



REPORT TO THE CONGRESS



Application Of "Should Cost" Concepts In Reviews Of Contractors' Operations

B-159896

Department of Defense

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To the President of the Senate and the
Speaker of the House of Representatives

This is our report on application of "should cost" concepts in reviews of contractors' operations, Department of Defense. Our examination **was** made pursuant to the Budget and Accounting Act, 1921 (31 U.S.C. 53), and the Accounting and Auditing Act of 1950 (31 U.S.C. 67).

Copies of this report are being sent to the Director, Office of Management and Budget; the Secretary of Defense; and the Secretaries of the Army, **Navy**, and Air Force.

A handwritten signature in black ink, which appears to read "James B. Stacks", is positioned above the printed name.

Comptroller General
of the United States

D I G E S T

WHY THE REVIEW WAS MADE

In May 1969, the Subcommittee on Economy in Government, Joint Economic Committee, reporting on "The Economics of Military Procurement," expressed concern that the traditional method of pricing negotiated contracts--primarily on the basis of past or historical costs--did not protect the interests of the Government adequately.

The Subcommittee recommended that the General Accounting Office (GAO)

"study the feasibility of incorporating into its audit and review of contractor performance the should cost method of estimating contractor costs on the basis of industrial engineering and financial management principles."

The should-cost approach attempts to determine the amount that weapons systems or products ought to cost, given attainable efficiency and economy of operations.

In May 1970, GAO reported to the Congress that it appeared to be feasible to apply should-cost concepts in its reviews. GAO also stated that it would perform trial reviews of this type to obtain additional information concerning benefits that could be realized and problems that might be encountered.

This report presents GAO's findings and conclusions based on its trial applications of should-cost concepts.

FINDINGS AND CONCLUSIONS

On the basis of four trial reviews applying should-cost techniques, GAO has concluded that such reviews can be extremely beneficial and that it should make should-cost-type reviews in the future.

GAO found a number of areas at each of four contractor plants where increased management attention could result in lower costs to the Government. For example,

- improvements were needed in production planning and control,
- there was a need for increased competition in the procurement of material from subcontractors, and

Tear Sheet

--higher quality engineering talent was utilized than was required by the nature of the work being performed.

GAO brought the specific findings to the attention of appropriate contractor and agency officials and made suggestions for improvements. (See pp. 8 to 10 and 14 to 15.)

Although should-cost review techniques primarily are intended to find out how contractors' operations can be improved, they also lead to disclosures of areas where Government contracting or administration practices affect contract costs adversely. GAO noted instances of excessive packaging requirements, failure to consolidate purchasing, and excessive testing requirements. (See p. 14 and 15.)

The total savings which could accrue to the Government as a result of the GAO reviews and the resulting improvements in contractor and Government management practices cannot be determined readily because the effects on costs of certain of the suggestions could not be measured readily. In those instances where they could be determined, the savings amounted to almost \$6 million. (See p. 33.)

The military services have performed should-cost reviews in order to be in a better position to negotiate contract prices for major weapons systems. Recognizing that the negotiation of contract prices is the responsibility of the procuring agency, GAO believes that its reviews should not be conducted in a preaward environment.

Future GAO reviews therefore will attempt to evaluate how procuring agencies and contract administrators are discharging their responsibilities and to suggest ways in which contractors can reduce the costs to the Government. (See p. 21.)

Procuring agencies that perform should-cost reviews prior to the awards of major contracts are in a strategic position to obtain contractor cooperation and concurrence in changes needed. Application of should-cost concepts during preaward reviews enables Government contracting officers to negotiate from positions of strength because the comprehensive findings and observations of the review teams are available during negotiations. Since this type of information is available, the contracting officer can influence the contractor to adopt recommendations for improved operations. (See p. 21.)

Although GAO had some success in encouraging contractors to study and/or improve their operations, GAO could not be as effective as the procuring agencies in motivating the contractors. There was no obligation on the part of contractors to accept the suggestions of the GAO review teams, and in some instances no interest was shown in considering GAO proposals objectively. In other instances contractors took a positive attitude toward reducing the costs of future operations. (See p. 22.)

The success of future reviews of this type by GAO probably will depend almost entirely on the cooperation of contractors and on the extent to which the Department of Defense contracting officials apply GAO findings and recommendations during negotiations of contracts. (See p. 22.)

AGENCY AND CONTRACTOR COMMENTS

The Office of the Assistant Secretary of Defense (Installations and Logistics) advised GAO that the Department of Defense agencies concerned would look into the specific matters reported by GAO at the contractors' plants.

Pertinent contractor comments were:

- GAO should place greater emphasis on reviewing overall Government and contractor procurement systems rather than detailed costs.
- There should be some additional evaluation of cost benefits resulting from should-cost reviews versus the costs of accomplishment.
- Additional statutory authority for GAO may not be necessary.

GAO does place primary emphasis on evaluating procurement systems rather than detailed costs, and GAO reviews are so designed. GAO also applies criteria to ensure, insofar as possible, that the benefits resulting from should-cost reviews will be significant in relation to the costs of making the reviews.

MATTERS FOR CONSIDERATION BY THE CONGRESS

Should-cost reviews require examinations into many facets of contractors' operations and management. The present provisions of GAO's statutory authority to examine contractors' records are not broad enough to enable GAO to cover all of the matters which should be considered. The Congress therefore may wish to consider expanding GAO's statutory authority to enable GAO to make effective should-cost reviews on an independent basis.

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ABBREVIATIONS

DOD	Department of Defense
GAO	General Accounting Office

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--higher quality engineering talent was utilized than was required by the nature of the work being performed.

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MATTERS FOR CONSIDERATION BY THE CONGRESS

Should-cost reviews require examinations into many facets of contractors' operations and management. The present provisions of GAO's statutory authority to examine contractors' records are not broad enough to enable GAO to cover all of the matters which should be considered. The Congress therefore may wish to consider expanding GAO's statutory authority to enable GAO to make effective should-cost reviews on an independent basis.

CHAPTER 1

INTRODUCTION

At the request of the Subcommittee on Economy in Government, Joint Economic Committee, the General Accounting Office has studied the feasibility of applying should-cost concepts in reviews of contractor operations.

The should-cost approach attempts to determine the amount that weapons systems or products ought to cost, given attainable efficiency and economy of operation.

Emphasis, in this type of review, is placed on a study and evaluation of a contractor's system of managing and controlling costs and on the procedures instituted to provide surveillance of these activities and costs to achieve economy and efficiency. Should-cost reviews utilize the concepts employed by the Department of Defense (DOD) in price proposal reviews, including use of historical data, but place primary emphasis on ways and means of improving upon prior cost experience.

In our report to the Congress, entitled "Feasibility of Using 'Should Cost' Concepts in Government Procurement and Auditing" (B-159896, May 20, 1970), we stated that:

- It was feasible to apply should-cost concepts during the prenegotiation and/or the postnegotiation phase of the Government's procurement process.
- The greatest opportunity for the Government to benefit from the application of should-cost was through its use, on a selective basis, in preaward evaluations of contractors' price proposals.
- Government agencies should also provide a continuing capability to **perform**, on a selective basis, should-cost types of reviews after contracts were awarded.
- The degree of effectiveness that could be expected from should-cost reviews was dependent on the contractor's willingness to cooperate fully with the review team.

- GAO would perform trial should-cost reviews which would provide additional data relative to (1) the benefits that could be expected to result from should-cost reviews, (2) the problems which might be encountered in performance of such reviews, and (3) the size of programs or contractors and the types of contracts which should be selected for review.

This report presents the findings and conclusions resulting from our applications of should-cost concepts at four contractor locations.

SCOPE OF TRIAL APPLICATIONS

Four contractors were selected for our trial should-cost reviews. Because GAO lacks firm authority for access to much of the contractor data essential to the effective performance of a should-cost review, we were able to perform our reviews only at those contractors plants that voluntarily agreed to cooperate with us on a trial basis. To effectively evaluate the various contractor functions and perform this review on a timely basis, we selected contractor plants of medium size. The types of products produced by these contractors varied and their manufacturing operations ranged from mass production to job-order processing. In our selection process we also considered the types of programs that the contractors were involved in and the types of contracts that they had been awarded. In our review we included contractors operating under cost-type and incentive-type contracts as well as firm fixed-price contracts.

We did not attempt, at each location, to make a comprehensive review of all aspects of the contractors' management. Rather, we limited our reviews to those areas that appeared to warrant attention on the basis of previous Government reviews and other preliminary investigation. In general, our reviews included examinations into such areas as (1) the contractors' management of direct and indirect labor; (2) the effectiveness and adequacy of the contractors' systems for estimating labor hours and material costs; (3) the adequacy and usefulness of the contractors' systems for estimating, accumulating, and recording contract costs; and (4) the effects of Government procurement policies and practices on contractors' operations and efficiency.

In performing the should-cost reviews, our objectives were to (1) evaluate the efficiency and effectiveness of the contractor's operating practices, (2) examine into the reasonableness of costs, and (3) identify conditions which, in our opinion, either resulted in unnecessary costs or precluded the Government and contractor from establishing a reasonable price.

CHAPTER 2

RESULTS OF GAO TRIAL APPLICATIONS

OF SHOULD-COST CONCEPTS

Our trial reviews demonstrated that GAO could effectively apply should-cost concepts. We found that these reviews could be effective in identifying ways to reduce contract costs because they permitted a comprehensive evaluation of the efficiency and effectiveness of contractors' operations and DOD procurement and contract administration activities.

In general, we found a number of areas at each of four contractor plants in which increased management attention could result in lower costs to the Government. We noted, for example, that (1) improvements were needed in production planning and control, (2) increased competition was needed in the procurement of material from subcontractors, and (3) proposed engineering costs were not representative of the efforts required. Although should-cost review techniques were primarily intended to ascertain how contractors' operations could be improved, they also led to disclosures of aspects of Government contracting or administration practices that adversely affected contract costs. In this connection, we noted instances of excessive packaging requirements, failure to consolidate procurements, and excessive quality control procedures.

In our opinion, the problems disclosed in our trial reviews could have been identified and/or corrected by more effective procurement practices and contract administration. We therefore believe that one of the major benefits of future GAO should-cost-type reviews will be the identification of ways in which the overall Government procurement process can be improved.

The total savings which could accrue to the Government as a **result of our reviews cannot be determined readily** because the effects on costs of certain of our recommendations could not be quantified readily. In those instances

where savings could be measured, however, they amounted to almost \$6 million. These savings are summarized in appendix I.

Further details of our findings follow.

COMPREHENSIVE REVIEWS OF CONTRACTORS'
OPERATIONS CAN PROVIDE IDENTIFICATION
OF POTENTIAL SAVINGS

In the past, reviews of contractors' records were primarily financial in nature, with the objective of validating recorded historical costs. These costs then became the bases of estimated costs on future contracts. The emphasis in the should-cost approach, however, was to utilize the skills of engineers, mathematicians, and audit personnel to determine how costs could be reduced in the future.

GAO previously utilized selected should-cost concepts in functional reviews of contractor management and issued a number of reports pointing out the need for improvements. The current reviews, however, have indicated that a comprehensive analysis of many aspects of a contractor's operations can also be beneficial because the review team obtains a better understanding of the contractor's overall management policies and practices. The following are examples of some of our findings,

Savings attainable by the use of an effective
production planning and control system

A production planning and control system is supposed to achieve efficient performance by coordinating and guiding the physical activities of manufacturing a product. We found that one contractor's production control system was in need of improvement because

- the manufacturing schedule did not include provisions for all parts which were to be manufactured,
- manufacturing start and finish dates had not been established for parts included on the schedule,

price competition on the material purchases for follow-on contracts. This action could reduce costs on follow-on contracts by about \$150,000 each year.

Higher quality engineering talent
was utilized than was required
by the nature of the work being performed

The work of designing and developing a fully operational weapon system, along with the capability to produce it in production quantities, requires the efforts of highly skilled engineering and technical personnel. As a program reaches the production stage, the major functions of design, analysis, and testing are reduced, and the need for highly skilled engineers decreases,

At one location we found that engineering labor costs for a follow-on production contract were being proposed at hourly rates which included those for highly skilled engineers, even though the need for such engineering support had diminished and their skills were no longer required on a continuing basis. The contractor agreed that the hourly cost of engineering support was increasing as the effort changed from research and development to production. They stated that the reasons for the increased costs were three-fold: (1) need to have a few highly skilled engineers capable of responding to various technical requirements which might occur, (2) reduction in requirements for lesser skilled engineers, and (3) inflation. We estimated that the use of engineering talent, overhead included, which was no longer commensurate with the engineering effort required, could increase the 1970 production contract price by about \$99,000.

Opportunities to apply
economic-order-quantity techniques

The economic-order-quantity concept is designed to reduce total costs by balancing the costs to procure an item against the holding costs, such as investment and storage.

One contractor could have reduced its annual overall costs by between \$174,000 and \$297,000 if economic order quantities had been utilized. The fewer purchases which

would have resulted from the application of economic order quantities would have reduced costs substantially, while the increased holding costs of a larger inventory would have been relatively minor.

The contractor agreed with our conclusions and said that it would utilize economic-order-quantity techniques in the future.

During our reviews we observed other conditions which, we believed, had adversely affected the ability to control contract costs. We were not able to quantify the effect that these conditions would have on costs, but we believe that improvements will result in the negotiation of more reasonable contract prices. These improvements include:

- The need for better documentation and support for make-or-buy decisions.
- The need to make the material estimating systems more responsive to changes in make-or-buy decisions.
- The need to establish new systems or to refine existing systems to provide for the segregation of recurring and nonrecurring engineering and manufacturing costs.
- The need for more equitable distribution of general and administrative-type expenses between contractor divisions operating at the same location,
- The need to account for and control labor and material charges for end items that must be reworked because of defective material, workmanship, or engineering changes,
- The need for improvements in plant layouts to provide for (1) arrangement of machine tools in relationship to their operational sequence, (2) sufficient spacing of machines, and (3) a sufficient number of material-staging areas.
- The need for management systems which will measure labor efficiency and productivity.

- The need for establishing labor groupings and composite rates which are more representative of the task to be performed.
- The need for accurate recording of labor charges.
- The need for the accumulation of labor hours by part number and by production lots.
- The need for production labor standards to be inter-related with accounting records so that equivalent unit costs can be determined during the life of a contract.
- The need for updated and reliable labor hour standards.
- The need for information that shows in greater detail the composition of proposed overhead costs, including the additional costs which will be distributed to Government contracts as a result of decreasing production and excess plant capacity.
- The need for contractor and Government representatives to utilize learning-curve techniques in the preparation and evaluation of proposed labor hours.

IDENTIFICATION OF NEEDED IMPROVEMENTS IN AWARD AND ADMINISTRATION OF CONTRACTS

In commenting on our report on the feasibility of GAO applying should-cost concepts, DOD officials stated that the Armed Services Procurement Regulations and contract administration and audit manuals provide for the application of should-cost review techniques in the Government's preaward evaluation of contractor cost proposals and in the day-to-day monitoring of contractor activities. Those officials observed that, if all current policies were adhered to and if the cognizant audit and administrative organizations were fully effective, there would be no need for the type of reviews discussed in this report.

We agree that prescribed DOD policies provide for the application of should-cost concepts on a continuing basis. We believe, however, that the results of recently completed should-cost efforts by the Army and the Navy, as well as our reviews, demonstrate that the traditional Government preaward reviews of contractor proposals and the day-to-day functional audits and reviews of contractor management have not been fully effective.

Although a should-cost review is intended primarily to evaluate a contractor's operations, it also serves to objectively evaluate (1) the effect of Government procurement procedures on costs and contractor operations and (2) the adequacy and effectiveness of contract proposal and functional reviews performed by cognizant DOD audit and administrative activities. This ability to identify problem areas and to suggest corrective action is, in our opinion, another major benefit accruing from should-cost reviews.

The following are some examples of observations which, in our opinion, demonstrate that procurement and administrative policies can adversely affect contract costs and that should-cost reviews can be an invaluable tool with which to identify problem areas within the Government's procurement processes,

Savings obtainable through reduced packaging requirements for spare parts

A review of the packaging requirements for certain spare parts being produced at one contractor's plant revealed that, although the spare parts were being used for overhaul purposes in the continental United States, they were being packaged for indeterminate storage or overseas shipment. In mid-1967 the Government procuring officer notified the contractor and the cognizant administrative contracting officer to reduce the level of packaging. Due to a misinterpretation of the notification and subsequent directives relating to this subject, however, the packaging was not changed.

Contractor and cognizant Government procurement and administration officials agreed that the packaging level should be reduced for spare parts to be used in overhaul and that savings would result. Based on variances in quantities procured, changes in delivery schedules, and other factors, annual savings could range between \$200,000 and \$600,000.

Savings achievable in consolidating procurements based on cost-impact studies

One procurement activity could realize substantial savings if procurements were based on cost-impact studies to determine the economies of consolidating procurements at the time total requirements first become known. These savings are attributable to lower prices associated with volume orders, the availability of more favorable prices during a period of rising costs, and the related reduction in the contractor's administrative efforts. Although we could not readily measure the total effect of incremental ordering practices, we estimated that savings of about \$116,000 could have been realized under a current contract if three separate orders had been consolidated,

Contractor representatives agreed that savings could have been realized on the current contract had requirements been consolidated into a single order. Furthermore, we were advised that similar economies could have been realized on two earlier contracts where orders were placed in the

same piecemeal manner. Procuring office representatives advised us that consolidation of their requirements was not affected by funding limitations and that trade-offs between lead time and cost were not considered. We were advised that, as a result of a recent DOD review in this area, the total requirements for a single fiscal year would be procured on a test basis.

Use of more realistic acceptance-test procedures

The military specifications for an item being produced by one contractor required that all production items be acceptance tested under stringent sampling and test requirements until the production quality warranted less stringent testing.

We analyzed in detail the contractor's test procedures and the results of the inspection program. On the basis of this analysis, it appeared that more flexible requirements might be implemented. We discussed our findings with contractor and Government quality-assurance representatives and they acknowledged the validity of our observations. The following actions represent the initial steps taken by a joint Government-contractor task force established to review the problem.

- Full teardown inspection of one model has been changed from one in ten to one in twenty. For two other models, as well as a critical component used in all models, full teardown inspection has been changed from 100 percent to 10 percent.

- Other test requirements have generally been reduced from 100 percent to a 10-percent sample.

We estimate that, on the basis of recent production levels, the reduced level of testing could result in future annual savings of about \$1.1 million.

CHAPTER 3

SHOULD-COST REVIEWS

BY THE MILITARY SERVICES

Should-cost reviews have been and are currently being utilized by the three military departments as an aid in the negotiation of lower prices for major weapons systems. The results to date indicate that such reviews are an effective tool in identifying ways in which contractors can produce more efficiently and economically and therefore reduce contract costs.

On the basis of the reviews completed to date, it appears that the should-cost team approach has a significant advantage over the usual method of developing data for Government contract negotiators. The negotiation of a price for a major contract often involves the efforts of a number of different organizations, such as the Defense Contract Audit Agency, the Defense Contract Administration Service, and the procuring activity. It is frequently difficult to coordinate the organizations' diverse efforts so as to provide the Government contract negotiator with all the information needed at the proper time. The should-cost team, on the other hand, can ~~make~~ a coordinated and timely effort which enables the negotiator to discuss contract provisions with better data at his disposal.

Following are summaries of the results of major should-cost reviews that have been completed by the Departments of the Navy and the Army and a discussion of the future use of should-cost reviews in the DQD procurement process.

DEPARTMENT OF THE NAVY REVIEW OF PROPOSED COSTS OF ENGINES FOR THE F-111 AIRCRAFT

This review was conducted during an 11-month period in 1967 and 1968 by a team of highly skilled individuals selected from various DOD activities. The Navy concluded that such a review was necessary because the contractor's proposed costs for 2,053 aircraft engines appeared to be unreasonable.

The should-cost review indicated that savings substantially in excess of \$100 million could be realized out of total costs which the contractor originally estimated at about \$1.5 billion. Some of the areas in which potential savings were identified were:

1. Lack of adequate labor standards.
2. Inefficient plant layout.
3. Noncompetitive procurements from subcontractors.
4. Poor production scheduling and control.

Subsequent to the negotiation of the contract, the F-111 program was drastically reduced and the anticipated savings were not fully realized.

DEPARTMENT OF THE ARMY REVIEW
OF PROPOSED COSTS FOR HAWK MISSILES

In May 1970, Army officials estimated that utilization of should-cost concepts in the preaward review of a \$96 million proposal for the production of 600 HAWK missiles resulted in a substantial reduction in contract costs. Additional management improvements which the contractor will institute in the future may produce additional savings of about \$14 million.

As in the case of the review conducted by the Navy, a team of DOD personnel was assembled for a period of 2 months during 1969. The impetus for this effort was the significant increases in the production costs of HAWK missiles over a period of time.

Army officials believe that, in addition to identifying areas for increased contractor efficiency and economy similar to those disclosed by the Navy review, should-cost reviews:

- Provide the contracting officer with a negotiation objective well supported by facts.
- Result in much improved coordination and integration of previously fragmented prenegotiation activities.
- Help to identify and reward truly efficient producers.

CURRENT DOD POSITION ON FUTURE ROLE OF SHOULD-COST REVIEWS IN GOVERNMENT PROCUREMENT

Each of the military services has taken a somewhat different approach toward the future role of should-cost reviews. Following is a summary of military services' current applications and future plans,

Department of the Navy

The Navy is currently involved in its second should-cost review. This review is being performed at two potential, contractors and several selected subcontractors prior to the award of a production contract for MK-48 torpedos. The contractors have been involved in the development of competing torpedo designs and have been awarded prototype production contracts. One contractor will be selected for production after evaluation of the performance and costs of the two models. The should-cost effort is one segment of a three-part review which is divided into (1) a production cost (should cost) study, (2) a product-engineering review, and (3) performance requirements (i.e., performance-cost trade-off) analysis. As opposed to other should-cost efforts which were performed by teams comprised entirely of Government personnel, this review is being performed entirely by consultant firms.

The production cost study portion of the overall review will require a broad-based industrial engineering effort for about 1 year. During the initial phase the consultant's work primarily will be investigative in nature to arrive at preliminary conclusions about what the competing torpedo models should cost and to prepare a plan for further investigation of major cost segments that appear to have cost-reduction potential. During the second phase the consultant firm will continue the investigation supported by special studies structured to determine the full cost-reduction potential for several alternative production schedules.

We have been informed by Navy officials that, barring unforeseen special circumstances such as a significant rise in a particular program's costs, the Navy does not plan to perform additional should-cost reviews. Instead, the Navy

plans to upgrade and more fully train its field organizations so that the routine reviews of contractors' cost proposals and operations will be more effective and useful to the procuring activities. Navy officials believe that, if such improvements are made to the existing procurement system, the need for should-cost reviews will be very limited.

Department of the Army

In addition to performing a review of costs for the HAWK missile (see p. 17), the Army is currently performing a review of UH-1 helicopter production costs and is making plans for a third review in the near future. Army officials believe that the should-cost technique is fully consistent with the Armed Services Procurement Regulation Manual for contract pricing. It was their opinion that the primary differences between the traditional preaward review and the should-cost technique are essentially the depth to which the contractor's **management** and operations are analyzed, and the use of a combined audit, engineering, and pricing team to perform the evaluation;

Army officials have informed us that⁹ whereas the traditional approach to contract negotiation has been to accept the contractor's mode of operations, the Army's should-cost approach is based on (1) a challenge of the contractor's operating practices, (2) a coordinated in-depth analysis of the contractor's manufacturing operations, management controls, purchasing practices, etc., and (3) an identification of reasonably attainable economies and efficiencies.

The Army does not intend to apply the substantial effort involved in a should-cost review to every contract where inefficiencies are suspected. Rather, such reviews will be limited to a small number of contractors when it is determined that cost, delivery, or technical problems make such an effort appropriate.

Department of the Air Force

The Department of the Air Force recently initiated its first should-cost review. In the past the Air Force has

maintained industrial management assistance survey efforts,
which in some respects were comparable to should-cost
reviews.

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CHAPTER 4

CONTRAST BETWEEN DOD AND GAO SHOULD-COST REVIEWS

The military services have performed should-cost reviews in order to be in a position to better negotiate contract prices for selected major weapons systems. GAO, on the other hand, recognizing that the negotiation of contract prices is the responsibility of the procuring agency, believes that its reviews cannot be conducted prior to awards of the contracts. Future GAO reviews will therefore have the objectives of evaluating how procuring agencies and contract administration activities are discharging their responsibilities and of suggesting ways in which contractors can reduce future costs to the Government.

Although similar techniques have been utilized by DOD agencies and by GAO to accomplish should-cost-type reviews, the basic differences in the objectives and in the time frames in which the reviews are conducted will have an impact on the benefits which can be realized. Furthermore, GAO is currently faced with the fact that there is no firm statutory authority for it to perform should-cost reviews.

These matters are discussed in the following sections.

EFFECTIVENESS OF REVIEWS

In our opinion, **procuring** agencies that **perform** should-cost reviews prior to the awards of major contracts are in an excellent position to obtain contractor cooperation and concurrence in needed changes. Application of should-cost concepts during preaward reviews enables Government contracting officers to negotiate from positions of strength because the comprehensive findings and observations of the review teams are available during negotiations. Since this type of data is available, the contracting officer can influence the contractors to adopt recommendations for improved operations.

As a result of the findings of the should-cost review conducted prior to the negotiation of the contract for the engines for the F-111 aircraft, the contractor was required

by the terms of the production contract to study and effect improvements in selected management functions. Similarly, in the case of the HAWK missile, the Army included eight management improvement goals as part of the production contract.

Although we had some degree of success in encouraging contractors to study and/or improve their operations, we could not be as effective as the procuring agencies in motivating the contractors. There was no obligation on the part of contractors to accept the recommendations of the GAO review teams, and in some instances no interest was shown in objectively considering our proposals. It should be noted, however, that we did call our findings to the attention of the cognizant Government procurement and contract administration activities, and it is probable that many of the recommendations will be actively considered during negotiations of future contracts.

In other instances, contractors took an active interest and a positive attitude toward reducing the costs of future operations. It seemed clear, therefore, that the success of future GAO reviews of this type would depend on the cooperation demonstrated by the contractors and the extent to which DQD contracting officials utilize our findings and recommendations during negotiations of future contracts.

LACK OF STATUTORY AUTHORITY FOR GAO TO PERFORM SHOULD-COST REVIEWS

Should-cost reviews performed by procuring agencies are accomplished in connection with preaward analyses of contractors' proposals. As such, there is no question as to the Government's right to analyze contractors' operations and to suggest ways in which costs can be reduced.

GAO's right to examine contractors' records, however, is limited to those books, documents, papers, and records directly pertaining to a particular contract in question. There are many aspects of a contractor's management and operations which appear to be outside the scope of that authority but which must be incorporated in should-cost reviews. Our current trial reviews were conducted at locations where management voluntarily agreed to cooperate with

GAO. Effective application of should-cost concepts in the future, however, will require that GAO be capable of making independent selections of contractors to be the subjects of reviews.

Effective application of the techniques of should-cost analysis requires that any aspect of a contractor's management that could affect contract costs be open to inquiry. As a practical matter, however, it is necessary to limit the areas of review to those matters that appear to offer potential for substantial savings. The review team must therefore make maximum use of prior reviews by both Government activities and by internal contractor organizations in order to identify those functional areas requiring more detailed review. On the basis of our trial applications, we believe that the following areas, as a minimum, should be considered during the preliminary phases of a should-cost review.

- Labor standards and direct labor controls.
- Production processes and controls.
- Plant layout.
- Material controls.
- Procurement practices.
- Make-or-buy policies.
- Accounting and cost estimating systems.
- Indirect expense controls and allocations.
- Quality-control procedures.

CHAPTER 6

DOD AND CONTRACTOR COMMENTS

By letter dated November 12, 1970, the Deputy Assistant Secretary of Defense (Installations and Logistics) advised us that the cognizant DOD components would look into the specific matters noted at the various contractors' plants during our reviews. The Secretary's letter also stated that DOD would continue to apply should-cost techniques whenever conditions warrant. (See app. II.)

Outlined below are the pertinent comments of the contractors that were included in our review and our evaluations of their comments.

1. GAO should place greater emphasis on reviewing the overall Government procurement system as well as contractors' systems rather than on reviewing detailed costs. GAO's detailed should-cost analysis was essentially a direct duplication of those functions normally accomplished by the Defense Contract Administration Services and the Defense Contract Audit Agency.

- - - -

We agree with the contractor's position that GAO should place greater emphasis on procurement systems rather than on detailed costs in conducting should-cost reviews. It is not our objective in conducting these reviews to verify or analyze detailed contract cost data, but rather to evaluate the efficiency and economy of the contractors' operations and the effectiveness of the Government's procurement processes. With respect to duplication of effort, our review procedures are designed to utilize the data available from other Government agencies to minimize duplication of effort.

2. There was no measure of the costs to the Government and to the contractor of making the study; and the

potential savings therefore appear to be overstated. Some additional evaluation of cost benefits versus cost detraction should be made.

- - - -

The cost of our studies was considerably less than the quantifiable potential savings that we identified. Certainly, studies such as these should not be undertaken without some reasonable basis for anticipating that the benefits will outweigh the costs. It should be realized, however, that many of the benefits of a should-cost study are long-term and not readily measurable and that the cost of making a review, as opposed to the immediate measurable benefits, should not be the prime determining factor.

3. The proposed request for additional statutory authority seems inappropriate in the context of a should-cost study. GAO already has authority to review the procuring agency's activities. The emphasis on the cooperation required for successful should-cost reviews seems to belie the need for authority for additional access to plants, personnel, and records and contains a connotation of duress which would defeat the purpose.

- - - -

We have found, in the great majority of cases, that contractors will cooperate with Government audit agencies and will provide the necessary data and personnel. On occasions, however, there have been differences of opinion as to the right of Government personnel to examine certain records and/or to look into selected aspects of contractors' operations. To avoid such problems in the future and to enable GAO to make effective independent examinations, we believe that the Congress should clearly state its intent concerning the extent of GAO's authority to review contractors' operations.

CHAPTER 7

CONCLUSIONS

As a result of our trial reviews, we believe that should-cost concepts can be effectively applied to contractor operations and that **GAO** should continue to make such reviews. In our opinion, however, the greatest benefits will accrue when this type of review is performed by procuring activities as part of their preaward analyses of contractors' proposals. At that time, the results of should-cost reviews would be of maximum effectiveness in assisting Government negotiators in arriving at fair and reasonable prices. **Even** more importantly, potential Government contractors will be more likely to accept should-cost findings and to implement any needed corrective procedures prior to the award of a major contract.

Should-cost review techniques can be effectively applied by GAO as a means of identifying potential economies through improvement in contractor operations and as a means of evaluating the effectiveness of agency procurement policies and practices, preaward proposal reviews, and contract audit and administration activities. GAO, however, has no firm statutory authority to make these reviews and, until the Congress grants such authority, GAO will have to depend on the voluntary cooperation of contractors for access to their plants and records.

Whether performed by procuring agencies or by GAO, the overall success of any should-cost review will be largely dependent upon the cooperation and attitude of the contractor. These reviews require full disclosure, free and complete access to the contractor's plant and management personnel, and an objective attitude by the contractor toward the constructive criticism of the should-cost review team.

In our opinion, should-cost-review emphasis should be given to larger contractors, operating under negotiated contracts, in a noncompetitive atmosphere. Within this broad criterion, both the bases for selection of a specific contractor for review and the extent and depth of the application of should-cost concepts should remain flexible

and should be based on consideration of past contractor cost performance on specific contracts and on evaluation of efforts made to implement previous recommendations for improvements.

MATTERS FOR CONSIDERATION BY THE CONGRESS

As pointed out on page 22, GAO has only limited authority to examine contractors' records, and many aspects of contractors' operations and management would appear to be outside of the scope of that authority. The Congress therefore may wish to consider appropriate legislation to expand our authority and to clarify the intent of the Congress concerning the scope of reviews to be undertaken by GAO in contractors' plants,

APPENDIXES

APPENDIX I

SUMMARY OF QUANTIFIABLE POTENTIAL SAVINGS IDENTIFIED THROUGH APPLICATION OF SHOULD-COST CONCEPTS

<u>Observation</u>	<u>Potential annual cost savings</u>
1. Savings attainable through a contractor's implementation of an effective production control system (required one-time investment of approximately \$580,000)	\$3,100,000
2. Increased use of competition by a prime contractor in awarding subcontracts	150,000
3. Reduction in labor cost by elimination of costs related to engineering organizations and skills which are no longer required to support items being produced	99,000
4. Reduction in annual contractor procurement costs through use of economic order quantity techniques (\$174,000 to \$297,000, depending on volume of purchases)	297,000
5. Reduction in the level of packaging requirements for spare parts produced for use in overhaul activities within the continental United States (\$200,000 to \$600,000, depending on contract quantities)	600,000
6. Change from extensive contractor acceptance test procedures to more realistic testing for the purpose of product verification	1,100,000
7. Consolidation of Government and contractor-operated motor pools located at the same location and utilization of regularly scheduled service rather than chauffeured service to and from airports	209,000
8. Elimination of prime contractor profit on subcontracted effort where about 90 percent of the total effort is subcontracted to one vendor and the prime contractor has minimal responsibility	77,000
9. Reduction in indirect labor force due to a more efficient use of personnel	75,000
	<u>\$5,707,000</u>



ASSISTANT SECRETARY OF DEFENSE
WASHINGTON, D.C. 20301

12 NOV 1970

INSTALLATIONS AND LOGISTICS

Mr. C. M. Bailey
Director, Defense Division
U. S. General Accounting Office
Washington, D. C. 20548

Dear Mr. Bailey:

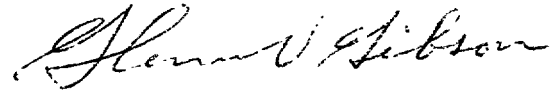
This is in response to your letter of October 14, 1970 transmitting for comment your draft report titled, "Application of 'Should Cost' Concepts in (GAO) Reviews of Contractors' Operations" (OSD Case #3192).

The draft report presents the results of a GAO test for utilizing the "should cost" concept in performing GAO audit reviews. This test was made in response to a recommendation by the Subcommittee on Economy and Government Joint Economic Committee in its report of May 1969. The GAO report states that four trial reviews utilizing the "should cost" concept were conducted. It is concluded that such reviews can be beneficial and that GAO should continue to make such reviews. No specific recommendations are made. However, the report makes the observation that the present statutory authority of GAO to examine contractor's records is not broad enough to enable it to examine all the matters which should be considered in "should cost" reviews.

Though your report contains no specific recommendations addressed to the Department of Defense, it does provide comment on several matters of suggested improvement noted in connection with the GAO review at the four contractor plants mentioned in the report. The cognizant DoD components will, of course, look into the suggested management improvements.

With respect to your basic observation that GAO can utilize the "should cost" concept in conducting its audit reviews, we are hopeful that the GAO may benefit from the DoD experiences. As the GAO report notes, DoD has used this technique on a very selected basis. We are prepared to perform such reviews wherever conditions warrant. However, our experience demonstrates that this approach requires a substantial number of talented personnel for an extended period.

We appreciate this opportunity to comment upon your report.

A handwritten signature in cursive script, reading "Glenn V. Gibson".

Glenn V. Gibson
Deputy Assistant Secretary of Defense

PRINCIPAL OFFICIALS OF
THE DEPARTMENT OF DEFENSE
AND THE MILITARY SERVICES
RESPONSIBLE FOR ADMINISTRATION **OF** ACTIVITIES
DISCUSSED IN THIS REPORT

		<u>Tenure of office</u>	
		<u>From</u>	<u>To</u>
<u>DEPARTMENT OF DEFENSE</u>			
SECRETARY OF DEFENSE:			
Melvin R. Laird	Jan. 1969	Present	
Clark M. Clifford	Mar. 1968	Jan. 1969	
ASSISTANT SECRETARY OF DEFENSE (INSTALLATIONS AND LOGISTICS) :			
Barry J. Shillito	Jan. 1969	Present	
Thomas D. Morris	Sept. 1967	Jan. 1969	
<u>DEPARTMENT OF THE ARMY</u>			
SECRETARY OF THE ARMY:			
Stanley R. Resor	July 1965	Present	
ASSISTANT SECRETARY OF THE ARMY (INSTALLATIONS AND LOGISTICS) :			
J. Ronald Fox	June 1969	Present	
Vincent P. Huggard (acting)	Mar. 1969	June 1969	
Dr. Robert A. Brooks	Oct. 1965	Feb. 1969	
<u>DEPARTMENT OF THE NAVY</u>			
SECRETARY OF THE NAVY:			
John H. Chafee	Jan. 1969	Present	
Paul R. Ignatius	Aug. 1967	Jan. 1969	

PRINCIPAL OFFICIALS OF
THE DEPARTMENT OF DEFENSE
AND THE MILITARY SERVICES
RESPONSIBLE FOR ADMINISTRATION OF ACTIVITIES
DISCUSSED IN THIS REPORT (continued)

Tenure of office	
<u>From</u>	<u>To</u>

DEPARTMENT OF THE NAVY (continued)

ASSISTANT SECRETARY OF THE NAVY
(INSTALLATIONS AND LOGISTICS) :

Frank Sanders	Feb. 1969	Present
Barry J. Shillito	Apr. 1968	Jan. 1969

DEPARTMENT OF THE AIR FORCE

SECRETARY OF THE AIR FORCE:

Dr. Robert C. Seamans, Jr.	Jan. 1969	Present
Dr. Harold Brown	Oct. 1965	Jan. 1969

ASSISTANT SECRETARY OF THE AIR
FORCE (INSTALLATIONS AND LOGIS-
TICS) :

Phillip N. Whitaker	May 1969	Present
Robert H. Charles	Nov. 1963	May 1969