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REPORT TO THE CONGRESS

Evaluation Of Information From Contractors In Support Of Claims And Other Pricing Changes On Ship Construction Contracts

B-171096

Department of the Navy

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BY THE COMPTROLLER GENERAL OF THE UNITED STATES

APRIL 28, 1971

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COMPTROLLER GENERAL OF THE UNITED STATES
WASHINGTON, D.C. 20548

B-171096

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

This is our report on evaluation of information from contractors in support of claims and other pricing changes on ship construction contracts issued by the Department of the Navy.

Our review was made pursuant to the Budget and Accounting Act, 1921 (31 U.S.C. 53); the Accounting and Auditing Act of 1950 (31 U.S.C. 67); and the authority of the Comptroller General to examine contractors' records, as set forth in contract clauses prescribed by the United States Code (10 U.S.C. 2313(b)).

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

A handwritten signature in black ink that reads "James B. Peets".

Comptroller General
of the United States

D I G E S T

WHY THE REVIEW WAS MADE

The General Accounting Office (GAO) has issued several reports to the Congress on the Navy's procedures in contracting with private industry for ship construction.

A December 1958 report pointed out that contractors submitted claims for price increases which were vague and lacked adequate support, that Navy evaluations were inconclusive, and that claims had been settled without sufficient data to show the damage sustained by the contractors because of Government-caused delays.

Two other reports, in June and October 1964, pointed out that a lack of effective price evaluation procedures had resulted in the negotiation of unnecessarily high prices for change-order work added to the initial contract.

The review was made to determine whether improvements had been made by the Navy in obtaining and evaluating data used in the settlement of claims and the negotiation of prices for change orders.

FINDINGS AND CONCLUSIONS

Claims submitted by three different contractors (referred to as contractors A, B, and C) during the period April 1965 through January 1969 for \$114,300,000, \$486,000, and \$1,342,000 were settled for \$96,500,000, \$354,000, and \$760,000, respectively. The three contractors involved did not provide tangible evidence by which the amounts claimed could be related to the additional costs due to interruptions caused by the Government's actions.

Contractor A submitted claims totaling \$114.3 million, from two different locations. Because the claims were prepared on essentially the same basis, we limited our review to the location where about \$63.4 million of the \$114.3 million was claimed.

The contractor estimated that an additional 5.6 million labor-hours were attributable to actions of the Government. The contractor calculated the increased labor-hours by (1) adding the estimated labor-hours needed to complete the ships to the labor-hours already expended,

(2) subtracting from that figure the labor-hours originally bid for the ships and (3) subtracting from the resulting balance, a portion of the increased hours judged to be a reasonable increase due to its own inefficiencies. The contractor's proposal, although containing the reasons for the incurrence of additional costs due to actions of the Government and examples of the incurrence of such costs, did not attempt to identify the amount of idle time, substandard performance, and additional work to show whether they were attributable to Government actions. Rather, the contractor's proposal seems to have been based on the assumption that all additional costs over the amount the contractor was willing to assume responsibility for were the result of Government actions. (See pp. 9 to 12.)

Contractor B submitted two claims totaling \$486,000 for disruption and overtime. The proposals contained 95,000 additional labor-hours attributed to disruptions caused by actions of the Government. GAO could not find documentation to support the contractor's claims. Neither could GAO find factual data which the Navy could have used in analyzing the two disruption claims. (See pp. 13 to 15.)

Contractor C, engaged in constructing 3 DE-1040-class destroyer escorts, submitted a claim for \$1,342,000 for delay and disruption caused by the late delivery of Government-furnished material and by defects in the material. The amount represented the cost of 265,300 direct labor-hours although the contractor did not relate the labor-hours claimed to specific delays and disruptions. Rather, the contractor determined the additional costs by comparing the average number of labor-hours used in construction of an earlier class of destroyer escort with the average number of labor-hours incurred for DE-1040-class destroyer escorts after making adjustments for physical differences in the vessels. The excess not explained by physical differences was considered by the contractor to be due to delay and disruption. The Defense Contract Audit Agency's report on the claim accepted only 37,151 labor-hours as reasonable on the basis of the recommendation of the Navy's technical analyst. Later technical advisory reports reinstated an additional 138,473 labor-hours as attributable to delay and disruption, but the basis for the computation of the additional hours was not included. The Navy ultimately accepted 175,600 hours as attributable to delay and disruption and, accordingly, added \$760,000 to the contract. (See pp. 16 and 17.)

GAO believes that, without information linking the additional costs to actions of the Government, the Government had insufficient assurance that the settlements made were fair and reasonable.

The Department of Defense should take the necessary steps to provide a more reasonable basis for settling claims for additional costs resulting from acts of the Government than is presently being used by contracting officials.

Historical data and standards were used by certain contractors in preparing proposals for the pricing of contract changes other than those arising from claims. In evaluating those proposals, the Navy generally did not obtain that data but relied on the personal judgment and experience of its negotiators and analysts. (See pp. 24 to 27.) GAO believes that the Navy would have attained a better position for evaluating the proposals and would have gained greater assurance as to the reasonableness of the prices negotiated if it had obtained the data used by the contractors.

RECOMMENDATIONS OR SUGGESTIONS

The supervisors of shipbuilding should require contractors to furnish evidence relating the delay and disruption to actions of the Government and to provide specific data in support of additional costs claimed.

The newly implemented "change order accounting" clause should require contractors to segregate their direct costs on constructive changes, as well as formal written changes, and such requirement should be clearly stated in this regard.

To facilitate the negotiation of reasonable prices for change orders:

- Contractors lacking adequate systems to provide a factual basis for proposed prices should be encouraged to improve their systems.
- Whenever appropriate, historical cost data and standards should be obtained for evaluation and audit.
- The Navy should ensure that the supervisors of shipbuilding are obtaining current evaluations by the Defense Contract Audit Agency of the estimating systems of contractors located in their respective geographic areas and that the evaluations include the bases upon which proposed prices are developed.

AGENCY AND CONTRACTORS ACTIONS AND UNRESOLVED ISSUES

Navy

The Navy generally concurred in GAO's recommendations.

The Navy felt that some of the problem areas mentioned in the report are susceptible to improvement but not to total and precise solution. It was the Navy's opinion that this was particularly true of any attempt to achieve total, explicit, and auditable justification of all delay and disruption costs. (See p. 35.)

The Navy agreed that, where necessary, contractors should be encouraged to improve their systems for estimating prices for contract changes.

In conjunction with the Defense Contract Audit Agency, it will try to develop more detailed criteria for an acceptable estimating system.

The Navy will take steps to see that cost data and standards are obtained for evaluation and audit and, with the Defense Contract Audit Agency, will develop procedures and guidelines for scheduling and conducting evaluations of shipbuilder estimating systems.

Contractors

One of the three contractors took strong exception to any implication that its claim had not been adequately supported but made no comment on GAO's proposals.

The second contractor pointed out some of the problems inherent in accounting for delay and disruption costs but offered to review any feasible procedure prepared by the Government to obtain that information.

The third contractor believed that ample documentary evidence had been furnished in support of its claim and that the settlement was quite low. This contractor felt that it would be impossible to segregate costs relative to delay and disruption because in most cases the effects are cumulative and can be evaluated only when the total effect has become evident--that is, when the ship is nearly finished.

GAO believes that, although it may be difficult to account for delay and disruption costs, it is not impossible. Such accountability would result in greater assurance of equitable results than is obtained from the practices currently being followed. (See p. 21.)

MATTERS FOR CONSIDERATION BY THE CONGRESS

GAO is reporting this matter to the Congress because of the Navy's long-standing and uncorrected problem in the area of claims settlement and change-order pricing.

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GAO believes that, although it may be difficult to account for delay and disruption costs, it is not impossible. Such accountability would result in greater assurance of equitable results than is obtained from the practices currently being followed. (See p. 21.)

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GAO is reporting this matter to the Congress because of the Navy's long-standing and uncorrected problem in the area of claims settlement and change-order pricing.

CHAPTER 1

INTRODUCTION

We have issued several reports to the Congress concerning the methods used by the Navy in contracting for ship construction with private industry.

In our report dated December 4, 1958 (B-133088), we pointed out that contractors engaged in shipbuilding for the Navy submitted claims for price increases which were vague and lacked adequate support, that Navy evaluations were inconclusive, and that claims had been settled without sufficient data to show the actual damages sustained by the contractors because of Government-caused delays. In reports, dated June 30, 1964 (B-146751), and October 16, 1964 (B-146898), we reported that a lack of effective price evaluation procedures had resulted in the negotiation of unnecessarily high prices for change-order work added to the initial contract. Our current review was undertaken to determine whether the Navy still settled claims and negotiated prices for change orders without adequate data.

Our review of the claims did not include a review of the legal bases of the contractors' entitlement to price adjustments. Rather, our review was limited to a consideration of the adequacy of the contractors' demonstrations of the validity of the amounts claimed and the Navy's evaluations thereof.

The Naval Ship Systems Command is responsible for the acquisition of naval vessels constructed at either naval or private commercial shipyards.

A contract for construction of a ship consists of the initial award and work added after the contract has been awarded. Contracts awarded to private shipyards for the construction of naval vessels generally have been fixed-price type, awarded on an advertised basis. The prices for additional work are negotiated on a sole-source basis because, when the work is ordered, the ships may be immobilized at the contractors' yards in a semifinished state.

The Naval Ship Systems Command delegates the responsibility for the administration of ship construction contracts awarded to private shipyards to the supervisors of shipbuilding, conversion, and repair, located in the various naval districts. As part of their administrative responsibilities, the supervisors of shipbuilding frequently negotiate prices for changes to contracts.

The bulk of the contract change orders cover either additional costs claimed by the contractor to have resulted from some actions by the Government or additional costs due to a change in the scope of the work.

Contractors may make claims for additional compensation when they believe that their operations were delayed or disrupted, or that they otherwise incurred additional costs, because of acts of the Government. These acts might include late delivery of Government-furnished material or the furnishing to the contractor of defective specifications. Claims may be settled through negotiation by the parties, or a judicial review may be necessary.

Generally, the elements of a change order for work added to a contract cover material quantities, labor-hours, material prices, labor rates, and overhead rates.

The procedures to be followed by the supervisors of shipbuilding in pricing changes give recognition to the non-competitive nature of such transactions and call for a careful review of the proposals submitted by the contractors. Guidelines for the supervisors of shipbuilding in negotiating prices for contract changes are provided in the Ship Acquisition Contract Administration Manual, which implements the provisions of Navy procurement directives and the Armed Services Procurement Regulation. In general, these guidelines state that the use of the most current available cost information is the best basis for establishing reasonable change-order prices.

The Defense Contract Audit Agency reviews proposed labor and overhead rates, verifies material prices to vendor quotations or purchase orders, and submits its findings to the negotiators in advisory audit reports. Technical analysts in the offices of the supervisors of shipbuilding are

responsible for determining the reasonableness of (1) the number of labor-hours and (2) the quantities of material contained in contractors' proposals. Their determinations are submitted to the negotiators in technical advisory reports.

The technical advisory reports and the advisory audit reports are the primary tools available to the negotiators for establishing a negotiating position. Thus, it can be seen that the effectiveness of the Navy's negotiation of prices for changes depends upon the (1) completeness of the contractors' proposals, (2) adequacy of the technical advisory report and the advisory audit report, (3) effectiveness of the negotiator's evaluation of these reports, and (4) degree of skill exercised during the negotiation process. Inadequacies in any of these elements are significant because changes are negotiated on a sole-source basis, and the forces of competition are not present to encourage the development of reasonable prices.

The principal officials of the Department of Defense and the Department of the Navy responsible for administration of activities discussed in this report are listed in appendix II.

The scope of our review is discussed in chapter 4.

CHAPTER 2

INADEQUATE SUPPORT FOR CONTRACTOR

CLAIMS FOR ADDITIONAL COMPENSATION

In December 1958 we issued a report on problems associated with contractor claims for additional compensation under Navy ship construction contracts. We have found recent evidence that problems still exist despite the issuance of instructions on this subject by the Navy. We examined claims, submitted by three contractors during the period April 1965 through January 1969, in which the contractors held that the Government was responsible for their incurring additional costs in that the contractors' operations were delayed and disrupted because of the Government's imposition of impossible specifications and administrative failures. The contractors did not provide tangible evidence by which the amount claimed could be related to the additional costs due to interruptions caused by the Government's actions.

The claims totaled about \$116,128,000 and were settled for approximately \$97,614,000, as follows:

	<u>Amount of claim</u>	<u>Settlement</u>
Contractor A	\$114,300,000	\$96,500,000
Contractor B	486,000	354,000
Contractor C	1,342,000	760,000

In the absence of tangible evidence of the cost to the contractor resulting from acts of the Government, the Navy, in our opinion, could not adequately evaluate the validity of the amounts claimed.

The Ship Acquisition Contract Administration Manual requires that contractors' claims for disruption should include such supporting information as:

1. Description of disruptive elements and of the manner by which the work has been or will be disrupted.

2. Period of time when the disruption occurred, or will occur.
3. Area(s) aboard ship where the disruption occurred or will occur.
4. Trade(s) disrupted, with a breakdown of man-hours for each trade.
5. Schedules of trades before and during the period of disruption.
6. Measures the contractor took to mitigate or preclude the disruption.

The manual also provides that, in the event a contractor refuses to furnish supporting information, the contractor be advised that consideration of the claim for disruption will be held in abeyance until the supporting information has been received.

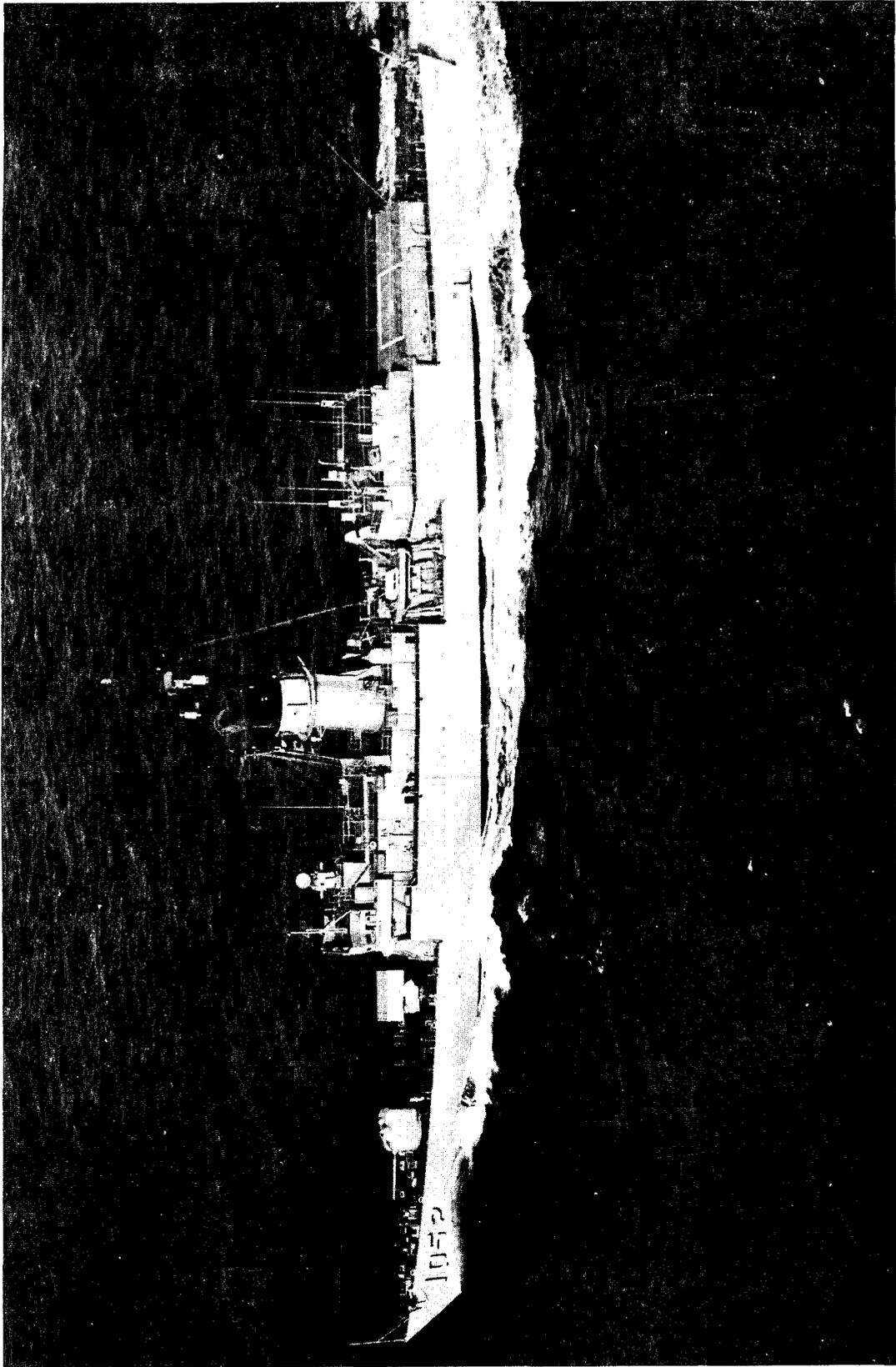
Details of the claims and the negotiation of prices with the three contractors follow.

CONTRACTOR A

The contractor submitted claims to the Navy totaling \$108.5 million for additional costs incurred, or expected to be incurred, because of acts of the Government in the construction of DE-1052 destroyer escorts (see picture on p. 10) at two of its shipyards. These claims were later increased to \$114.3 million. The bases for the claims included defective specifications for dynamic analysis, shock resistance, and noise reduction and administrative failures of the Government, such as failure to furnish design data in time. The claims were settled for \$96.5 million.

Because the claims submitted at both of the contractor's locations were prepared on essentially the same basis, we limited our review to the location where about \$63.4 million of the \$114.3 million was claimed.

About \$46 million of the amount claimed at this location was for increased labor costs. The remainder was



attributable to additional material costs and subcontractor claims.

We were particularly concerned with the contractor's demonstration of the amount of additional labor-hours which, it claimed, were incurred because of the Government's actions.

In its claim, the contractor estimated that Government-caused delays and disruption resulted in its incurring an additional 5.6 million labor-hours over the original amount estimated to complete construction of the ships involved. We found that the contractor calculated the increased labor-hours by (1) adding the estimated labor-hours needed to complete the ships to the labor-hours already expended, (2) subtracting from this number the labor-hours originally bid for the ships, and (3) subtracting from the resulting balance a portion of the increased hours judged by the contractor to be due to its own inefficiencies. Initially, the contractor was willing to assume responsibility for 10 percent of an additional 4,181,179 labor-hours incurred, 418,117 labor-hours. Subsequently, the contractor increased its estimate of the additional labor-hours incurred to 5.6 million but was unwilling to assume responsibility for more than 418,117 hours.

To estimate total labor-hours through ship completion, the contractor segregated labor-hours into two groups--production (which included work performed by the various crafts such as electricians, pipefitters, and welders)--and non-production (which included planning and scheduling, material handling, and engineering services).

The estimated production hours represented the majority of the total labor-hours, determined by projecting the hours expended on the lead ship as of a specific date after giving consideration to the stage of completion at that date. The resulting hours were then adjusted for the anticipated future growth caused by change orders, suspension of work, and other acts of the Government.

The contractor's estimate of nonproduction labor-hours, which comprised about 10 percent of the additional hours claimed, was based on the contractor's engineering judgment.

After determining the increased labor-hours supposedly caused by the Government's actions, the contractor allocated these labor-hours to the causative elements cited in the claim. The contractor advised us that the allocation by causative elements was made on the basis of engineering judgment.

In reviewing the contractor's claims, the Navy selected items of equipment that it thought best represented the delay and disruptive effects of each causative element cited in the contractor's claim. After it had selected several items, the Navy (1) examined the cost groups showing the most significant increases in labor-hours, (2) reviewed labor-hour runs and budget data, (3) held discussions with the contractor's personnel to obtain a detailed account of the increased labor-hours required to fabricate and install the shipboard equipment, and (4) reviewed ship plans and drawings to ascertain the delay and disruptive effects in various sections of the ships. The Navy then estimated the increased labor-hours attributable to actions of the Government. We believe that, under the circumstances, the Navy did as well as could be expected in negotiating the claim.

The contractor's proposal contained the reasons for the incurrence of additional costs because of acts of the Government and examples illustrating the incurrence of such costs. It did not, however, attempt to identify the amount of idle time, substandard performance, additional work, etc.; analyze each instance to show whether it was attributable to the Government's actions; and compute a total of those instances found to have been caused by the Government. Rather, the contractor's proposal seems to have been based on the assumption that all additional costs over the amount that the contractor was willing to assume responsibility for were the result of Government actions.

In our opinion, the material submitted in the contractor's proposal did not adequately demonstrate that the amounts claimed were caused entirely by acts of the Government and not possibly caused by the contractor's inefficiencies and/or an unrealistically low bid. It appears to us that the approach for determining the increased labor-hours in the settlement of this claim is not favored by the Court of Claims and it has been stated by the Court that it may be used only where there is no alternative.

CONTRACTOR B

We found that contractor B included claims totaling \$486,000 for disruption and overtime in the prices proposed for two change orders. Negotiation files showed that the Navy accepted \$354,000.

The proposal for one of the change orders contained 76,000 additional hours attributed to disruption. The proposal was accompanied by a letter detailing the crafts and the areas aboard ship affected and the reason for inefficiencies. The proposal for the second change order did not contain any explanation for an additional 19,000 hours expected to be incurred because of the disruption, except to state that 6,000 of the 19,000 hours represented overtime.

From an examination of the contractor's records, we could not find documentation to support the contractor's contention that disruption resulting in costs of \$486,000 would occur. We were unable to determine how the contractor knew it would be necessary to utilize 95,000 additional hours because of disruption. Further, we could not find factual data which the Navy could have used in analyzing the two disruption claims.

The contractor's chief estimator stated that disruption claims were based on highly intangible judgment factors and, in his opinion, were impossible to accurately detail. He also informed us that he thought the justification letter satisfied the requirements of the Supervisor of Shipbuilding Manual¹ except the requirement for a description of the disruptive elements and a statement of exactly what work had been disrupted. He said that he could not pinpoint the disruption because of its intangible nature and that strict adherence to the requirements of the manual was not practicable. In commenting on our draft report, however, the

¹The provisions covering disruption costs in the Ship Acquisition Contract Administration Manual were incorporated in the Supervisor of Shipbuilding Manual in April 1965. Thus, both publications are basically the same in this respect.

contractor cited an example of disruption and stated that not only were the craft or crafts performing the work disrupted but other crafts working in the same areas were also affected by the change.

The Navy's technical analyst stated that disruption claims were based on personal judgments of a very complex item and that he relied on his professional judgment to determine if amounts proposed were reasonable. Further, he said that, when large differences of opinion on disruption claims occurred, he attempted to reconcile the differences with the contractor through discussion.

Regarding the proposal which claimed 19,000 labor-hours for disruption, the technical advisory report showed that the hours were proposed and accepted with the explanation that this number of hours could have been expended. The Navy files did not contain documentation indicating how, where, or when the disruption occurred.

The Navy's analyst informed us that the very nature of the work on this change, sandblasting and painting, would have resulted in work stoppages and that, in addition to affecting most skilled trades, it affected the most important areas of the ship and had had a far-reaching effect on the ship's total work force. He did not, however, tell us the extent of the work stoppages, or the cost. He said that the disruption resulting from rescheduling and inefficiency was an intangible item and not subject to a line-by-line analysis.

The technical advisory report on the contractor's proposal for \$388,520 of disruption costs showed the following percentages of direct labor-hours proposed by the contractor and recommended for acceptance by the Navy's analyst.

<u>Hull number</u>	<u>Type of labor</u>	<u>Proposed</u>	<u>Recommended</u>
1	Yard	45.5%	45.5%
2	Engineering	60.6	60.6
3	Yard	75.9	50.0
4	Yard	14.5	-

The Navy analyst informed us that the disruption claim relating to hull number 4 was not accepted because the change was issued about 8 months before the ship arrived at the yard. This appeared to be sufficient advance notice to plan for the change and thus to obviate any delay and disruption to be encountered by the contractor.

On this contract the contractor submitted several claims for disruption totaling approximately \$2 million. The Navy accepted about \$1.6 million of this amount, including the \$354,000 previously mentioned.

CONTRACTOR C

The contractor, engaged in constructing 3 DE-1040-class destroyer escorts, submitted a claim for \$1,342,000 for delay and disruption caused by the late delivery of Government-furnished material and by defects in the material. The amount represented the cost of 265,300 direct labor-hours although the contractor did not relate the labor-hours claimed to the delay and disruption. The claim was subsequently settled for \$760,000. Navy officials stated that the settlement was based on judgment and, in their opinion, was a good settlement because the amount was considerably less than the amount proposed in the contractor's revised proposal.

In submitting its claim the contractor set forth additional steps that had to be taken because of the late delivery and/or failure of Government-furnished material. The contractor determined the additional costs by comparing the average number of labor-hours used in construction of DE-1030-class destroyer escorts with the average number of labor-hours incurred for DE-1040-class destroyer escorts after making adjustments for physical differences in the vessels. The excess not explained by physical differences was considered by the contractor to be due to delay and disruption.

The Defense Contract Audit Agency questioned \$1,181,000 of the \$1,342,000 claimed by the contractor, accepting only 37,151 hours of the estimated delay and disruption as reasonable on the basis of the recommendation of the Supervisor of Shipbuilding's technical analyst.

The audit report pointed out that (1) an analysis of the contractor's internal management report indicated that the contractor underestimated the hours required to construct the hulls involved and (2) although the contractor had considerable experience constructing the DE-1030-class ship used as a basis for comparison, its work on the DE-1040 ship represented its initial effort on a larger, heavier, and dissimilar vessel.

The audit report was forwarded on November 28, 1966, to the Naval Ship Systems Command, along with a technical evaluation of the contractor's claim, for review by the Supervisor of Shipbuilding. The evaluation indicated that the claim had some areas of merit, and these were shown in the audit report--the 37,151 hours originally accepted. Other areas of the contractor's claim, the remaining 228,229 hours, did not merit consideration in the technical analyst's opinion.

A technical advisory report of January 22, 1968, reinstated 101,500 hours for delay, disruption, and loss of utilization of facilities, which were to be added to the 37,151 hours originally accepted.

Although the technical advisory report cited, as justification for the reinstatement, the fact that (1) late delivery of Government-furnished material caused delay and disruption, (2) failure of Government-furnished material caused delay, (3) late delivery and installation of electronic equipment resulted in additional costs, and (4) the contractor lost the use of its facilities for other work because of the delays, the report did not show the basis on which the number of additional hours were computed.

On February 16, 1968, the contractor submitted a letter which reiterated the reasons for the claim and pointed out the intangible nature of disruption and delay. It did not present data on which labor-hours could be computed. On May 10, 1968, another technical advisory report was prepared adding an additional 36,973 labor-hours to the hours already allowed. The justification cited in the report was again late delivery of Government-furnished material, and again the basis for the computation of additional hours allowed was not included.

The Navy ultimately accepted 175,600 hours as attributable to the disruption and, accordingly, added \$760,000 to the contract.

CONCLUSIONS

Although the contractors' claims that we examined were based on causes which could be attributed to Government actions, the records made available to us did not contain information as to the specific equipment that was delayed nor contain information as to the effect the delay had on increasing the cost of the contractors' operations. We realize that such matters as delay and disruption are complex. However, we believe that better information can be obtained than is being furnished.

We believe that in the absence of such information, there is not sufficient assurance that the settlements made were fair and reasonable. The practices presently being followed in settling claims could lead to an erosion of the contractor's incentive to control costs with a corresponding decline in the effectiveness of firm-fixed-price contracting.

We believe that the Department of Defense should take the necessary steps to ensure that settlements of claims are supported by factual and reliable data relating the specific amount claimed to acts of the Government.

On March 6, 1970, the Navy issued its Procurement Circular Number 15 which set forth certain revisions to its procurement directives geared to lessening the problem of settling contractor claims. The revisions include a "changes" clause which may be used by contracting officers in procurements where constructive changes, as well as formal written changes, such as in major development or initial production contracts are anticipated. The clause states that, if the contractor considers that any written or oral communication received from a representative of the Government (or any other act or omission of the Government) constitutes a change order, the contractor shall so advise the contracting officer within 10 days (or another time period to be specified by the procuring activity) and shall request his written confirmation thereof. The contractor is to take no further action on the matter until it has been advised by the contracting officer as to the disposition thereof.

The contracting officer is required to (1) countermand the communication regarded as a change order or (2) deny that the communication, act, or omission described in the contractor's notice constitutes a change order or (3) confirm, in writing, that the communication, act, or omission described in the contractor's notice is a change order. The clause also states that, if the contractor complies with any order, direction, interpretation, or determination from someone other than the contracting officer without providing the notice and receiving the response provided above, it shall be at the contractor's risk; and the Government shall not be liable for any increased costs, delay in performance, or contract nonconformance by the contractor.

Failure by the Government to respond within the time stipulated in the clause shall be deemed a confirmation by the Government. Any claim by the contractor for price adjustment under this clause must be asserted within 30 days from the date of receipt by the contractor of a written change notice from the contracting officer. The contracting officer, if he decides that the facts justify such action, may receive and act upon any such claim at any time prior to final payment under the contract.

The revised Navy procurement directives also include a change-order accounting clause which may be used to obtain change-order cost segregation, where feasible, in contracts where the procuring activity reasonably can anticipate the issuance of change orders for which individual costs of performance can amount to \$100,000 or more. The clause states that:

"Except where a change is promulgated in a supplemental agreement adjusting the contract (price/estimated cost and fee/target cost and target profit) with respect to such term, the Contracting Officer shall state in each change order issued pursuant to this contract--where its estimates so indicate--that the cost of the changed work is estimated by the Government to exceed \$100,000, and the Contractor, with respect to each such change order, shall maintain separate accounts *** of all segregable direct costs (less allocable credits) incurred in performing the changed work, whether

such work was added, deleted, or otherwise changed, and whether changed immediately or sequentially, including without limitation delay and disruption elements of changed work."

Although the revised procurement directives appear to improve the Government's position in settling contractor claims, we feel that further improvement can still be made. The revised directives are not clear as to whether or not the new change-order accounting clause applies to both constructive changes and formal written changes. We feel that the clause should require contractors to segregate their direct costs on both types of changes and that such requirement should be clearly stated in this regard. Otherwise, the weaknesses in negotiating contractor claims disclosed in this report will not have been eliminated.

In addition, the Navy is taking certain actions which are designed to reduce the number and amount of contractor claims. We are evaluating these actions in a separate review.

CONTRACTOR COMMENTS

One of the three contractors to whom the preliminary draft was submitted took strong exception to any implication that its claim had not been adequately supported. However, it did not comment on our proposals.

The second contractor pointed out some of the problems inherent in allocating costs related to delay and disruption but stated that it would be amenable to reviewing any feasible procedure prepared by the Government to obtain this information.

The third contractor stated its belief that it had furnished ample documentary evidence in support of the claim and that the amount of settlement was quite low. This contractor felt that it would be impossible to institute a procedure for segregating costs relative to delay and disruption since in most cases the effects were cumulative and could only be evaluated when the total effect had become evident and the ship was nearly finished.

Although we agree that accounting for delay and disruption costs presents difficulties, we believe that they are not insurmountable. In our opinion basic elements of delay and disruption are idle time and substandard performance. It appears to us that a foreman or leadman who is aware of what his people are doing could readily provide the basis for accounting for idle time. Similarly, we believe that substandard performance can be determined if standard performance is identified. It appears that, in both instances, the causes would be determinable and one could verify whether it was due to actions of the Government.

We recognize that delay and disruption cannot be accounted for with the same precision as other costs. We believe, however, that a reasonable method of accounting for such factors as idle time and substandard production must be found in order to provide greater assurance of equitable results than is obtained from the practices currently being followed.

In our opinion, the agency may not be adequately protecting the Government's interest unless it insists upon an adequate demonstration by the contractor connecting the amount claimed with actions of the Government.

GAO PROPOSALS

In our preliminary draft report, we proposed that the supervisors of shipbuilding require contractors to furnish information in support of their claims as required by the provisions of the Ship Acquisition Contract Administration Manual. (See p. 6.) In particular, contractors should be required to furnish evidence relating the delay and disruption to actions of the Government and also to provide specific data in support of the additional costs claimed to have resulted from such delay and disruption.

We also proposed that the manual be revised to provide that contractors immediately notify the Supervisor of Shipbuilding when delay and disruption occur so that an early agreement can be reached with the contractor on appropriate procedures to be instituted to segregate costs which relate to the interrupted activity.

AGENCY ACTIONS

By letter dated April 16, 1970 (app. I), the Assistant Secretary of the Navy advised us that it was the Navy's opinion that some of the problems mentioned in our draft report lend themselves to improvement only rather than to a precise and total solution, particularly in the area of explicit and auditable justification of all delay and disruption costs.

The Assistant Secretary stated that it had been and would continue to be the policy of the Navy that contractors should adequately support their claims. He added that the Naval Material Command had recently established a Claims Group to ensure compliance with this policy on all major claims. He stated further that the Naval Ship Systems Command had established special teams to process the settlement of all shipbuilder claims and, in conjunction with the Shipbuilding Industry Advisory Council, was revising the Ship Acquisition Contract Administration Manual to better reflect acceptable procedures for documenting and negotiating disruption claims. The Assistant Secretary stated also that alternate procedures under which disruption costs would be adjudicated solely on the basis of each change involved

rather than on the basis of total cumulative action to any given point in time would be investigated.

The Navy agreed that prompt notification of the occurrence of delay and disruption by contractors was needed. The Navy felt that in many instances it would be difficult to segregate costs resulting from delay and disruption.

RECOMMENDATIONS

Because of the long-standing problem in the area of claims, we recommend that the supervisors of shipbuilding require contractors to furnish evidence relating the delay or disruption to actions by the Government and also to provide specific data in support of the additional costs claimed to have resulted from such delay and disruption.

We recommend also that Navy regulations be further revised by clarifying the new change-order accounting clause so that it will require contractors to segregate their direct costs on both constructive changes and formal written changes. This would further strengthen the Government's position in settling contractor claims.

CHAPTER 3

CHANGE ORDERS NEGOTIATED

WITHOUT REGARD TO AVAILABLE COST DATA

At the offices of the four supervisors of shipbuilding visited, we found that four of the five contractors reviewed used historical cost data and standards as the bases for proposing prices for 20 change orders. In evaluating these proposals, however, the Navy generally did not obtain this data but relied on the personal judgment, experience, and knowledge of its negotiators and analysts.

We recognize that the exercise of professional judgment is an essential part of the evaluation process. However, the acquisition and analysis of the factual data upon which a contractor's estimate is prepared appears to be an essential prerequisite to making an adequate evaluation of the estimate. Analysis of the data permits verification of its accuracy and enables the analysts to affirm the validity of the judgmental factors used to arrive at the estimate. Thus, both parties have access to the pertinent facts and are placed on equal footing, and the negotiation of fair and reasonable prices is facilitated.

For supplemental work done on a firm-fixed-price basis, it is the Navy's policy to negotiate final prices using the estimates provided by the contractors and, to the extent possible, to agree on a price prior to completion of work called for by the change. When a change is ordered, the contractor is required to prepare a proposal showing the estimated price of the required work. Instructions of the Naval Ship Systems Command stipulate that a price breakdown should be obtained with each proposal made by a contractor. Further, paragraph 3-807.3 of the Armed Services Procurement Regulation, relating to the implementation of the Truth-in-Negotiations Act (Public Law 87-653), requires that the negotiator be in possession of current, complete, and accurate cost or pricing data before decisions are made on contract prices and obtain from the contractor a certificate of current cost or pricing data.

Following are examples of the evaluation techniques followed by the Navy in negotiating prices for change orders.

We found at the office of one Supervisor of Shipbuilding that the Navy accepted the labor-hours proposed for change orders negotiated with two contractors, one for \$161,000 and the other for \$100,200, without obtaining from the contractors the information that they had used to develop their proposed prices. Both contractors based their proposals on labor-hour estimates included in their original bids. However, the Navy did not determine how the contractors arrived at these figures. According to the negotiator he was aware of no standards which could be applied and, instead, relied on his own experience and judgment and the judgment of the technical analyst to establish the validity of the costs proposed.

In view of the above circumstances, we inquired of the Proposal Evaluation Division at the same office as to the policy followed in obtaining cost data. We were advised that contractors had never been requested to provide historical cost data upon which estimates were based and that it was believed that the data were not adequate for application to current work. A contractor, which had extensive files of indexed and cross-referenced historical costs accumulated over the years, informed us that the Supervisor of Shipbuilding had not examined its files.

At the office of another Supervisor of Shipbuilding, primary reliance was placed on the technical and audit reports. We found, however, that the technical analysts relied heavily on their judgment in evaluating proposals and did not obtain the factual data used by the contractor for consideration and analysis.

The contractor was using historical costs as a basis for its estimates when proposing prices for change-order work. For example, on one change order the contractor used 117 hours per ton of steel on the basis of its past experience in hull construction for similar vessels under prior contracts. Contractor officials stated that their accounting system for labor provided statistical and experienced labor cost data. The system was designed to provide for the evaluation and control of labor performance and to

provide comparisons of planned and budgeted labor-hours with actual labor-hours.

At the other two offices visited, we found the situation to be similar to those described above, in that the Navy did not get detailed information in support of the contractors' claims. At one of these offices, we found that one contractor was modifying its present accounting system to provide for the accumulation of historical cost data.

AVAILABILITY OF COST DATA

We visited five private shipyards to determine whether contractors had available cost data that could be used by the Supervisor of Shipbuilding in evaluating proposals.

We found that three accumulated and used historical cost data in preparing original bids and in proposing prices for change orders. At a fourth shipyard, although the contractor relied primarily on the judgment and experience of its estimators, we noted that it also used standards in preparing estimates. As mentioned previously on page 26 another contractor was modifying its cost accumulation system to provide better cost data which could be used to estimate, evaluate, and negotiate fair and reasonable prices.

Presented below are some examples of the data accumulated by selected contractors.

One contractor informed us that its labor-hour estimates normally were based upon historical costs experienced in each production shop or department and recorded and filed by individual line items of work. Upon completion of a job order, each shop retains a data package showing materials used, labor-hours estimated, and actual hours used. Our examination of these records indicated that they were very extensive and were well indexed and cross-referenced for easy use.

Another contractor's system provides for presentation of labor-hour data by ship structural elements, shop, and craft operations. The system is designed to provide for the evaluation and control of labor performance and provides comparisons of planned and budgeted labor-hours with actual labor-hour cost. We were advised that the labor-hour data provided a historical cost record with respect to estimates for new construction as well as to prices for change orders.

CONCLUSIONS

The reliance placed by the Navy on the personal judgment, experience, and knowledge of its personnel in evaluating prices proposed for change orders might be acceptable when reliable cost information is not available. We found,

however, that four of five contractors that we examined were using historical cost data and standards as bases for their proposals and that the fifth contractor was willing to consider their use. We believe that, under these circumstances, the Navy would have been in a better position to evaluate the proposals had it obtained the data and would have gained greater assurance as to the reasonableness of the prices negotiated.

GAO PROPOSALS

To facilitate the negotiation of reasonable prices for change orders, we proposed in a draft of this report that:

1. Contractors' not having adequate systems to provide factual bases for proposed prices should be encouraged to modify their systems.
2. Whenever it is appropriate, historical cost data and standards should be obtained for evaluation and audit.
3. The Naval Ship Systems Command conduct a program of active surveillance to ensure that the supervisors of shipbuilding obtain current Defense Contract Audit Agency evaluations of the estimating systems of contractors located in their respective geographic areas and that the evaluations include the bases upon which proposed prices are developed.

AGENCY ACTIONS

The Navy agreed that improvements in procedures and methodology for evaluating contractors' proposed prices for changes to ship construction contracts were desirable. It stated, however, that the collection of usable historical costs and the development of valid standards which both the contractor and the Government would consider an aid for future pricing had proven difficult in the shipbuilding industry and that it was probable that this industry would not be able to proceed as far in obtaining such standards as would many other types of industries.

We noted that in some instances contractors and Naval shipyards had developed data on which to base estimates for the pricing of changes, and the methods used appeared valid to us.

The Navy stated that it would, in conjunction with the Defense Contract Audit Agency, investigate the feasibility of developing more detailed criteria for what constitutes an acceptable estimating system and of contractually requiring shipbuilders to establish formal estimating systems to meet such criteria.

The Navy also agreed with our suggestion that historical cost data and standards should be obtained for evaluation and audit. The Navy will emphasize this policy and will revise the guidance for the preparation of technical advisory reports to require that each report reflect the extent to which such evaluation has been made.

RECOMMENDATIONS

To facilitate the negotiation of reasonable prices for change orders, we recommend that:

- Contractors that do not have adequate systems to provide factual bases for proposed prices should be encouraged to modify their systems.
- Whenever appropriate, historical cost data and standards should be obtained for evaluation and audit.
- The Navy ensure that the supervisors of shipbuilding obtain current evaluations by the Defense Contract Audit Agency of the estimating systems of contractors located in their respective geographic areas and that the evaluations include the bases upon which proposed prices are developed.

CHAPTER 4

SCOPE OF REVIEW

Our review covered claims of three contractors for additional costs totaling \$116,128,000 incurred because of actions of the Government. We also reviewed 20 change orders with a gross value of \$4.4 million.

At the office of each Supervisor of Shipbuilding, we reviewed the claim and change-order files including correspondence, audit reports, technical advisory reports, funding data, scope letters, and prenegotiation and postnegotiation business clearances. We held discussions with personnel of the offices of each Supervisor of Shipbuilding to determine what factors were considered in evaluating proposals for each selected change order. We also reviewed the Ship Acquisition Contract Administration Manual to determine the Navy's policies and procedures for evaluating the reasonableness of the proposals.

For the claims and change orders selected, we examined the contractors' price proposals and related documentation and discussed the amount of each claim and the pricing of each change order with contractor officials to obtain an explanation of the basis for each estimate. In addition, we reviewed the contractors' policies and procedures for processing contract changes and accumulating the related costs.

APPENDIXES



DEPARTMENT OF THE NAVY
OFFICE OF THE SECRETARY
WASHINGTON, D. C. 20350

16 APR 1970

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

Dear Mr. Bailey:

Assistant Secretary of the Navy (FM) letter of 3 March 1970 advised you of the reasons for the Navy's inability to reply to the GAO draft report on the Navy's evaluation of contractors' proposed prices for changes to ship construction contracts by the date you requested, and informed you of the date by which a substantive reply could be expected.

The evaluation of the matters covered by the GAO report has been completed, and I am enclosing the Navy reply to the report.

Sincerely yours,

A handwritten signature in cursive script, appearing to read "Robert A. Frosch".

ROBERT A. FROSCH

Assistant Secretary of the Navy

Encl:

- (1) Navy Reply to GAO Draft Report of 5 Jan 1970 on Evaluation of Contractors' Proposed Prices for Changes to Ship Construction Contracts (OSD Case #3062)

Navy Reply
to
GAO Draft Report of 5 January 1970
on
Evaluation of Contractors' Proposed Prices for
Changes to Ship Construction Contracts
(OSD Case #3062)

I. GAO Findings and Recommendations

GAO issued two reports to Congress in 1964 which stated that a lack of effective price evaluation procedures had resulted in the negotiation of unnecessarily high prices for change order work added to the initial contract. Subject report is the result of GAO's recent review which was undertaken to ascertain the extent to which the Navy had improved its techniques for evaluating proposed prices for change orders.

GAO found that:

[See GAO note.]

two contractor claims totaling about \$1.83 million were settled for about \$1.11 although the contractors provided no tangible evidence that could relate the amounts claimed to the interrupted construction allegedly caused by the Government's actions. The amounts the Government agreed to pay were based primarily on the judgment of its negotiators. GAO considers that the Navy could not adequately evaluate the validity of the amounts claimed because of the absence of evidence of the cost to the contractors of the delay and disruption.

GAO note: The deleted comments relate to matters which were discussed in the draft report but have been deleted from this final report. Enclosure (1)

To facilitate the negotiation of reasonable prices for change orders GAO recommends that: (1) Contractors without an adequate system to provide a factual basis for proposed prices should be encouraged to modify their systems, (2) historical cost data and/or standards should be obtained for evaluation and audit, (3) the Navy ensure that SUPSHIPS are obtaining current evaluations by DCAA of the estimating systems of contractors in their respective geographic area. In regard to the negotiation of claims for delay and disruption, GAO makes two additional recommendations: (4) SUPSHIPS require contractors to furnish evidence and specific data in support of additional costs claimed to have resulted from Government actions relating to such delay and interruption, and (5) Navy regulations be revised to require contractors to notify SUPSHIPS immediately when delay and disruption occurs.

II. Navy Position

The Navy concurs that improvement in procedures and methodology for evaluation of contractors' proposed prices for changes to ship construction contracts is desirable. The Navy is desirous that shipbuilders utilize a system providing a factual basis for pricing changes to the maximum extent possible. All shipbuilders have methods and procedures for estimating. Historical data are used to the extent they are available to develop empirical relationships and estimating "thumb rules" which are tempered by experience and judgment in preparing individual estimates. The collection of usable historical costs and development of valid standards which both the contractor and the Government would consider believable enough to use as an aid for future pricing have proven difficult in this industry as well as others. It is probable that the shipbuilding industry will not be able to proceed as far in obtaining good standards as many other types of industries. This is particularly true in ship construction and installation operations as opposed to shop operations. Consequently, contractors tend to continue to rely heavily on professional estimators and their individual skills in interpreting and extrapolating the cost data and standards available.

The Navy concurs with the intent of Recommendations 1 through 4. Definite actions are being taken to ensure full implementation. However, it is the opinion of the Navy that some of the problems mentioned by GAO lend themselves only to improvement rather than precise and total solution. This is particularly true in the area of total explicit, and auditable justification of all delay and disruption costs. The Navy concurs only with the general intent of Recommendation 5. Specific comments related to each recommendations are listed below:

Recommendation 1

Contractors that do not have an adequate system to provide a factual basis for proposed prices should be encouraged to modify their systems.

Navy Comment

Concur. The Navy will encourage contractors to make more effective use of historical data and to develop better standards. Specifically, the Navy will, in conjunction with DCAA, investigate the feasibility of developing more detailed criteria for what constitutes an "acceptable estimating system" and of levying a specific contractual requirement for shipbuilders to establish formal estimating systems that meet such criteria.

Recommendation 2

Whenever appropriate, historical cost data and/or standards should be obtained for evaluation and audit.

Navy Comment

Concur. NAVSHIPS will promulgate a notice to all SUPSHIPS re-emphasizing this policy. Furthermore, the guidance for preparation of TARs (Technical Advisory Report) will be revised to require that each TAR reflects to what extent such evaluation was made.

Recommendation 3

The Navy ensure that SUPSHIPS are obtaining current evaluations by the DCAA (Defense Contract Audit Agency) of the estimating system of contractors located in their respective geographic areas, including the basis on which proposed prices are developed.

Navy Comment

Concur. NAVSHIPS and DCAA Headquarters will develop appropriate procedures and guidelines for scheduling and conducting evaluation of shipbuilder estimating systems.

Recommendation 4

We recommend that SUPSHIPS require contractors to furnish information in support of their claim as required by the provisions of the SACAM (Ship Acquisition Contract Administration Manual) and as outlined on page 15 of the report. In particular, contractors should be required to furnish evidence relating to the interruption to actions by the Government and also to provide specific data in support of the additional costs claimed to have resulted from such delay and disruption.

Navy Comment

Concur. It has and will continue to be the policy of the Navy that contractors adequately support claims. NAVMAT has recently established a Claims Group to assure compliance with this policy for

all major claims of its Systems Commands. NAVSHIPS had previously established an intensive program and organized special teams with central headquarters coordination to process to settlement all ship-builder claims. Also, NAVSHIPS is currently, in conjunction with the Shipbuilding Industry Advisory Council, revising SACAM better to reflect acceptable procedures for documenting and negotiating disruption claims. In addition, action will be initiated to investigate alternatives to the present procedure under which disruption costs are adjudicated solely on the basis on individual changes, rather than on the basis of total cumulative Government actions to any given point in time. The aim of the investigation will be to develop procedures to facilitate more timely settlement of disruption claims.

Recommendation 5

We also recommend that SACAM be revised to provide that contractors immediately notify SUPSHIPS when delay and disruption occur so that an early agreement can be reached with the contractor on appropriate procedures to be instituted to segregate costs which relate to the interrupted activity.

Navy Comment

Concur that prompt notification of occurrence of delay and disruption by contractors is needed. Do not concur that such notification will in itself resolve the most difficult of the problems related to segregation of related costs. In addition, it is observed that the SACAM is not contractually binding on a contractor and is only directory to the SUPSHIP.

In the case of delays, the following clause already appears in all shipbuilding contracts:

"DELAYS. In the event of any delay in the construction of any of the vessels the Contractor shall give the Department prompt notice thereof in sufficient detail to permit the Department to take appropriate action to minimize the effect of such delay."

The Navy is considering inclusion of a contract clause in future contracts requiring the contractor to give timely notice with regard to disruption and this will be pursued concurrent with the investigative action noted under Recommendation 4.

PRINCIPAL OFFICIALS OF
THE DEPARTMENT OF DEFENSE AND
THE DEPARTMENT OF THE NAVY
RESPONSIBLE FOR ADMINISTRATION OF ACTIVITIES
DISCUSSED IN THIS REPORT

	Tenure of office	
	From	To
<u>DEPARTMENT OF DEFENSE</u>		
SECRETARY OF DEFENSE:		
Melvin R. Laird	Jan. 1969	Present
Clark M. Clifford	Mar. 1968	Jan. 1969
Robert S. McNamara	Jan. 1961	Mar. 1968
ASSISTANT SECRETARY OF DEFENSE (INSTALLATIONS AND LOGISTICS):		
Barry J. Shillito	Feb. 1969	Present
Thomas D. Morris	Sept. 1967	Jan. 1969
Paul R. Ignatius	Dec. 1964	Aug. 1967
<u>DEPARTMENT OF THE NAVY</u>		
SECRETARY OF THE NAVY:		
John H. Chafee	Jan. 1969	Present
Paul R. Ignatius	Aug. 1967	Jan. 1969
Charles F. Baird (acting)	Aug. 1967	Aug. 1967
Robert H. B. Baldwin (acting)	July 1967	Aug. 1967
Paul H. Nitze	Nov. 1963	June 1967
ASSISTANT SECRETARY OF THE NAVY (INSTALLATIONS AND LOGISTICS):		
Frank Sanders	Feb. 1969	Present
Barry J. Shillito	Apr. 1968	Jan. 1969
Vacant	Feb. 1968	Apr. 1968
Graeme C. Bannerman	Feb. 1965	Feb. 1968