockheed proposal of \$1.457 billion for Production Run A cost in Material Program Codes 1010 (air vehicle), 1060 (systems management), and 1070 (data). This analysis was for the purpose of developing a Government position in connection with the then planned, but subsequently canceled, negotiations with Lockheed. This effort was divided so that the DCAA reviewed subcontract, material, labor, overhead, and general and administrative expenses, while the AFPRO estimated tooling, engineering, quality assurance and manufacturing costs.

From the foregoing, it can be seen that the DCAA does not conduct separate studies of Lockheed's cost estimates, but rather works with the Air Force as part of a team. The DCAA relies on the AFPRO technical estimates, and conversely the AFPRO looks to the DCAA for verification of direct labor, overhead, and general and administrative expenses. Only a portion of the total cost estimates is comparable. Therefore, under the circumstances, there is no basis for a direct comparison of DCAA and Lockheed's total estimate.

The Aeronautical Systems Division (ASD) cost team developed an estimate of \$1.526 billion, including costs attributable to rework likely to result from flight and other testing. The ASD cost team believes the Lockheed estimate was overly optimistic. Differences between Government and Lockheed cost estimates were found in practically all major areas—engineering, tooling, manufacturing, quality assurance, materials, subcontracts and general and administrative costs.

A statement was made to this subcommittee on November 13, 1968 to the effect that the cost of this program could increase by \$2 billion. I have been unable to validate this estimate, but I note that \$600 million of this increase (the difference between \$300 million in the original estimate and \$900 million subsequently submitted to your subcommittee in connection with the testimony) is in a category entitled "AFLC investment" which covers spare parts, ground equipment and similar items. You should be advised that the Air Force Logistics Command investment (estimated at \$777.2 million, rather than \$900 million) now includes two major categories of cost (replenishment spares and other support) which were not previously included as investment costs, but as operating costs because they were a function of aircraft utilization. Parenthetically, one of the reasons for the increase in these operating costs is that we have included a provision for increasing the wartime utilization rate on these aircraft. In any case, if these items are included in the present estimated investment cost of the C-5A program for comparison with the original cost estimate, they should also be included in the original estimate. Otherwise, you are comparing apples with oranges.

The fourth series of questions pertains to the legality and desirability of applying the repricing formula in the C-5A contract.

We consider that this repricing formula can be exercised in accordance with legal requirements, and is desirable.

There was a valid reason for this provision. The C-5A contract was the first Total Package contract and exposed the contractor to three new risks of major proportions:

1. The first such risk was a commitment to the technical performance, delivery schedule and price of operational production airplanes *prior* to the start of engineering development. As indicated earlier, on conventional sequentially procured systems, such commitment was made only after substantial completion of development, and even then, usually on only one year's production run at a time. Further, the C-5A commitment is enforced by a new Correction of Deficiencies clause which is much more strict in assuring compliance with performance requirements than is the normally-used Inspection Clause.

2. The second such risk involved responsibility for total system performance, i.e., the operation in the air of the integrated aircraft, including engines. Previ-

ously, the responsibility for integration problems, e.g., at the interface of the airframe and the engines, was largely assumed by the Government because of the difficulty of allocating responsibility for degraded performance between different components of the integrated system.

3. The third such risk was a commitment of extreme length (i.e., 6½ years from contract go-ahead and 7 years from submission of firm proposals). Normally, the commitment involves between 1½ and 3 years.

Additionally, the terms of the contract were established in extremely stiff competition; and consequently the competitors "reached" with respect to performance, delivery schedule, and price.

In view of these risks, and of the uncertainties attendant upon the development of any major new system, the C-5A contract was purposely structured to provide protection, for both the Government and the contractor, against unanticipated contingencies arising out of this first use of the Total Package concept. For example, there is an economic escalation clause, under which the contractor is protected against abnormal increases and the Government is protected against abnormal decreases in the cost of materials and labor (as indicated earlier, about \$500 million of the cost increase for 120 C-5A5s is due to escalation in the economy). There are other clauses covering specific foreseeable risks such as changes in the law. But it was also recognized that there are unknown risks, technical and otherwise, which being unknown are difficult to provide for contractually. I should point out that in the absence of protective provisions, all the competitors would have had to include in their proposed prices some margin to cover these contingencies at a price increase; and then these contingencies might not have occurred, in which case the Government would have been paying something for nothing.

Thus, both the Government and the contractor recognized the need for protection against unknown risks such as those which actually materialized and greatly increased the costs of the C-5A. And it was to this need that the C-5A price adjustment formula was addressed. Thus, the contract provided that if the actual cost of the 53 airplanes of Run A exceeded their target cost by more than 30%, an upward price adjustment would be made. It also provided that if the actual cost of those 53 airplanes was below the target cost by more than 10%, a downward price adjustment would be made.

The adjustment was not intended to turn a loss into a profit nor even to eliminate a loss. It was designed only to prevent corporate disaster by reducing catastrophic losses to manageable proportions or, on the other hand, if costs were substantially below target to reduce excessive profits by providing a refund to the Government.

This repricing clause was in the proposed contract to which all the competitors bid; and their bids assumed that, if consummated, the resulting contract would be honored. Therefore, adhering to this clause is desirable in the interest of preserving the integrity, not only of this contract, but of the relationship between the Government and industry.

In our view, the only objection to the repricing formula is that in theory it contains the possibility of a reverse cost incentive under certain conditions which may exist in the future. This, of course, bears on the question of legality, in particular the prohibition against cost-plus-a-percentage-of-cost contracting.

The conditions which might create a reverse cost incentive do not exist now, nor will they exist, at the earliest, until such time as we decide to authorize expenditures on airplanes beyond the 4th squadron. If at any time in the future there is a possibility that a reverse cost incentive might arise, I assure you that the repricing formula will be used, in modified form if necessary, in accordance with the statutes and regulations proscribing cost-plus-a-percentage-of-cost contracting and otherwise in the best interests of the Government and the taxpaying public.

To be perfectly clear on this matter of price adjustment, the Government is not altering in any way the pricing formula set forth in the original contract, which was entered into in competition. We are simply invoking the pricing provisions of the contract in accordance with its terms.

5. The fifth series of questions pertains to other contracts which contain similar repricing formulas.

There are two other current contracts that contain option price adjustment formulas tied to production options. These contracts are for the AGM-69A Short Range Attack Missile (SRAM), and the AGM-65A air-to-ground missile (Maverick). However, the application of these repricing formulas differs somewhat from the C-5A formula, and from each other.

In the SRAM contract, the repricing formula does not adjust the contractually specified prices of the first production options. Follow-on production option prices are subject to adjustment, with actual costs of the first production runs providing the basis for the adjustments. The formula is not applicable unless actual costs of the initial production options exceed 130% of target cost or are less than 90% of target cost.

A projected increase above the SRAM contract target cost was first identified in March 1968, and an overrun in the cost to the Government of \$55 to \$60 million is currently projected in the development portion of this program. This overrun does not form a basis for applying the adjustment formula. Nevertheless, the program has been, and is, under continuous review to insure that the operational requirement is still cost effective in light of the increased cost.

In the Maverick contract, the repricing formula provides for upward repricing if the actual cost of the first two production runs exceeds target cost by more than 25%, and for downward repricing if the actual cost is lower than target cost by more than 10%.

There is no actual or projected cost overrun on the Maverick program at this time.

I would now like to return to the C-5A program and to Total Package procurement, and to conclude this statement. While we are disappointed with the increased costs on the C-5A, I am convinced, weighing all factors and considering the problems with which it has been faced, that it is an outstanding program. We are probably in a better posture on the C-5A than we have ever been on any other weapon system of comparable difficulty at the same point in time of the development/production cycle. Comparing this airplane's actual performance with the contractor's proposed performance and with his contractual commitments, both of which it is expected to exceed, our analysis indicates that the results are far better on the C-5A than on any other system ever procured by the Air Force. Comparing C-5A cost growth (25% above our original adjusted estimate excluding escalation and 10% including it), with the much greater increases on other systems, particularly if we consider the unanticipated adverse external factors on this program, we are satisfied that the method of procurement used on the C-5A has effected great improvement in the cost area.

In the overall, I am persuaded that Total Package procurement applied to systems which are not subject to rapidly changing technology or military requirements, operates to achieve better technical performance and lower costs than any other procurement technique yet devised, and that it is so operating in the case of the C-5A.

I will be glad to try to answer any questions you might have.

TOTAL ESTIMATED COSTS OF C-5A

Chairman PROXMIRE. Will you answer that question on what is involved here in the cost?

Mr. CHARLES. I will try to find that right now. I will give you what I can give you now, and if you want more I will have to provide it for the record. The estimated cost, flyaway costs, that is, including the engines, of the—

Chairman PROXMIRE. And the spares.

Mr. CHARLES. No, no spares. Flyaway, no spares.

Chairman PROXMIRE. Why are not the spares included? That is a cost the taxpayers have to pay and Congress has to fund.

Mr. CHARLES. That is right. I can give you that. I do not happen to have it here.

Chairman PROXMIRE. Can you give us an estimate on that?

Mr. CHARLES. No, I would rather not. I would rather be accurate.

Chairman PROXMIRE. Well, you see, this is the problem we ran into before. One of the big differences, the big difference, the only difference, as a matter of fact, you can reconcile this if you have this one and Mr. Fitzgerald, is that he included the spares and you did not.

Mr. CHARLES. As I testified earlier, previously spares were not included in investment costs, but were included in operating costs. They are in an entirely different category now. They are included in investment costs, so you end up comparing apples and oranges. I would be delighted—

Chairman PROXMIRE. You compare apples with apples and oranges with oranges providing you included them in both estimates.

Mr. CHARLES. That is right.

Chairman PROXMIRE. I cannot understand why you cannot give us this. You know more about this program, more than any other living man, according to everybody I have talked to. It is your program. It is your total operation, and I cannot understand how you cannot give us that figure.

Mr. CHARLES. On a \$4½ billion program, it is rather difficult to know all the details, regardless of how much time you spend on it. I will be glad to provide it for the record.

Chairman PROXMIRE. All right.

Mr. CHARLES. I will have to provide it for the record. I can give you the flyaway costs if you want it, excluding spares.

Chairman PROXMIRE. I would like to have the whole thing in the record together. I think that is the only way you can get a proper picture. You have to buy them both. It is like saying we will give you the cost without the engine, you know.

Mr. CHARLES. I agree with that.

Chairman PROXMIRE. We have to have it.

(The following was subsequently supplied by Secretary Charles:)

Following is the Air Force estimate of the acquisition cost of 120 C-5A's:

	<i>Millions</i>
Lockheed-Georgia Co., 115 aircraft.....	\$3,169
General Electric Co. engines for 115 aircraft.....	754
Run C-5 aircraft and engines.....	91
Air Force adds (includes Government-furnished aerospace equipment, engineering change orders, aerospace ground equipment (base and depot), 1st destination transportation, etc.).....	334
Total	4,348

Following is the Air Force estimate for spares and support for 120 aircraft:

Initial spares (fiscal years 1967-72 procurement).....	\$483
Replenishment spares (fiscal years 1968-74 procurement) ¹	189
Support (fiscal years 1968-74 procurement) (aircraft modification, spares modification, common aerospace ground equipment and spares there-fore) ¹	106
Total	778

¹ Previously considered an operating cost and not included in program acquisition cost estimates.

BUY-IN BIDDING

Chairman PROXMIRE. In the official Air Force Guidebook, May 1966, explaining the Total Package procurement the following quotation is found, and I quote:

Thus the history of defense procurement was replete with cost overruns, less than promised performance which were at least in part the result of intentional buy-in bidding, and this has been the case even in the situation where there has been no substantial increase in the then state of the art.

Doesn't this quotation really tell what happened with the C-5A?

Mr. CHARLES. I do not think we can ever wholly prevent buy-in bidding. But let me say this; the buy-in bidding that will occur in the Total Package contract and under the C-5A contract is much—

Chairman PROXMIRE. We have your buy-in bidding—

Mr. CHARLES. Wait a minute, is much less, much less than the type of buy-in bidding that goes on under conventional contracts where there is no penalty whatsoever for doing so. I won't say whatsoever, they can lose a little money on the development contract.

C-5A COST EXPERIENCE

Chairman PROXMIRE. Well, the guidebook also says that the total packaging should produce lower costs on the first production units.

Can you truthfully say this has been the result in the C-5A experience?

Mr. CHARLES. I think it has. It is too early to tell you, but I think it has.

Chairman PROXMIRE. It is awfully high, much higher than the original estimate.

Mr. CHARLES. Right. But you have got to ask that question that I started off by asking; namely, "Compared to what?" Had this been on a conventional—

Chairman PROXMIRE. You see, what strikes us—

Mr. CHARLES. Let me finish. Had this been on a conventional contract, I predict the costs would have been considerably higher.

Chairman PROXMIRE. How can you have lower costs and an overrun? Is the overrun standard, is it always an immense overrun?

Mr. CHARLES. The overrun, if you want to call it that, is in relation to a target cost set by the contractor in the competition. The fact that we have sharing of costs above the target indicates that there is a contemplation that they probably will exceed the target.

COMPETITION FOR C-5A CONTRACT

Chairman PROXMIRE. This you maintain was a competitive procurement?

Mr. CHARLES. It certainly was.

Chairman PROXMIRE. You had Boeing and Lockheed involved and others.

Mr. CHARLES. Let me read you something which I did not read earlier but I think it is pertinent.

Chairman PROXMIRE. Let me just say before you do that, the point I am trying to make is this is all the more shocking. You have a competitive procurement, you give it to a bidder on the basis of price to some extent, and then you have an overrun which is far above what his bid was. So the competition does not mean anything. You obviously bid in low if you know you are going to have it made up; isn't that right?

Mr. CHARLES. It does not mean everything. It means a great deal, however. It is a vast improvement over what it was.

Let me quote from an article—let me quote you from a Fortune magazine article in December 1965 on this very competition.

Chairman PROXMIRE. You have that in your statement?

Mr. CHARLES. Yes.

The competition for this contract was memorably exhaustive * * * the competitors * * * spent some \$60 million of their own funds, and committed more than 4,000 of the Nation's top engineers to the undertaking. They committed themselves to this gruelling exercise because they were aware that the stakes were appreciably greater than the (military) program itself. The winners could expect to get a corner on the commercial market for a plan that promises eventually to become a standard workhorse of the air transport business.

The point is that it was a genuine competition.

Chairman PROXMIRE. How low was the Lockheed bid?

Mr. CHARLES. Compared to others?

Chairman PROXMIRE. Yes.

Mr. CHARLES. I am not sure that I should reveal that, but I can tell you this, that—

Chairman PROXMIRE. Why can't it be revealed?

Mr. CHARLES. Well, this is company proprietary information. I will be glad to if Boeing and Douglas will authorize it.

Let me tell you this—

Chairman PROXMIRE. Why should they have to authorize it? Why can't it be disclosed?

Mr. CHARLES. Well, I do not know whether we ought to talk about company—

Chairman PROXMIRE. It is over now, you know; it is history, several years.

Mr. CHARLES. Yes, I agree, but I would like to get their authorization to do so.

Chairman PROXMIRE. Well, it is my understanding it was about \$300 million low.

Mr. CHARLES. I do not think it was that much.

Chairman PROXMIRE. But it was substantially lower.

Mr. CHARLES. Yes; it was. Well, it depends upon what you call substantial. I call that a lot of dollars, but in terms of percentages it may not be.

Chairman PROXMIRE. At any rate, here you have a situation where you gave it to somebody that was apparently less than \$300 million low, and now you have an overrun which is many times that, and it defeats the whole purpose and point of competition.

Mr. CHARLES. No, it does not. I think it does not. The financial results to the lower bidder will be harder on him than to the higher bidder.

Chairman PROXMIRE. Well, not if he is going to be able to make up on his subsequent production with the higher costs.

Mr. CHARLES. He does not make up all of it.

PRICE COMMITMENTS

Chairman PROXMIRE. Let me ask you, the Guidebook also states that one of the principal advantages of this contract is that it contains binding commitments on the price of the C-5A.

Do we really have binding commitments on the C-5A price if the contract is repriced for future production runs in order to take care of cost overruns in the initial production? Do we not lose one of the main advantages of the Total Packaging?

Mr. CHARLES. No, I think not.

Chairman PROXMIRE. I do not see how we can have binding commitments, on the one hand, on price and a repricing projection at the same time.

Mr. CHARLES. I do. It is a binding clause in the contract. Any contract adjustment is made pursuant to a formula to which the competitor bids. I see nothing nonbinding about it.

Chairman PROXMIRE. If their costs are higher, they are able to pick up the difference.

Mr. CHARLES. Some part of that. No, not the difference, not the difference. If you are under this impression, this is not correct.

Chairman PROXMIRE. I understand it is not the full difference, but they pick up a great deal of it.

Of course, this comes to the whole point that Admiral Rickover has made so very well. He made that in testimony before this committee which was just released today, as a matter of fact, that costs are extraordinarily hard to determine.

Mr. CHARLES. I thoroughly agree.

Chairman PROXMIRE. And it is especially hard when you do not have anything like uniform accounting principles. He has made that with great emphasis, and some of the leading figures in the accounting industry have agreed with that. It is very difficult when you have parallel production of commercial operations and military operations. It is awfully hard to know what these costs really are.

We do know, and we know very emphatically, that the Government, the taxpayer, is going to pay a whole of a lot more than was originally bid.

COST OVERRUNS IN OTHER PROGRAMS

It has been stated that the problem of cost overruns is not limited to the C-5A and the committee should look at cost increases in other areas. One of the most distinguished Members of the Senate said that recently in his home State, and I do not blame him for saying it, he is right. I certainly agree with that.

You yourself admit there is a cost-overflow problem. You mentioned the B-52, the Minuteman, the F-4 and the F-111.

Can you tell us now generally what the cost overruns or cost increases in each of these programs are? First, the B-52.

Mr. CHARLES. I do not have that here. I can try to provide it for the record. Now, this will be difficult.

Chairman PROXMIRE. Can you tell us on any of these Minuteman, the F-111, and the F-4?

Mr. CHARLES. I cannot.

Chairman PROXMIRE. Will you do it for the record?

Mr. CHARLES. Yes, I will try to do it.

(Secretary Charles later supplied the following material:)

It should be noted that in my prepared statement I did not cite the B-52, MINUTEMAN, F-4 or F-111 as examples of systems on which "overruns" had been experienced but rather as examples of major systems for which it is extremely difficult to obtain price competition. This statement was made in the context that effective price competition is necessary in the procurement of major systems if the several problems which had been identified in the publications which were referenced in the statement were to be overcome. "Total Package Procurement," which was first applied to the C-5 program, is an attempt to overcome some of these problems by obtaining meaningful competition. This is particularly

true with respect to production work which represents about 80% of total program costs.

Information on the cost overruns or cost increases on the B-52, MINUTEMAN, F-4 and F-111 systems which would permit a meaningful comparison with the experience on the C-5 is not readily available. In fact, because of the dissimilarity of these systems and the different ways in which their programs evolved, it is doubtful that useful information for comparison purposes could be developed.

The F-4 is a typical example to demonstrate the impracticality of making comparisons. In the first place, the F-4 originally was developed by the Navy. The original Air Force F-4 program, as envisaged in 1962, consisted of 714 F-4C's which the Air Force estimated would cost \$1,374.9 million. To this original program at different times were added the RF-4C, F-4D and F-4E models as changes and/or improvements in the basic aircraft. As a net result of all changes to date, we now have a program which contemplates the procurement of a total of 2,875 F-4 aircraft of all models for an estimated \$7,652.1 million. The growth in dollars is due to many things, such as improvements in configuration and weapons capability, increases in the total number of aircraft procured, variations in plant loading, and the effect of inflation.

Chairman PROXMIRE. I understand also there is a cost overrun problem in other programs where total packaging has been used. You mentioned the total overrun on the SRAM.

Mr. CHARLES. That is right.

Chairman PROXMIRE. Can you tell us what these overruns are likely to be?

Mr. CHARLES. In the development area it is estimated that the Government's portion of the cost overrun will be \$55-\$60 million.

Chairman PROXMIRE. \$55 to \$60 million?

Mr. CHARLES. Yes.

Chairman PROXMIRE. According to my information the original contract price for R.D.T. & E. was \$143 million, but the December 1968 estimate was \$359 million. Can you confirm that?

Mr. CHARLES. That is on SRAM?

Chairman PROXMIRE. Correct.

Mr. CHARLES. I cannot confirm it but I will be glad to provide it for the record.

(The following was subsequently submitted by Secretary Charles:)

The current target price for the SRAM R&D contract is \$143 million. On January 20, 1969, the Boeing Company submitted a cost proposal for the changes that have been authorized for the SRAM R&D contract. The Air Force is currently evaluating this proposal as the first step in negotiating with the contractor on the contract price change. Until those negotiations are complete, disclosure of any Air Force estimates is premature and could prejudice the Government's position in its efforts to obtain the best price in negotiations with the contractor.

Chairman PROXMIRE. In the Mark II Avionics program, the original contract price for R.D.T. & E. for the first production run was supposed to be \$145 million. The current estimate is \$360 million. Can you verify that?

Mr. CHARLES. I cannot verify the figures offhand, but I will be glad to provide that also.

(Secretary Charles later supplied the following:)

This will confirm that the original proposed target price of the RDT&E and production was about \$145 million. During negotiations the Air Force included additional requirements which resulted in a target cost of \$196 million which represented the maximum amount that the government had been able to trace as arising from government responsible changes. Any target costs above this amount must be substantiated by the contractor in the form of a technical and

cost trace to the satisfaction of the government. It is possible that the cost may go as high as \$360 million.

Chairman PROXMIRE. The Mark XVII program had an original contract price of about \$40 million. The latest estimate, before the program was canceled because it would not work, is \$100 million. Can you verify that figure?

Mr. CHARLES. I will be glad to do that for the record.
(Information promised appears below:)

It should be noted that this program was not cancelled because it would not work. Subsequent to a re-evaluation of the total re-entry vehicle (RV) program, it was decided to terminate the MARK 17 before additional R&D or heavy production costs were incurred while expanding or continuing the effort on the RV systems. The initial target cost for RDT&E was \$36.4 million, and the estimated cost to completion at the time the contract was terminated was \$70.2 million.

Chairman PROXMIRE. Can you provide the committee with more detailed cost data and other information on these programs in addition to giving us the verification or contradiction of the figures you have given, in other words, an explanation?

Mr. CHARLES. Let me know exactly what you want on those and I will be glad to get it.

Chairman PROXMIRE. All right.

FLYAWAY COSTS FOR C-5A AIRPLANES

It would be helpful if you could give us the flyaway costs for the 23 planes. We would like to have that if you can give it to us. Perhaps you can have the colonel work on that while I ask the other questions.

Mr. CHARLES. I can give you that.

Chairman PROXMIRE. All right.

Mr. CHARLES. Flyaway costs?

Chairman PROXMIRE. Yes, sir.

Mr. CHARLES. On the—

Chairman PROXMIRE. C-5A.

Mr. CHARLES. C-5A, fourth squadron, 23 airplanes, is estimated to be \$23.5 million.

Chairman PROXMIRE. How much?

Mr. CHARLES. \$23.5 million apiece.

Chairman PROXMIRE. \$23.5 million apiece.

Mr. CHARLES. Yes.

Chairman PROXMIRE. I was going to say, now we are talking—

Mr. CHARLES. \$541 million for the 23 airplanes.

Chairman PROXMIRE. What was flyaway—

Mr. CHARLES. That is just the costs.

Chairman PROXMIRE. What is flyaway for the first 58?

Mr. CHARLES. I do not have that with me.

Chairman PROXMIRE. Can you give us that for the record?

Mr. CHARLES. Yes.

(Subsequent submission by Secretary Charles follows:)

The gross unit flyaway cost to the Government of the first 53 C-5A aircraft (Production Run A), excluding non-recurring costs, is estimated to be \$28.5 million. Including non-recurring costs of \$268 million, the unit flyaway cost is estimated at \$33.5 million. Five R&D aircraft for which flyaway costs are not applicable are not included.

CONTRACTOR RISK

Chairman PROXMIRE. In your statement you say you do not want to impose too much risk on industry.

What are the real risks for the very large defense contractors, real risks?

Mr. CHARLES. Well, I think they have been rather small up until recently. In 1961, for example, in the Air Force, 46 percent of our contracts were cost plus fixed fee. Today they are about 6 percent. In 1961, the percentage of awards that were made competitively was 17 percent. Today, that is, fiscal year 1968—it is 29 percent. I think we are increasing those risks materially.

Chairman PROXMIRE. When you say competitively, you are talking about negotiated competition as well as—

Mr. CHARLES. No.

Chairman PROXMIRE. You mean advertised, publicly advertised?

Mr. CHARLES. No, I am not talking about advertised. I am talking about what is termed “negotiated competition.”

But take a look at the C-5A. There was no negotiation there. We asked the contractors to bid to a definitive contract, a definitive contract including all these terms we are talking about today, and they did bid.

Chairman PROXMIRE. Let me ask you what record is there of losses on defense contracts from large contractors?

Mr. CHARLES. There have been losses.

Chairman PROXMIRE. Can you cite any?

Mr. CHARLES. I cannot offhand. I will try to get some.

Chairman PROXMIRE. You are the fellow who wrote the book, as they say. If you cannot cite them, I do not think they can be many conspicuous losses.

Mr. CHARLES. I think there have been conspicuous losses.

Chairman PROXMIRE. Can you name one company, one big defense contractor?

Mr. CHARLES. I would rather be accurate on this.

Chairman PROXMIRE. I am not asking for the figure, but just the name.

Mr. CHARLES. I would rather be accurate.

(Secretary Charles later supplied the following:)

An example of a conspicuous loss by a defense contractor is that of the Norden Division of United Aircraft Corporation on contracts for an integrated display system for the F-111D aircraft. Norden has a \$6.6 and a \$15.9 million production contract. In accordance with information furnished by United Aircraft, losses, both actual and prospective, on the two contracts total approximately \$30 million. In addition, we wish to point out that the Renegotiation Board, in its annual report for FY 1968, showed 676 contractors (out of a total of 4,027) with renegotiable sales of \$3.5 billion and losses of \$215 million.

BUY-IN, GET WELL FORMULA

Chairman PROXMIRE. Does total packaging discourage the buy-in, get well formula for military procurement? It seems in these days it would encourage it.

Mr. CHARLES. It discourages it.

Chairman PROXMIRE. Why?

Mr. CHARLES. In my opinion, there would be a greater buy-in on a conventional basis.

Chairman PROXMIRE. But you do say you are disappointed in the cost experience of the C-5A. Why?

Mr. CHARLES. I was hoping it would be lower.

Chairman PROXMIRE. Of course.

Mr. CHARLES. Who doesn't?

Chairman PROXMIRE. Won't you expand on that a little bit, Mr. Secretary.

Mr. CHARLES. Yes.

Chairman PROXMIRE. Why were you disappointed?

Mr. CHARLES. We estimated, as I said, that the 120 airplanes, after making these adjustments I described, would be about \$3.95 billion, just under \$4 billion. They are going to be over that. I am disappointed. So are you, so is the American taxpayer, so is Lockheed.

Chairman PROXMIRE. You say you are disappointed, but a lot of this is just beyond anybody's control. For example, you concentrate on inflation, and I certainly want to get into that element.

Mr. CHARLES. I do not say it is beyond anyone's control. What I do say is this: I think we have the strongest possible motivation built into the contract, and I do not know how you can do more than that.

INFLATION FACTOR

Chairman PROXMIRE. You have built into the contract an inflation factor; do you not?

Mr. CHARLES. Yes, we have.

Chairman PROXMIRE. Was that inflation factor—how far off was that inflation factor that you built into the contract?

Mr. CHARLES. I may have to correct this, but it is my memory that what we built in there was a band of 2 percent below and 2 percent above an extrapolation of actual inflation in the 5 years, I believe it was 1955, 1954 to 1959. We extended that line forward and we provided that anything outside the band would be taken care of separately, outside the band.

Chairman PROXMIRE. All right.

Now, since 1959, according to the President's Economic Report, 1959 to 1969, the Wholesale Price Index shows all commodities up 9 percent. This is, Wholesale Price Index, "Materials and components for manufacturing" up 7 percent. This is in a period, as I say, of 10 years, 9 to 10 years—10 years.

"Consumer durable goods" up 4 percent, and "Relevant industrial commodities," "Fuels and related products," up 3 percent; "Chemicals and allied products" down 2 percent; "Metals and metal products" up 11 percent; "Machinery and equipment" up 14 percent; "Transportation equipment" up 4 percent.

Now, in this case, this \$500 million increase, which you say was caused by inflation, provided for a much greater degree of inflation, especially when you recognize that you already have an inflation factor based on the increase in the price level up to 1964?

Mr. CHARLES. No. It was based on an extrapolation of late 1950 figures, you see. It was later than that, 1959, yes.

Chairman PROXMIRE. At any rate, there is a great discrepancy.

Mr. CHARLES. Yes, there is; and this is the point I was trying to make earlier. The aerospace industry has been infinitely more affected by inflation than the rest of the economy.

Chairman PROXMIRE. And Government procurement, defense procurement, is the reason for it; is it not?

Mr. CHARLES. Now, wait a minute, wait a minute.

Chairman PROXMIRE. It is the biggest reason for it.

Mr. CHARLES. It is one of the reasons for it. There is a tremendous boom in the commercial air transport market; a tremendous boom.

Chairman PROXMIRE. But I mean methods of procurement.

Mr. CHARLES. Are responsible for it?

Chairman PROXMIRE. The widely recognized fact that the Government will pay whatever it takes.

Mr. CHARLES. I would have to disagree. I do not think that is the reason. I think we have been a lot tougher in the last 5, 6 or 7 years than we ever were before.

Chairman PROXMIRE. There again, compared to what?

Mr. CHARLES. Yes, compared to what. I agree.

I would like to point out some figures on this economy. Aerospace output as a whole grew 6 percent annually from 1960 to 1963. From 1964 to 1967, however, the annual rate of increase more than quadrupled; that is, it was 25 percent.

Backlogs of firm business within the total aerospace industry followed the same dramatic pattern, \$15 billion in 1964; \$30 billion, almost \$31 billion, at the end of 1967.

The aircraft industry backlog alone multiplied 2.6 times from 1964 to 1967, and there was a 331-percent increase for commercial business, and private planes led the way.

Chairman PROXMIRE. Now, Admiral Rickover has testified about this and about the enormous jump in prices in military contracts in the past few years, and he thinks it is because of this very faulty system of procurement.

He, with great emphasis, feels that way, that we just are not doing an aggressive and effective job of determining costs.

NONCOMPETITIVE PROCUREMENT COSTS HIGHER

We had Mr. Buesking, until recently one of your top procurement officers, as well as Mr. Fitzgerald, I believe Mr. Fitzgerald testified to this effect; I know Mr. Buesking did, and I am sure Admiral Rickover did, that the noncompetitive procurement costs, and by noncompetitive I mean all that is not advertised competitive, are 30 to 40 percent higher than competitive, than procurement on a competitive basis.

Is this your conclusion; would you agree or disagree with that?

Mr. CHARLES. It is my positive conclusion, and this is the whole idea behind the whole package procurement, that competition produces better products at lower costs. Now, whether it means a 30-percent increase or not that is hard to say.

You may remember that Secretary McNamara estimated that when you get something in competition as opposed to sole source, the improvement is 25 percent. I believe the GAO concluded that the percentage is even higher than that. These are necessarily estimates. I

do not know what the actual improvement would be. I am satisfied it is substantial, and I am all for it.

ARE MORE THAN 58 C-5A PLANES NECESSARY?

Chairman PROXMIRE. Is it not true that Secretary Brown has stated the Air Force does not have to have this run B, that other alternatives could be pursued?

Mr. CHARLES. Secretary Brown stated what?

Chairman PROXMIRE. You did not have to have a second run. The 58 planes were enough.

Mr. CHARLES. I cannot recall his saying that.

Chairman PROXMIRE. Well, I have a letter, a memorandum for the record, Department of the Air Force, signed by H. Brown. His name is Harold Brown, and he signs it H. Brown. He says:

The following are the conclusions of the meeting held on the above subject on October 15, 1968. In the directions to the SPO resulting therefrom, item B is the Air Force does not have to have run B. Other alternatives could be pursued.

Mr. CHARLES. Well, in the sense that we were looking at other alternatives at that time, and always do, I would agree with that statement. You do not have to have anything.

Chairman PROXMIRE. He puts this in the context of the situation. At any rate, this appears to be a decision which was a close one, not one that was an easy one to make.

DISCLOSURE OF COST OVERRUNS

Was there any effort on the part of the Air Force to conceal the cost overruns of the C-5A from the public?

Mr. CHARLES. I would have to say no.

Chairman PROXMIRE. Well, certainly in the case of Mr. Fitzgerald coming up and giving us the total picture, including the spares, you are—one—trying to prevent him from coming; two—changing his testimony; and three—apparently prepared to discipline him for his actions.

Mr. CHARLES. Those are your statements, not mine.

Chairman PROXMIRE. They certainly are.

Isn't it true that the Air Force testified in March before the House Appropriations Committee there was no overrun?

Mr. CHARLES. No; it is not true.

Chairman PROXMIRE. That is my understanding. The staff informs me of that. If that is not true, it is the first time the staff has been in error in this area, to my knowledge, as far as the C-5A is concerned.

You say you have been unable to validate the \$2 billion estimate. Have you discussed that with Mr. Fitzgerald?

Mr. CHARLES. No, I have not.

Chairman PROXMIRE. You cannot validate it, however, even including spares?

Mr. CHARLES. Even including spares.

Chairman PROXMIRE. Even including spares.

Mr. CHARLES. I would like to look at the figures.

"CATASTROPHIC" LOSSES

Chairman PROXMIRE. How do you define catastrophic losses?

Mr. CHARLES. That is a tough one to answer. I do not know what is a catastrophe loss.

Chairman PROXMIRE. Have you seen a loss that has occurred to any—you use that in your statement.

Mr. CHARLES. I know.

Chairman PROXMIRE. But you do not know how to define it?

Mr. CHARLES. It is a general statement. A catastrophic loss in—

Chairman PROXMIRE. As you used it in your statement, do you know of it ever having occurred to a major contractor?

Mr. CHARLES. Not on Government work. But I do—

Chairman PROXMIRE. This is something which has never occurred so far on Government work, to the best of your knowledge?

Mr. CHARLES. Catastrophic loss, no. I cannot think of any offhand.

PENTAGON'S COOPERATION WITH GAO INVESTIGATION

Chairman PROXMIRE. In his letter to me, Secretary Clifford assured me of the Pentagon's cooperation with the GAO C-5A investigation.

Do you feel you have fully cooperated with the GAO in view of the testimony you heard earlier?

Mr. CHARLES. Yes, I do.

Chairman PROXMIRE. Your refusal to give the GAO the information that they requested—

Mr. CHARLES. What information are you referring to, estimated costs?

Chairman PROXMIRE. Yes.

Mr. CHARLES. This is a tough one, Mr. Chairman. We think we are protecting the Government when we do not reveal our estimates of costs in connection with a negotiation, and if we reveal the contractor's estimated costs, we feel we ought to reveal our own. I think there is no argument between GAO and us on this.

Chairman PROXMIRE. But at the time GAO asked this, is it not true that the Air Force has told Lockheed that Lockheed knew what your estimates were and you knew Lockheed's estimates?

Mr. CHARLES. Not to my knowledge.

Chairman PROXMIRE. That has been the information I received.

Mrs. Griffiths?

Representative GRIFFITHS. Lockheed is going to be protected completely. It is not a question of the Government's doing something. You do not reveal a contractor's bid to protect him, not from the Government, but from his fellow contractors.

POSSIBLE REVERSE INCENTIVE

Mr. CHARLES. Let me try to clarify this point.

The whole subject in this context is academic. The reason for considering negotiation in November and December and January, for that matter, was that we were concerned with this possible reverse cost incentive in the repricing formula, and at that time we were under the impression that the only way we could avoid the reverse incentive was to establish an estimated cost on run B, and then to provide an

incentive for getting under that cost and a penalty for exceeding it.

We found in exploring this matter thoroughly that no reverse cost incentive is present until at least the fifth squadron. Thus, we were able to use the original contract formula under which the repricing is dependent, not on estimated costs, but on auditable actual costs.

Therefore, at that point, which was just several days ago, we found it was not necessary to deal with any negotiation in connection with the fourth squadron.

Chairman PROXMIRE. Why isn't there an incentive for Lockheed or any other corporation to keep their initial costs as high as they possibly can get away with?

Mr. CHARLES. They would lose money.

Chairman PROXMIRE. Sure they would lose money if their costs are actually legitimate. I am not saying they are dishonest. If you are in business, if you make your costs as high as you can under the circumstances, especially when you have parallel operations and costs are often difficult to determine.

Mr. CHARLES. Mr. Chairman, for every dollar Lockheed spends today they lose 30 cents, and I do not see any incentive to spend money.

Chairman PROXMIRE. I am not saying they would go out and hire a man to come in and do a make-work job. They would not do that, of course.

What I am saying is they will put every bit of costs they possibly can on this contract and make it as big as possible, not only because they get paid, if the auditors permit it, but also on future runs they are in a stronger position.

Mr. CHARLES. In the sense that they would be able to allocate costs incorrectly on the portion of the base in the formula which increases the ceiling, this is true. But that is what auditors are for, to see they do not do that, and I know of nothing to indicate that they are doing it.

Representative GRIFFITHS. How would you know they have not?

Mr. CHARLES. How do I know they have not?

Representative GRIFFITHS. How do you know the original bid—well, I will tell you in general, any contractor puts about 33½ per cent on top of costs for profit.

Mr. CHARLES. I will thoroughly agree with you, Mrs. Griffiths, that in a noncomp—

Representative GRIFFITHS. So I do not think Lockheed is losing a penny.

Mr. CHARLES. Wait. In a noncompetitive situation I would agree that profit is likely to be higher.

CONTRACTOR TAKING RISK

Representative GRIFFITHS. In competitive situations; you look them over—they are doing it that way.

I would like to ask you, you are assuming that the contractor is taking this huge risk. Maybe you do not know, but I do know some contractors that went broke on R. & D.'s. They did take a risk. They were not reimbursed.

Now, on this one, you have leveled out that risk. I understand what you are doing and why you are doing it. The real truth is that the person who has the R. & D. generally has the production line contract,

but it was not always true in the past. A lot of people had R. & D.'s that did not afterward have a production line contract. They took some real risks.

But in this one, you are helping pick up those risks. You are limiting the risk they are taking, are you not?

Mr. CHARLES. We purposely limited the risk they were taking.

Representative GRIFFITHS. Right.

But then you run the contract for 6 years. What real proof do you have that anybody has yet lost any money on any of these contracts?

Mr. CHARLES. I do not have any proof.

Representative GRIFFITHS. When do we anticipate knowing whether they—

Mr. CHARLES. We will know when the contract is over.

Representative GRIFFITHS. Have any of these contracts yet completed their course?

Mr. CHARLES. Of course not.

Representative GRIFFITHS. How long will it be before the first one completes its course?

Mr. CHARLES. Before the first what?

Representative GRIFFITHS. Contract.

Mr. CHARLES. Which contract?

Representative GRIFFITHS. The contract total—

Mr. CHARLES. This is probably the first one. The 120th airplane would be delivered in late 1972.

OTHER TOTAL PACKAGE PROCUREMENT CONTRACTS

Representative GRIFFITHS. How many such contracts are there in the Air Force?

Mr. CHARLES. I do not know offhand.

Representative GRIFFITHS. Will you supply that for the record along with the total estimated costs for all of them?

Mr. CHARLES. I would be glad to.

Representative GRIFFITHS. When will these be completed?

Mr. CHARLES. I would be glad to do that.

Representative GRIFFITHS. I believe it would be interesting to know whether or not contractors are going broke, or whether the Government is losing money, or whatever the situation is, because I do not share your enthusiasm for the contract at all.

I understand what you have done, but I do not think these contractors are taking a risk. I think you have helped them level off the risks.

Mr. CHARLES. You are entitled to your opinion.

Representative GRIFFITHS. It is a pretty good opinion, too.

Chairman PROXMIRE. It certainly is.

(Secretary Charles subsequently supplied the following:)

Other contracts awarded under the Total Package procurement concept, together with target or fixed prices and scheduled completion dates, cover the following programs:

AGM-65A Air-to-Air Missile (MAVERICK): Target price for RDT&E is \$94.5 million, and RDT&E (not including sustaining engineering) completion is scheduled for [deleted]. Target prices of production options A, B & C are \$63.9 million, \$67.7 million, and \$91.7 respectively. If all options are exercised as scheduled, final completion should be [deleted]. Target prices of production options include containers, launchers, training equipment, aerospace ground

equipment, data, and long lead time items. Spares will be procured under an existing contractual formula.

AGM-69 Air-to-Ground Missile (SRAM): Target price for RDT&E is \$143.0 million and RDT&E completion is scheduled on or before [deleted]. Target price of production options A-2 and A-3 is \$93.5 million and \$103.8 million, respectively, not including spares. The cost of spares will be negotiated concurrently with the production options when those options are exercised. The Air Force is currently negotiating with the contractor on authorized development changes that will change the RDT&E and production contract target prices. Estimated completion date is [deleted].

MINUTEMAN Improved Third Stage Motor: Current target price for RDT&E and production, including initial spares for site activation, is \$68.0 million; estimated completion date is [deleted].

C-9A Aeromedical Evacuation Aircraft: Prices under two fixed price contracts total \$45.7 million for aircraft now on contract including related logistic support (this figure does not include additional aircraft for which options have been provided in the contract in the event of future requirements); completion of aircraft now under contract is scheduled for January 1970.

C-10A Light Transport Aircraft: Prices under two fixed price contracts total \$5.39 million for aircraft now on contract including related Logistic Support (this figure does not include additional aircraft for which options have been provided in the contract in the event of future requirements); completion of aircraft now under contract is scheduled for November 1969.

407L Tactical Air Control System: Separate contracts which include initial spares are as follows:

Communications Complex: Target price is \$12.3 million; scheduled completion date is June 1970.

Lightweight Radar: Target price is \$18.5 million; scheduled completion date is June 1969.

Telephone Switchboard: Target price is \$15.8 million; scheduled completion date is August 1970.

Tactical Operations Center: Target price is \$79.5 million; scheduled completion date is November 1970.

Direct Air Support Center: Fixed price in the amount of \$11.3 million; scheduled completion date is August 1970.

Communication Centrals: Fixed price in the amount of \$28.7 million; scheduled completion date is February 1972.

Control Tower: Target price is \$7.3 million; scheduled completion date is November 1969.

DELAYS IN TRANSMITTAL OF C-5A COST DATA

Chairman PROXMIRE. How do you explain the long delays in providing this committee and GAO with requested data on the C-5A? The GAO got its cost estimate from the Air Force only 2 days ago. They were requested in November. We received the Fitzgerald inserts yesterday. They were prepared in November.

Mr. CHARLES. I thought we had discussed that.

Chairman PROXMIRE. Well, I would like to have you tell us. We did not discuss this GAO thing. We mentioned the Fitzgerald situation.

Mr. CHARLES. Well, as I said—

Chairman PROXMIRE. Why did it take so long?

Mr. CHARLES. We gave the GAO all of the actual cost information that was requested, and we told them that we were in negotiations, which we were, as I just indicated, and that on the estimated costs we would prefer not to have it revealed.

They declined to accept it on that basis. As soon as we found out the negotiations were not necessary—and this was the only reason for holding up the estimated costs—we promptly released them. There has been no holdup.

Chairman PROXMIRE. And you felt that if the GAO had received this information that you would only give it to them on the basis of its not being made public?

Mr. CHARLES. That is correct.

Chairman PROXMIRE. You discussed the prospect of giving it to the Congress on a restricted basis?

Mr. CHARLES. No; that was not discussed.

Chairman PROXMIRE. Would you have done this?

Mr. CHARLES. If we could be assured that it would not get back to the other side to the negotiations, certainly.

Chairman PROXMIRE. How can you be assured of that?

Mr. CHARLES. That is a good question.

Chairman PROXMIRE. In other words, you would not have.

Mr. CHARLES. Probably.

Chairman PROXMIRE. OK. Well, you are an honest man. Thank you so much, Mr. Charles. You are a very fine witness and a very able man, obviously; and with what I would consider to be a poor case, I think you have done a splendid job.

Mr. CHARLES. Thank you, sir.

Chairman PROXMIRE. Our last witness is Mr. A. E. Fitzgerald. Mr. Fitzgerald is Deputy for Management Systems, Office of the Assistant Secretary of the Air Force.

We are delighted to have you here, Mr. Fitzgerald, and very grateful to you for the courage and the convictions that have enabled you to give this information at obviously very great risk.

STATEMENT OF A. E. FITZGERALD, DEPUTY FOR MANAGEMENT SYSTEMS, OFFICE OF THE ASSISTANT SECRETARY OF THE AIR FORCE

Mr. FITZGERALD. Thank you very much, Mr. Chairman.

I am pleased to be here.

I do not have a statement. I hasten to add that one was not requested this time, but I am available to answer your questions.

JOB DESCRIPTION

Chairman PROXMIRE. All right.

Please explain exactly what your job duties and responsibilities are in the Air Force.

Mr. FITZGERALD. If I may, I would like to read from my official job description. I am the Deputy for Management Systems in the Office of the Secretary of the Air Force, Assistant Secretary for the Air Force for Financial Management.

I will read you the summary of my duties and responsibilities:

The incumbent of this position will serve as Deputy to the Assistant Secretary of the Air Force for Financial Management with the responsibility for development of improved management controls and broader use of statistical analysis within the Air Force.

Specifically, I have concentrated in my somewhat over 3 years in the Air Force on improved management controls for the major acquisition programs.

Translated, "major acquisition programs" mean the F-111, the C-5A, Minuteman, SRAM, and the like.

Chairman PROXMIRE. Specifically, what responsibilities did you have with regard to the C-5A?

Mr. FITZGERALD. Specifically on the C-5A in an operational sense, none, but I have been responsible for the development of the management controls used on the C-5A as well as other programs.

In addition, as I testified on the 13th of November, I have been on a steering committee which is directing a financial review of the C-5A program.

COMPTROLLER'S OFFICE AND PROCUREMENT

Chairman PROXMIRE. How are the functions of the Comptroller's office supposed to relate to procurement?

Mr. FITZGERALD. Primarily, the Comptroller, or more properly in my case, the Assistant Secretary for Financial Management's office, is responsible for the development of all improved management controls. They are responsible for quantitative reporting; that is, reporting with numbers. This would include the management summary-type information which tells us the status of the various programs that are underway and includes the procurement programs. It is not limited to it, of course.

Procurement is one of the functions that is reported on and presumably controlled in part through financial devices.

CIVIL SERVICE STATUS

Chairman PROXMIRE. I understand since your testimony before the subcommittee in November you have lost your career tenure; is this true?

Mr. FITZGERALD. Mr. Chairman, certainly I do not have it today. Mr. Nelson's recitation of the actions is essentially correct. I would say, in terms of the two personnel actions, that it is exactly correct. I did receive an official notice that I had been converted to career tenure on the 6th of September. This notice was apparently prepared by a computer, as testified previously. It was signed in a box labeled "for the appointing officer" by the chief of the civilian personnel division.

Chairman PROXMIRE. Not by a computer?

Mr. FITZGERALD. No, sir.

Chairman PROXMIRE. It was signed by the chief of the personnel division?

Mr. FITZGERALD. In the Headquarters of the Air Force.

Chairman PROXMIRE. So to say this was a mistake of the computer is not a comprehensive answer.

Mr. FITZGERALD. Certainly not a complete one. I have no ground for questioning that it was in part a computer error.

Chairman PROXMIRE. So you have no reason for suspecting it was not a computer error?

Mr. FITZGERALD. I have no way to know one way or another, except—

Chairman PROXMIRE. That is exceptional.

Mr. FITZGERALD (continuing). Except what you heard from Mr. Nelson.

Chairman PROXMIRE. I think that raises some very distinct questions. It has also been asserted that it would have been impossible to legally convert your job to career status; is this true, in your opinion?

Mr. FITZGERALD. The experts differ on this, and I really do not propose to get into a discussion with them, but I believe the section that you quoted from Dr. Brown's letter illustrates one expert's point of view.

From the handout, I can read again. Mr. Lang says:

There is a third possibility which could result in Mr. Fitzgerald departure. This action is not recommended since it is rather underhanded, and would probably not be approved by the Civil Service Commission even though it is legally and procedurally possible. The Air Force could request conversion of this position to the career service, utilizing competitive procedures, and consider all the eligibles from the Executive inventory and an outside search. Using this competitive procedure, Mr. Fitzgerald might or might not be selected. If not, displacement action would follow.

Now, presumably, to my untutored mind, I could have been the beneficiary as well as the victim of such a process. So I would have to conclude that it is possible, and I believe that Mr. Nelson indicated that it would be under the conditions he stated.

Chairman PROXMIRE. I do not know how anybody could come to any other conclusion. They say it was, they say it was an alternative. They say it might be a little underhanded if the purpose was to get rid of you or have you leave the service, but they obviously say it was, these are their words, "legally possible."

Mr. FITZGERALD. Yes.

Chairman PROXMIRE. Have you had any indications, subtle or otherwise, that you have been disciplined in any way because of your earlier testimony?

Mr. FITZGERALD. Well, there has been no adverse personnel action, and I have been told there would be none for that purpose.

The only result I have seen outwardly is a general cooling of relationships.

Chairman PROXMIRE. Well, that is, I suppose, a dignified understatement.

PROTECTION OF AIR FORCE OFFICIALS

I received an explanation from Secretary Brown of the program which he claims encourages and protects Government officials who are critical of the procurement practices.

You testified, I thought, very ably and persuasively, that the Air Force did make an attempt to protect those who spoke out against contractor abuses or saying that procurement was too expensive or too extravagant or wasteful or incompetent.

What is your evaluation now of this program, how much encouragement or protection have you received?

Mr. FITZGERALD. Well, as yet I have not been discharged and, as I mentioned earlier, have not been the recipient of any adverse personnel actions.

I think one thing differs in my case. The incident that I have been involved in has involved public disclosure. I do not think he said anything about protecting employees who made unauthorized public disclosures.

Chairman PROXMIRE. Was this unauthorized public disclosure?

Mr. FITZGERALD. In a sense, Mr. Chairman, it was. I had not cleared the remarks I made on the 13th of November with the Secretary.

Chairman PROXMIRE. This was in response to a question, a specific question, we asked you, we asked you that question.

Mr. FITZGERALD. That is correct, and I would answer it again.

Chairman PROXMIRE. In response to a question, you answered it. And on November 13 I specifically asked the Air Force liaison officer publicly, on the record, if you were free to answer the committee's questions. He said, on the record, you were. So you did not disclose unauthorized information. You were officially, publicly, on the record, authorized to make these disclosures.

Mr. FITZGERALD. That is correct.

Chairman PROXMIRE. I presume that your position—their position may be that you should not have made any answer except that you could not disclose it.

Mr. FITZGERALD. That is correct. My judgment has been questioned on this point.

Chairman PROXMIRE. Does this mean you can disclose as long as it is in the family and then you are protected?

Mr. FITZGERALD. I am not sure, but certainly disclosure of information such as I disclosed without clearance with the Air Force Headquarters is not desired. It is not a desirable thing to have happen.

Chairman PROXMIRE. In your opinion, is it fair to say that you now have a service personnel problem as a result of your having testified before this subcommittee in November?

Mr. FITZGERALD. As a result of my testimony and the ensuing publicity, there is no doubt that I have a personnel problem.

DELAY IN TRANSMITTAL OF C-5A COST DATA

Chairman PROXMIRE. In the November hearing you were asked to provide additional cost data on the C-5A and other information to supplement your testimony. Up through yesterday the committee had still not received the inserts.

Can you explain what took so long?

Mr. FITZGERALD. No, sir; I cannot entirely. I think I might account for some of the actions—try to explain them. Incidentally, while I am at it, I would like to set straight the record on the cost figures, and also apologize to you and the committee and the Congress for this delay. I am very sorry that it happened.

As I say, I will try to account for it. In the instance of the cost figures I think all I can do is try to set the record straight. I will read for the record the estimates which were familiar to me at the time I testified in November, and these are not Fitzgerald's estimates, these estimates were supplied through regular Air Force channels to my office and other offices in the Secretariat.

C-5A COST ESTIMATES

I will read you the submission which I originally forwarded 2 or 3 days after my testimony. The explanation of the figures is as follows:

These figures are the result of independent estimates performed by Air Force Systems Command and the Air Staff cost estimating specialists. They represent probable costs at completion and are based on a number of assumptions which are subject to change.

Among these is the assumption that the contractor cost performance on similar programs and early stages of the C-5A program provide valid bases for extrapolation. Additional cost information on the C-5A, coupled with identification of

management actions affecting cost performance, may result in significant changes to these estimates.

I have two estimates for each category. The two estimates are April 1965 and October 1968.

For R.D.T. & E. plus run A, April 1965 estimate, \$2,187 million; October 1968, \$2,554 million.

The footnote on the latter estimate reads:

Does not include estimated overceiling costs.

Run B for April 1965, \$891 million. October 1968, \$1,808 million. A footnote on this:

Reflects current option prices adjusted by applying repricing formula where the Air Force run A estimates.

Air Force Logistics Command investment, principally spares, as Mr. Charles has testified, \$293 million for April of 1965; \$968 million for October of 1968.

The total cost estimate figures for April 1965, \$3,371 million. For October 1968, \$5,338 million.

The explanation for the overall estimate reads as follows:

"The estimates shown above"—

Chairman PROXMIRE. Let me interrupt at this point to see if I can understand. You are talking about 120 aircraft?

Mr. FITZGERALD. Yes, sir; I certainly am. Well, I am sorry. I am talking about run A plus run B.

Chairman PROXMIRE. Run A plus run B.

Mr. FITZGERALD. Which officially would be 115 aircraft. The inclusion of the five additional aircraft to round out the authorized 120 is a bit ambiguous. I would have to furnish for the record how they fit into the overall program estimates.

The figures that were furnished to me are specifically labeled run A, run B. The total of the two add up to 115 aircraft. As I say, the additional five aircraft—

Chairman PROXMIRE. This is the total cost. We have been discussing flyaway costs and total costs. This would include spares, both in the earlier and later years alike.

Mr. FITZGERALD. Yes. There is the following note, and was all along, regarding the estimates. I will read that:

The estimates shown above differ from previous estimates released to the press in that Air Force Logistics Command investment estimates not previously released are included. In addition to increased price levels for AFLC investment items, the latest estimate reflects changes in the scope of the AFLC portion of the program.

The AFLC items, as I said, are principally spares. This was the estimate that was current at the time. The earlier explanations did not denote any change in the scope of the spares program.

Chairman PROXMIRE. As I recall, these are pretty much the same estimates that you made on November 13, are they not?

Mr. FITZGERALD. These were the estimates that I had in mind, Mr. Chairman, when I confirmed your estimate of an approximate \$2 billion increase in the program.

Chairman PROXMIRE. \$2 billion?

Mr. FITZGERALD. \$2 billion.

Chairman PROXMIRE. And is it your understanding that the main difference was that the Air Force estimate did not include spares and yours does?

Mr. FITZGERALD. The release to the press did not include spares. My estimate is an Air Force estimate, an official estimate——

Chairman PROXMIRE. Yes, but, as I understand it——

Mr. FITZGERALD. Released to the press.

Chairman PROXMIRE. They gave a different figure that day on November 13.

Mr. FITZGERALD. Yes. The release to the press did not include the estimate of the spares in either of the two figures. The possible reasons for the long delay in submitting my inserts for the record, in general, I was told that I had no right to volunteer the documents, and that may indeed be the case. I have not examined my rights in this regard, but this was the general basis that was used to delay submission, and——

DISCLOSURE OF C-5A COST ESTIMATES

Chairman PROXMIRE. Does it make any sense that Congress would not have the right to ask this question and find out? There is nothing classified about this. There is nothing that is going to help any foreign country, there is nothing that is going to make, escalate the costs of negotiations in this.

Is there any conceivable reason why Congress should not have this information?

Mr. FITZGERALD. None that has been explained to me, Mr. Chairman.

Chairman PROXMIRE. I have not heard any explanation from Secretary Charles or anybody else, Secretary Clifford or Secretary Brown or the people we have written.

As I understand it, there is no reason in the world why the Congress and the public should not have had this information, and they have made no attempt to tell us we should not have it. So I cannot understand why this should not be disclosed.

Was it ever marked "restricted?" Were you ever told you should not release it?

Mr. FITZGERALD. No, sir.

Chairman PROXMIRE. So that the common-sense reaction for a man in your position was that if you are asked by a congressional committee about this you will tell them?

WEIGHTED GUIDELINES

Mr. FITZGERALD. As a matter of fact, I think the weighted guidelines proposal is quite a well-done document. You will recall this is one of the things you asked me to furnish for the record.

Chairman PROXMIRE. Yes.

Mr. FITZGERALD. And has, as I understand it, been distributed to industrial contractors. So I would quite agree, I see no reason that the committee and the Congress, and the public, for that matter, should not have the document.

There are some rather frank statements in the document which I

think might distress some individuals in the Pentagon. I will read one, and I quote:

One clear conclusion from these comparisons and considerations of the motivation and effect of a cost based profit structure is that our current system penalizes cost reduction and equipment organization.

Now, this sort of thing taken out of context might be considered damaging. However, in the context of the entire document where they are explaining the need to recognize investment as a part of the basis for calculating profit, I think it is backed up very well. Overall, as I said before, the document is excellent, in my view.

I do not know of the effect on profits of the specific proposals they are advancing, but the rationale behind it, I think, is very good.

Other than that, again, Mr. Chairman, I must just apologize for the long delay.

TRANSMITTAL OF SUPPLEMENTAL TESTIMONY OF A. E. FITZGERALD

Chairman PROXMIRE. Well, now, let me ask: on Christmas Eve the committee did receive a package of inserts labeled "Inserts for the record of Testimony of A. E. Fitzgerald."

The committee staff contacted you about these materials. What was your reaction to them?

Mr. FITZGERALD. Well, I was quite surprised that the submission had been forwarded without contacting me. I was not even aware that they had been forwarded, and to this day I do not know who forwarded the submission. I do not believe there was a cover letter along with it. At least, when the committee staff—

Chairman PROXMIRE. So you did not know about it, you did not have a chance to agree or disagree. It was forwarded without your knowledge.

Mr. FITZGERALD. Mr. Chairman, I had disagreed with some of the proposals to remove some of the inserts from the package.

Chairman PROXMIRE. That was omitted from that Christmas Eve package?

Mr. FITZGERALD. The weighted guidelines proposals were omitted, and the "Lessons Learned" paper by Mr. Gordon Rule of the Navy was omitted, and the cost estimates were changed.

Chairman PROXMIRE. Yesterday, January 15, the committee received another package labeled, "Insert for the record, Testimony of A. E. Fitzgerald."

Do you agree that this should be made a part of your November testimony?

Mr. FITZGERALD. I had a very few minutes to look at it before the hearing. Assuming the weighted guidelines proposal and Mr. Rule's paper are complete, and I have no reason to believe they are not, and I believe you had already received the information on the formula repricing which had been submitted previously, I would stand by the submission.

Let me qualify this. I will stand by the submission, assuming that I can get clarification of the cover letter—

Chairman PROXMIRE. Are you in a position—

Mr. FITZGERALD (continuing). Which states the cost estimates "purport" to be in support of Mr. Fitzgerald's testimony, or something

to that effect. This implies to me that I had generated the figures myself to support my previous testimony. If I cannot get that impression corrected, I would like to substitute instead the figures which I read into the record just now.

C-5A COST ESTIMATES

Chairman PROXMIRE. All right.

Well now, there is in these estimates and inserts, there is an estimate of C-5A costs to Government, and you have given your own estimate into the record just now.

Mr. FITZGERALD. This was the Air Force estimate I was familiar with at the time—

Chairman PROXMIRE. I should say you have read into the record this Air Force estimate.

Mr. FITZGERALD. Yes; sir.

Chairman PROXMIRE. Will you tell the committee where these estimates you put in the record differ from Secretary Charles' estimates. Are there any differences?

Mr. FITZGERALD. Yes; there obviously are some.

Chairman PROXMIRE. What are they?

Mr. FITZGERALD. I have not reviewed Secretary Charles' statement. I have not had a chance to go through it and look at just what the bases for his estimates are.

But I believe fundamentally that Secretary Charles used the beginning estimate of 1964, if I recall correctly, and the estimate that I was aware of at the time of the previous hearings, and still have for comparative purposes, are dated April 1965.

Chairman PROXMIRE. How about the differences on the final, the latest figures we have on the costs, 1968?

Mr. FITZGERALD. I do not remember exactly what he had on his. Mine are roughly \$4.4 billion for the airplanes and engines, and \$968 million for the spares. I believe Secretary Charles said that the spare estimates, the current spares estimate was somewhat less than the figure I have here.

Chairman PROXMIRE. Can you comment on any part of the testimony we have had here today on the C-5A, the costs and the overruns?

Mr. FITZGERALD. Well, I would like to avoid a position in which I am in conflict with Secretary Charles' testimony.

As I said before, I have not had an opportunity to review it, and I have not been consulted on the testimony. I do not know what is in it except to hear his reading and a very quick look that I had at it immediately before the hearings.

I think there was one important fact that I would like to bring out. That is the fact that we have had the November estimates since this past spring, essentially the same estimates, from the Systems Program Office. This is not quite as new as it would have appeared in the testimony that we have heard. There has been a long period of refinement and reexamination of this estimate during which time it has been closely held.

Chairman PROXMIRE. How about the figures that were given to us on the 23 additional planes, that they are going ahead to order?

As I understand it, we were told that the flyway costs would be \$23 million per plane. Do you have any estimate on the total cost, including spares or anything of the kind?

Mr. FITZGERALD. I do not, sir, not with me in any event.

I undoubtedly do in my files.

Chairman PROXMIRE. Are you in any position to make any comment on that \$23 million estimate?

Mr. FITZGERALD. Not really, without knowing the basis for it.

I am not sure, for example, whether it was cost or price, and whether it was an average figure or an end figure or just what.

I would prefer not to because I do not really know the basis for it.

Chairman PROXMIRE. I should have had you up here asking—helping me ask those questions.

When did you first detect that there would be a \$2 billion overrun?

Mr. FITZGERALD. Well, I would like to begin my answer by qualifying that statement. I am not convinced that we must incur these—

Chairman PROXMIRE. You go ahead. If we go ahead—

Mr. FITZGERALD. Or even if we do go ahead, that we must necessarily spend the money that has been estimated.

I think it is entirely possible that the airplanes can be built for substantially less money.

But to answer your question—

Chairman PROXMIRE. That is a very interesting observation. How could this possibly occur—by going to another contractor?

Mr. FITZGERALD. Well, that is a possibility. I suppose it could be done. I was thinking more along the lines of catalytic actions that I discussed in my previous testimony.

The Air Force, I think, has done an excellent job in this regard on the technical aspects of the airplanes. They avoided participating in decisions in the contractor's operation, and have avoided directing him to do things, but they have brought very forcefully to the contractor management's attention shortcomings and suspected shortcomings in his technical conduct of the program, and I think it has had good effect.

I do not know, and we won't know for sure until we have more—

Chairman PROXMIRE. What can they do? You talk about catalytic action to reduce the cost—what can they do?

Mr. FITZGERALD. I think that sort of action can be escalated to the points that the Navy did last year in their dealings with Pratt & Whitney. They gave it great publicity, the fact that inefficiencies had been identified in the contractor operations, and I think public exposure did a great deal to motivate Pratt & Whitney to make improvements.

Chairman PROXMIRE. I think you are doing that today, and I think you did it on November 13. You focused a lot of attention on that and, perhaps, that should help.

Is there anything else that can be done?

Mr. FITZGERALD. I certainly hope some good will come of it. Yes, sir. I think there is, and to illustrate this, I would like to go back and answer your question a little more directly and perhaps develop an alternative.

RECOGNITION OF C-5A COST OVERRUNS

Really, this alternative is one that we have been attempting to employ. You asked when we first knew of the overruns. In connection with my duties to develop improved management controls, we had been attempting to develop some improved procedures for the major programs back in the early days of the C-5A.

The C-5A, as I mentioned, was one of the prime applications. We received cost reports from the contractor on a monthly basis.

Along the summer of 1966 the cost reports began to show overruns on the portions of the work done so far. The whole thrust of our reporting system is to break the huge contracts into pieces so that we will know as one segment is completed, whether we have spent more or less money than we planned and not have to wait until 1974 to determine how we are coming out on the contract.

The cost overruns began to grow and grow in the reports received from Lockheed, to the point that in November of 1966 I made a trip to Lockheed with a team from the Air Staff and the Air Force Systems Command. We reviewed the program cost data and found that certain key segments of the program we've overrun 100 percent at that point.

The contractor denied that there was an overrun in any large sense, saying primarily that these were isolated examples. But we went away, and 3 weeks later came back and the contractor began to disclose the overrun.

This increase was disclosed on the second visit 3 weeks after the first, and was approximately \$212 million, covering primarily overruns already experienced to that point in time, amounting to approximately 40 percent overrun overall in those areas that were critical to the program.

To illustrate the feeling of the team which visited Lockheed at that time, I would like to read an excerpt from a report written by one of my colleagues regarding the second visit and the briefing that we received, and I quote:

The second briefing was very much like seeing a rerun of an old movie. The plot still has drama and suspense, the script was excellent, the acting superb, but the outcome will be the same as it was the first, second or tenth time it was shown. The contract costs will be exceeded.

He goes on to say:

The cost control system operated by the contractor does not produce meaningful status in cost to complete estimates. It does not relate physical progress to planned costs. It tracks expenditures against a budget plan. The provisions of the contract will not act as a brake on cost increases. In fact, the contract almost guarantees increases. The coming cost increases will be more than justified, supported, rationalized and explained by the contractor. His position will be supported by the Air Force. The costs, whatever they are, will be duly entered into data banks to prove beyond any doubt that they are true costs. Who can argue that they should have or could have been different?

That is the end of the quote. I think this was an amazingly prophetic statement.

Chairman PROXMIRE. This is memorandum from a former colleague, I take it?

Mr. FITZGERALD. Yes.

Chairman PROXMIRE. I won't press you on the identification of it because obviously it is one of those outspoken statements that, as we see right now, does not always get the reward that it deserves.

INFORMATION OBSTACLES

As I understand it, you feel there are obstacles that prevent the Air Force from obtaining vital facts such as current cost figures, and this is an obstacle that not only applies to the C-5A program but is general.

Can you just give us a word on this—I only have a few more questions. The hour is very late—but I would appreciate your observation on that.

Mr. FITZGERALD. Yes, Mr. Chairman.

I think there are some very definite obstacles. We have had a very large and, I think, determined effort in the Air Force in the last few years, the last 5 years in particular, to gain greater insight into what things were costing us and where we stood on programs.

We have been very strongly resisted in this effort by, I think understandably, industry associations, primarily the Council of Defense and Space Industry Associations, known as CODSIA.

I should add quickly that I do not believe that all the contractors with whom we deal support this industry association view.

On the other hand, it is understandable why industrial contractors, particularly the very large ones, who seem to have a continuing assurance of new business, would oppose this sort of thing that we are doing.

Specifically, if we reveal overruns as they occur, that is if we reveal variances of actual from planned costs, and identify them positively at the time as overruns, it then later becomes impossible to attribute these increases or these overruns to subsequent contract change notices or some inexorable economic process beyond everyone's control.

We have also had considerable opposition within the Department of Defense from some of the functional elements. In particular, the procurement community and some segments of the research and engineering community. It has become quite clear as we have applied these systems that in addition to revealing contractor errors and shortcomings, we also frequently reveal the effects of poor decisions by procurement and by the research and engineering people.

So this is the sort of thing that is going to have to be decided at a top management level.

We are not going to have the functional people who are going to be controlled vote for this sort of control or this sort of visibility. I should quickly say that I see the two as separate.

DISCLOSURE OF COST OVERRUNS

Chairman PROXMIRE. Is there a special problem, disclosure on cost overruns? Why do you think there is this opposition to full disclosure of cost overruns? As I say, there is nothing classified about them.

Mr. FITZGERALD. No.

Chairman PROXMIRE. And it is something that does alert the Congress, as you pointed out very well; it is a catalytic agent. It means that it focuses attention on the part of the company on the problems.

Mr. FITZGERALD. Right, exactly.

Chairman PROXMIRE. And they have their own pride and their own concern which this would, I think, stimulate them. Why is it not a good thing to get these cost overruns right out in front right away?

Mr. FITZGERALD. I think it is a good thing.

Chairman PROXMIRE. Why is there opposition in the Air Force to do it? There is, and this remarkable action of discipline against you —

Mr. FITZGERALD. Sir?

Chairman PROXMIRE. And this remarkable action of discipline apparently against you.

Mr. FITZGERALD. As I just described it, I think there are obvious disadvantages to the contractor, at least in the short term, and we have a number of people in the Government and in the Department of Defense, who sincerely believe that the contractors are correct in their stand on this.

Chairman PROXMIRE. It is a matter of protecting the contractor in your view?

Mr. FITZGERALD. I believe so to a large extent, although, as I mentioned before, there is a degree of protection of one's own function.

Chairman PROXMIRE. And sometimes there is political pressure from the contractor to bring, to see that these overruns are not disclosed or there could be.

Mr. FITZGERALD. Well, I do not know —

Chairman PROXMIRE. Pressure through Members of Congress, pressure through other people in the administration who are very influential to keep this kind of thing quiet because it is a reflection upon some company.

Mr. FITZGERALD. It might even hurt the stock price. There are certainly pressures to prevent the institution of procedures which would routinely disclose overruns. We have a great deal of trouble in this area and, as I said before, much of it stems from industry associations.

Chairman PROXMIRE. In your opinion, has the Air Force been able to stay abreast of costs on the C-5A program? What has the Air Force done in the absence of meaningful reports from the contractors?

Mr. FITZGERALD. Mr. Chairman, we have made a very strong effort, I believe, to stay on top of this.

Chairman PROXMIRE. You made the effort. Have they been able to do it?

Mr. FITZGERALD. Not very well. Well, let me amend that and tell you specifically what we have been able to do.

As I mentioned, or as my colleague mentioned in his report, prophetic report, written back in 1966, there were shortcomings in the system used by the contractor to report the status of the program to us. I am sorry to report that the situation deteriorated, it did not get better.

The Air Force attempted to compensate for this poor situation by sending cost teams into the plant and putting together from our own resources internal reports which tracked the status of the program.

Unfortunately, we have had difficulties with these reports. Early this year the internal reports began showing either no overrun at all or overruns far less than were generally acknowledged to exist.

In September of this past year I requested audit assistance to find out why our internal reports appeared to be erroneous. The auditors had a great deal of trouble getting definitive answers but, generally speaking, we were led to believe that the reports had been changed by direction from higher headquarters. We were unable to determine where that was.

Chairman PROXMIRE. What do you mean by higher headquarters? Do you mean in the Air Force or Lockheed management?

Mr. FITZGERALD. Well, let me—in the Government. Let me read you the statement on one of the reports which differed from generally acknowledge figures. This is regarding cost team estimates made in the spring of last year, I believe in March or April:

The resulting aeronautical System Division cost team estimates for Lockheed are not shown in this report per direction of higher Headquarters.

That is all it says.

I reluctantly agreed to the suspension of the audit pending the outcome of the financial review which, I believe, Mr. Nitze or Mr. Clifford informed you of, and in which I was involved.

I have recently requested that the audit review be reinstated.

CAUSES OF C-5A COST OVERRUNS

Chairman PROXMIRE. Secretary Charles has testified that the cost overruns in the C-5A had not been the result of inefficiency. Can you comment on the question of whether inefficiency on the part of the contractor is involved in this program?

Mr. FITZGERALD. We always suspect that this is the cause, at least one of the causes. However, in the case of the C-5A, I would have to say that we cannot say for sure. One of the things that we were attempting to determine in our financial review was the answer to this question.

We have a long list of unanswered questions which we intend to continue to pursue. This is one of them. We simply do not know exactly where we stand on the program at the moment, that is, on work done so far, unless there is information that has not been made available to me.

Chairman PROXMIRE. You do not know?

Mr. FITZGERALD. I do not know.

Chairman PROXMIRE. In spite of that, the Air Force has made the decision to go ahead and buy another 23 planes at a cost of \$23 million per plane, flyaway costs, and probably another \$5, \$10 million for spares per plane.

Mr. FITZGERALD. I am not aware of any of the details of the decision. I got the news the same way you did, Mr. Chairman, from the newspapers or press releases.

Chairman PROXMIRE. Yes. I just got it in this press release.

Mr. FITZGERALD. Yes.

AIR FORCE C-5A TESTIMONY OF MARCH 5, 1968

Chairman PROXMIRE. Let me say before you leave that earlier we had testimony from Secretary Charles that the Air Force did not tell the House Appropriations Committee last spring that the C-5A program was not having overruns. I would like to put in the record the statement of the Honorable Alexander Flax, Assistant Secretary of the Air Force, Research and Development, dated March 5, 1968,

in which he says the following, and this will take me less than a minute:

Mr. SIKES (referring to the C-5A). Is it within the original cost estimate?

Dr. FLAX. We believe it is within the range between the target and ceiling costs at the moment. Of course, there is still a great deal of work to be done by the contractor. We will not know the final return until that is all completed. According to the best estimate of our people in the program office the contractor is in the range where it should be between the target and the ceiling costs.

So it looks as if Congress was told last March 5 that this was not exceeding the costs, and it seems to me that on the basis of this testimony that that was just an error.

Mr. FITZGERALD. I have no idea of what Dr. Felix based his testimony on, but it is conceivable that his information was derived from some of the erroneous internal reports. I do not know that for sure.

Chairman PROXMIRE. This program has been going on for how long at this point, since 1965 or 1964?

Mr. FITZGERALD. The total program or the overrun?

Chairman PROXMIRE. The total program.

Mr. FITZGERALD. Since 1965.

Chairman PROXMIRE. And on the date of March of 1968, only 10 months ago, they were unable—they told Congress that, to the best of their knowledge, and this is one of the top men in the Air Force, that there was not an overrun.

Mr. FITZGERALD. Well, I am certain, that to the best of his knowledge, he was testifying to the facts.

Chairman PROXMIRE. I am sure he was. I do not challenge Dr. Flax's honesty, one bit. What I am saying is that this is very poor control. It is just inconceivable to me that all these overruns could develop in the last 10 months.

Mr. FITZGERALD. Of course, they did not. The percentage overrun in 1966 was roughly the same as we are estimating right now. But the assumption—the hope—was that the contractor would, as the expression goes, "get well."

It is a matter of opinion whether he would or not. I happened to believe that he was not going to get well. I was one of many people who believed that. There were others who thought he would. I think it became generally acknowledged that there were financial difficulties and very large ones in the spring of this past year. But it was certainly apparent to me that the contractor was headed for a very, very serious overrun.

In 1966 he was exceeding segments of the program by more than 100 percent, and there was a consistent pattern of this.

Chairman PROXMIRE. 1966. So this was—

Mr. FITZGERALD. Yes, sir.

Chairman PROXMIRE (continuing). So this was at least a year, more than a year, before the Air Force told the Congress that there was no overrun.

Mr. FITZGERALD. Yes.

Chairman PROXMIRE. 1966 they were exceeding the costs by 100 percent?

Mr. FITZGERALD. Yes. I believe though, what Dr. Flax had in mind was the estimate at completion. I do not believe anyone asked him about current status and I am assuming what he was thinking, but the usual

thing is to quote estimates at completion rather than where the program stands at the moment.

Chairman PROXMIRE. Well, Mr. Fitzgerald, I want to say to you finally that you have been an excellent witness, and if there were a computer into which you could put courage and integrity, you certainly would be promoted rather than have your status in such serious and unfortunate jeopardy.

The Air Force can say, and the armed services can say, that their officials are free to speak any time and tell the Congress the facts as they see them. But it is going to be very hard for the public and the Congress to accept that if there is any further disciplinary action against you.

You have not only convinced this Senator that you are an honest man and a man of courage, but also that you are an extraordinarily able man, and you have a rare zeal, a desire to try to hold costs down. With such a zeal and desire you are willing to speak your mind under very difficult circumstances, and heaven knows we need people like that in the Defense Department at this time.

Thank you very, very much.

Mr. FITZGERALD. Thank you very much, Mr. Chairman. I am pleased to have the opportunity to appear here.

Chairman PROXMIRE. Thank you, Mr. Fitzgerald. The committee will stand adjourned.

(Whereupon, at 5:45 p.m., the Subcommittee on Economy in Government of the Joint Economic Committee adjourned.)

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