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**REPORT TO THE  
JOINT ECONOMIC COMMITTEE  
CONGRESS OF THE UNITED STATES**



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**Review Of Controls  
Over Shipyard Costs  
And Procurement Practices Of  
Newport News Shipbuilding And  
Dry Dock Company,  
Newport News, Virginia** B-133170

Department of the Navy

**BY THE COMPTROLLER GENERAL  
OF THE UNITED STATES**

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JAN. 13, 1972



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

B-133170

R Dear Mr. Chairman:

Your letters of August 18 and December 10, 1970, requested that we review the efforts by the Navy and its contractors to control ship construction costs at major private shipyards. As you know, on June 4 and August 23, 1971, we furnished you with data on some of your questions.

In this report we deal with the remaining questions relating to the adequacy of controls over shipyard costs and procurement practices as exercised by both the contractor and the Government. To answer these questions we reviewed the operations of two major private shipyards. This report concerns our review of the Newport News Shipbuilding and Dry Dock Company, Newport News, Virginia, a subsidiary of Tenneco Corporation. A report on our review of the facilities of the second shipyard, Litton Industries, Inc., at Pascagoula, Mississippi, will be furnished at a later date.

Official comments on the matters discussed in this report have not been requested or obtained from the contractor or the Navy. We plan to make no further distribution of this report unless copies are specifically requested, and then we shall make distribution only after your agreement has been obtained or public announcement has been made by you concerning the contents of the report.

Sincerely yours,

A handwritten signature in cursive script that reads "James B. Stacks".

Comptroller General  
of the United States

The Honorable William Proxmire  
Chairman, Joint Economic Committee  
Congress of the United States

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### ABBREVIATIONS

DCAA	Defense Contract Audit Agency
GAO	General Accounting Office
SUPSHIP	Supervisor of Shipbuilding, Conversion, and Repair

## CHAPTER 1

### INTRODUCTION

In accordance with letters of August 18 and December 10, 1970, from the Chairman, Joint Economic Committee, we have reviewed the adequacy of controls over shipyard costs and procurement practices as exercised by both the Government and the Newport News Shipbuilding and Dry Dock Company, Newport News, Virginia, a subsidiary of Tenneco Corporation.

Newport News, a major private shipbuilder, had billings of \$356 million for 1970, of which \$317 million, or 89 percent, was applicable to contracts for new construction, overhaul, and refueling of Navy ships. Our review concentrated on three Navy contracts for new ship construction which were to be completed during the next 5 years and which were valued at about \$935 million.

Generally it appears that much can be done by both the contractor and the Navy to reduce shipyard costs and, in turn, the cost to the Government. Our findings indicate that Newport News' budgeting system is ineffective in promptly pinpointing areas of the ship where overruns can develop and where greater cost control may be needed. The shipyard's procurement practices do not ensure that the most competitive prices are obtained, as evidenced by the very high percentage of procurements on which only one supplier competed for the award and by the Navy's withholding its approval of the contractor's purchasing system after reviews of the system in each of the last 2 years.

In our report of August 23, 1971 (B-133170), we stated that it was essential that the Navy exercise close surveillance over contractors' operations and costs since real competition was lacking for a significant part of the Navy's ship repair and construction program. Although the Navy has identified numerous deficiencies in the shipyard's operation, it has not been aggressive in following up to see whether the contractor has taken corrective action.

The questions asked in the Chairman's letters, together with our answers, follow.

CHAPTER 2

COST CONTROLS

"Are shipyards' budgeting and cost control systems adequate to ensure proper control of labor and material cost on Navy ships?"

We believe that the current budget and cost system of the contractor does not effectively ensure proper control of costs on Navy ships. Budgeted labor cost for a contract is established by department (trade) as well as by ship system, whereas budgeted material costs are established for an entire ship. Therefore a comparison of budgeted and actual costs which would include both material and labor is not possible below the ship level. To be meaningful the comparison should measure all elements of cost by recognizing physical progress at a sufficiently low activity or organizational level to provide the detail necessary to identify areas of potential overruns and underruns so that timely corrective action can be taken.

In addition, the contractor's system does not provide for segregating actual costs of change orders to permit comparison with budgets to evaluate change-order pricing and performance. The contractor contends that it is not feasible to maintain cost records for change-order work.

SYSTEM CURRENTLY IN USE

In proposing a price for negotiating a Navy ship construction contract, the contractor's cost engineers develop proposals which show a cost breakdown for labor, material, and overhead. The proposal summarizes costs for major ship structures.

Subsequent to the award of a contract, labor costs are broken down in greater detail for budget and cost accumulation purposes. The budgeted costs bear a relationship to the negotiated contract price. The breakdown is by ship system, such as rudders, as well as by department. A ship could have anywhere from 200 to 800 systems depending on the size and complexity of the ship. The work is done by

up to about 70 departments. Each system is assigned a cost number, and direct labor and direct material charges are collected at that level. The contractor, however, budgets material for the entire ship rather than for each system.

Neither the system budget nor the department budget is broken down at a lower level. More detailed estimates for a part of direct labor, however, are made after design drawings have been firmed up.

As the work is scheduled, each system is broken down into work packages, each representing a definite quantity of material to be manufactured, erected, or installed. A work package usually requires from 4 to 6 weeks of effort to complete. In terms of magnitude a submarine would have about 7,000 packages compared with 30,000 for a carrier. No cost estimate is made at this time, nor are actual costs accumulated at the work package level.

Work packages are detailed into specific tasks as described on work orders. The contractor estimates that roughly half the work orders require the use of direct labor where incentive work is not involved. For these work orders no estimate of direct labor is made. For incentive work labor hours are estimated for each work order after the detailed drawings have been prepared. For this reason the estimated hours shown on the work orders often are more realistic than the budgeted hours for the various ship systems, which are estimated without benefit of the detailed drawings. Budgeted hours are not adjusted on the basis of these estimates. Throughout the period of construction, actual labor hours, as accumulated by work order, are compared with budgeted hours by department and system.

The contractor has a contract change-order control system, the purpose of which is to identify needed engineering changes and to determine the effect on schedule, cost, weight, and other technical design considerations. The system is oriented primarily toward ensuring full consideration of all technical factors bearing on the change rather than toward providing management control of the related costs associated with the change. The contractor's system does not provide for segregating actual costs of change orders.

## GAO evaluation

The contractor's budget and cost control system contains the elements which would permit comparisons to be made of estimated and actual costs but does not permit pinpointing areas of the ship where overruns are developing so that management can direct its attention to those cost areas which may need greater control.

For example, since material cost is budgeted for the entire ship only, not at the system level, the comparison which the contractor makes of budgeted and actual costs at the system level is not complete. The contractor may pay more or less for a pump or other part than the related estimated price included in the overall budget for material, but only the material variance for the entire ship--not the variance for the individual part--is identified.

Another weakness in the contractor's cost control is the lack of separate identification of actual costs of change orders. Contractor officials informed us that they had studied on several occasions the feasibility of accurately segregating and accounting for such costs and that, under the terms of a contract for construction of two aircraft carriers, the feasibility was again under study. They added that, to date, these studies indicated that a system to account separately for change-order costs would be costly and probably would result in incomplete and unreliable cost data.

It seems essential that the Navy have a reasonable cost estimate before authorizing changes in work and that the prices for the work involved be negotiated before the work is started. Where feasible the actual costs of change-order work should be maintained. This would permit a comparison of actual costs with estimates to provide a check on performance under change orders. We recognize that there are situations where it may be difficult to break down actual costs for a change from the costs for the remaining part of the original work ordered. In these cases it is particularly important that the change-order prices be negotiated before work is started.

REVISED SYSTEM

The contractor currently is designing and implementing a revised labor-planning and cost system which will add control on the basis of space. Contractor officials told us that they planned to use this system on future construction contracts but not on existing contracts and that implementation began early in 1971 under a letter contract for the DLGN-38 Guided Nuclear Frigate. The frigate will be divided into 20 structural sections, 50 design areas, and 110 space control units. Budgeting for labor and collecting labor cost under the revised system will be by shipyard department and space control unit. A ship coordinator will be assigned to each area and will be provided with the plans, budgets, schedule, material, and allocation of manpower. Although variances between budgeted and actual costs will be tabulated only at the space control unit level by department, estimates and actual costs by work package will be available for an in-depth analysis of variances.

The contractor has established a Progress Analysis and Manpower Planning Division. According to contractor officials this division initiated a procedure for measuring the construction progress of a ship. In measuring the progress under each contract, the division will gather direct-labor information by contract from the various departments to determine the percentage of completion. This percentage will be verified to the physical progress of each department. Man-hours expended will be compared with the estimated man-hours to measure the accuracy of estimates. The division also will establish standard manpower curves for future projects.

Since the revised system had not been installed at the time of our review, we could not evaluate its effectiveness.

DEFENSE CONTRACT AUDIT AGENCY  
AND NAVY REVIEWS OF THE CONTRACTOR'S SYSTEM

The Defense Contract Audit Agency (DCAA) reviewed the budgeting and cost control system in 1970 and reported that the system did not adequately disclose variances between actual and budgeted costs to permit timely corrective action to be taken. It reported also that the system should

extend to the lowest level of supervisory responsibility so that performance could be measured.

DCAA reported further that reviews by the contractor's internal audit staff were concerned primarily with financial matters. It recommended that the staff be increased and that emphasis be placed on management-type reviews.

A Navy audit team reviewed the contractor's operations. Following are some of the findings included in its March 1971 report.

1. Budgets and incentives at the working level are not related to contract price. It is possible to meet all working-level (apparently work order level) budgets and still overrun a contract because contract budgeting stops at the department level.
2. Labor and material costs are not related to budgets in a way that identifies potential overruns or underruns as work progresses in time for corrective action to be taken.
3. Existing cost control reports do not promptly identify budget variances and the factors giving rise to the variances.

A Navy official advised us that suggestions for improvement had been made to the contractor and also informed us that the contractor had initiated corrective actions. He advised also that the Navy planned to follow up on the actions.

#### CONTRACTOR'S INTERNAL REVIEWS

The contractor has an internal audit staff of 11 and plans to increase the staff to 14 by June 1972. We discussed with the internal auditor his findings covering calendar years 1969 and 1970. The findings indicate that the internal audits were concerned primarily with financial matters dealing with payroll, bank reconciliations, vouchers, purchases, scrap sales, etc., rather than with cost controls.

We believe that the internal audit staff would more effectively assist management if it would broaden the scope of its audits to include reviews of cost controls.

"Are there adequate contractor and Government controls over labor and material charging practices?"

The contractor has established procedures for controlling charges of material and labor to specific systems of a ship. The contractor's organization includes a section responsible for verifying the accuracy of labor charges. Government control is exercised through review and analysis of the contractor's cost-charging practices by the Supervisor of Shipbuilding, Conversion, and Repair (SUPSHIP) and DCAA.

On the bases of our test of the contractor's system for charging costs and our review of the Government's surveillance over the charging procedures, we believe that controls over the charging of labor and material generally are adequate. Two exceptions are the failure of the contractor's system to account for idle time and the absence of an internal control procedure which would provide for the results of floor checks to be reported to a level higher than that of foreman.

#### CONTRACTOR'S MATERIAL-CHARGING PRACTICES

The contractor's policy on material charging provides that material that can be reasonably identified with a particular job order should be charged directly. Material consumed in routine shop and plant operations or material used for repairs and maintenance of buildings, machinery, tools, or other plant equipment is charged to departmental expense accounts and is distributed through overhead.

##### Direct purchase

Purchase orders are identified by ship, cost, and sequence numbers. A purchase order number is placed on all correspondence, invoices, packages, and shipping papers related to the purchase and is stenciled on the material. The cost of the purchase is charged to the appropriate ship system, such as rudders.

### Stores issues

The contractor issues, in addition to material purchased specifically for a ship, material from stores to the various departments on the basis of a requisition signed by an authorized person. Stores issues include common-type items, such as pipe, fittings, and paint, which are described on the work order for a specific task. The cost of a stores issue is charged to the ship by system.

### Excess material

During the performance of a contract, unused stores materials are required to be returned for credit to the contract during the month that such materials are found to be excess.

Unused direct-purchase materials usually are returned at completion of the contract. Recently the contractor has attempted to identify surplus prior to contract completion, such as surplus occurring as a result of a change order. When this surplus is identified, whether during or at completion of the contract, a list of excess materials is prepared.

The list is reviewed by design departments which determine any one of four different dispositions: (1) forwarding to the ship such items that may, in fact, be components required for the ship or be spare parts, (2) transferring the material to a new ship and crediting the completed ship, (3) placing the item in stock if possible and crediting the completed contract, and (4) designating as contract surplus other items for which there is no known present or future need.

The contractor sends the list of contract surplus items to SUPSHIP where it is reviewed for reasonableness. Where SUPSHIP believes that the surplus arose from the contractor's improper action, it will consider this fact in final negotiations.

### DCAA reviews

DCAA made six reviews of the contractor's material control practices during the year ended May 31, 1971. The results of these reviews were reported to the Navy, and most of the findings were discussed with contractor personnel. DCAA found no mischarging of cost between ships and made no comment as to lack of control.

### GAO evaluation

We selected 177 purchase orders to determine whether material costs had been properly charged. We traced purchase order data through the contractor's records and to progress billings to the Navy. Also we physically verified the existence of materials purchased, except for some items whose identification had been lost in installation. Our verification of material charges and our physical verification of material showed no deficiencies.

We reviewed the stores issues procedures and compared recorded amounts with progress billings to the Navy. To test the stores issues procedures and cost-charging practices, we analyzed the manner in which welding rods were handled. Our tests disclosed no mischarging.

## CONTRACTOR'S LABOR-CHARGING PRACTICES

Labor hours are accumulated for each ship by system and by department. The contractor's control of cost charging for labor is placed primarily with the foreman who is responsible for the performance of work of from four to 20 workers and the proper charging to cost numbers. Time is charged for 21,900 workers by use of gate cards, data pathing, or time sheets.

The contractor has a labor incentive plan under which productive direct labor is compared with predetermined estimated hours specified on work orders for performing a task. The predetermined hours are based on standards, work sampling, similar work done previously, and best judgment in the case of nonrepetitive work. Productive direct-labor workers receive a 100-percent share of the savings based on the hours by which the predetermined hours are underrun. On the other hand, piece-rated workers, such as welders, are paid on the basis of quantity produced.

### Gate cards

Each of about 13,100 employees receives a gate card as he enters the yard. The employee records his name and shop number on the card and presents it to his foreman. The foreman assigns tasks and at the end of the day records the time by cost number on the card.

### Data pathing

Time for about 3,300 employees is gathered on 73 data-pathing machines throughout the yard and is recorded on one central computer. When an employee enters the yard, he punches in at one of the machines by using his photo identification badge. He then reports to his foreman and is assigned a job and is given a prepunched card containing the cost number for the job. The employee then again punches the machine using his badge and the card and thereby records his assignment to the cost number. If he changes jobs during the day, he receives another card and repeats the procedure. The machine automatically checks him out at the end of the shift.

### Time sheets

Approximately 5,500 salaried employees record their time manually on biweekly time sheets and present them to their supervisors for approval.

### Data Collection and Control Department

The Data Collection and Control Department has six men assigned to check the reliability of labor charges by interviewing selected individuals three times daily and verifying the results against a printout of labor charges. In addition, the Navy requires that charges against cost numbers be edited to ensure that noncurrent cost numbers are not charged. The contractor has assigned nine men to this function. Each review team, however, reports the results only to the foreman responsible for the charges. The department has about 70 piecework counters who physically check each welder to verify the inches of weld made during his shift.

### DCAA reviews

DCAA made seven reviews of the contractor's labor charges for the year ended May 31, 1971. The results of these reviews were reported to SUPSHIP and discussed with contractor personnel. Some of the reported findings follow.

In its June 1970 review of timekeeping procedures, DCAA reported that there was no accounting for idle time and recommended that such time be charged to a separate code. The contractor told us that this would be impracticable because benefits would not justify the cost of such accounting.

DCAA reported also that in its floor checks it had discovered isolated cases of mischarging of labor cost but no instances of flagrant or widespread mischarging. As suggested by DCAA the contractor has reclassified consistently for all departments certain direct labor operations, such as those performed by indoor crane operators, as indirect labor. Also after DCAA raised a question about the system of allocating overhead on the basis of total direct labor dollars, including overtime and night premium costs, the contractor agreed to exclude premium costs from the base starting in 1972.

DCAA has just begun a review of labor controls built into the computer. This review is being performed by a DCAA specialist in the data processing field.

### GAO evaluation

We tested the contractor's system for charging labor and found that generally it was satisfactory. To obtain an understanding of the system, we discussed labor-charging controls with contractor and Navy personnel and reviewed the contractor's instructions. We observed employees and supervisors in their recording and approving of labor charges and accompanied contractor personnel in their verification procedures. We observed also a floor check by DCAA.

We found that the contractor did not account for idle time even where the idle time occurred between assignments. For example, under the data-pathing system, an employee punches in when reporting to work in the morning. When he punches the machine again after he has been assigned a job code, his time for that job code reverts to his starting time. The idle time between his reporting to work and his starting an assignment is charged to the job. Similarly time between assignments during the day is charged to the job.

We believe that idle time should be reported or accounted for in order that its extent and significance may be determined and that steps may be taken to control it as necessary.

We noted some instances of improper charging between cost numbers. Each charge, however, was made to the proper ship so that the total cost to the Government was not affected.

We accompanied contractor personnel on their checks of charges to cost numbers. We found that the personnel followed through and obtained corrections for any discrepancies noted. A report of the discrepancies is made to the foreman. We believe that it is essential for proper internal control that the reports made by the review teams on the results of their floor checks be reported to a management level higher than that of foreman. Also it appears to us that the work

of the nine men assigned to detect charges against noncurrent cost numbers could be performed more economically by a computer.

## CHAPTER 3

### SHIPYARD CONTROLS OVER PROCUREMENT

The questions on this subject are concerned with the shipyard's efforts to obtain competition in subcontracting and, in the case of noncompetitive subcontracts, to comply with the provisions of the Truth-in-Negotiations Act.

The specific questions are restated below along with the information we obtained.

"In awarding subcontracts do the shipyards employ safeguards comparable to those used by the Government in awarding prime contracts?"

In general, the contractor's procurement policies, as prescribed in its procurement manual, incorporate many of the safeguards used by the Government, such as competitive solicitation of bids, negotiation of prices when competition is not considered present, obtaining cost or pricing data in the circumstances prescribed by Public Law 87-653 (the Truth-in-Negotiations Act), and approval of specific procurements by progressively higher levels of authority depending on the amount of the purchase. One exception we noted was the lack of a policy to test the market before exercising contract options to ascertain whether prices lower than the option price could be obtained.

In addition, our test of purchase transactions showed that Newport News could obtain increased competition by improving its procedures for establishing and updating lists of suppliers so as to have greater assurance that it was soliciting a sufficient number of qualified sources. Both of these matters are discussed in detail in connection with the next question.

"Do shipyards seek to establish maximum practicable competition in subcontract procurements?"

Newport News purchasing procedures do not ensure that maximum practicable competition in subcontract procurements will be established. In a number of cases in which the contractor had solicited fairly large numbers of sources, only one qualified bid was received.

The contractor does not publicize proposed purchases to obtain additional sources. The Commerce Business Daily, for example, is a Government publication which is available at no charge to prime contractors, as well as Government procurement agencies, to make their requirements known to the public. Suppliers may express their desire to compete by contacting the requiring activity.

In most cases buyers rely on lists of suppliers compiled from the history of prior procurements, catalogs, requests from vendors to be placed on the lists, and their personal awareness of potential sources. Two buyers told us that they updated their bidders lists by contacts with vendors and by identification of additional sources through publications.

During 1970 Newport News issued 33,000 purchase orders for materials and services costing \$125 million. On a statistical-sampling basis, we selected 177 purchase orders for detailed analysis from 5,700 purchase orders with aggregate prices of \$68 million under three prime contracts. Following is the contractor's classification and our related sample.

	<u>Purchase orders</u>		
	<u>Amount</u>	<u>GAO sample</u>	
		<u>Amount</u>	<u>Number</u>
Awarded to lower of two or more acceptable responsive bidders	\$ 55,415,000	\$ 6,643,000	77
Awarded under one of two or more identical bids (note a)	9,096,000	2,055,000	15
Awarded to only source	52,043,000	9,086,000	53
Delivery schedule, small orders, and miscellaneous categories	<u>9,071,000</u>	<u>21,000</u>	<u>32</u>
	<u>\$125,625,000</u>	<u>\$17,805,000</u>	<u>177</u>

<sup>a</sup>Most of these are purchases of high-yield steel.

LIMITED NUMBER OF QUALIFIED SOURCES SOLICITED

We found that the contractor had not exerted sufficient effort to establish maximum practicable competition. For example, the contractor awarded nine purchase orders amounting to \$1,254,505 to single qualified bidders but did not solicit other potentially qualified suppliers.

For seven purchase orders the contractor received one or more responses; however, only one qualified supplier bid in response to each solicitation. Several of the purchase orders were for more than one item. For most of the items, we found that little data were available in the contractor's procurement files as to the qualifications of suppliers and their interest in competing for the orders. Action was not taken to establish the qualification of other potential suppliers.

Buyers have available national publications which list suppliers for given commodities. We compared the suppliers solicited for the nine orders with the suppliers listed in one such publication for the specific commodity and found that there were between 15 and 290 additional suppliers not previously solicited. We asked each of the buyers why he had not considered these other suppliers. The general reply was that the buyer had solicited only suppliers on the bidders lists because of the difficulty in finding additional suppliers who could manufacture according to Government specifications. Examples follow.

A purchase order was awarded in June 1970 at a price of \$116,500 for air-operated hoists for the carrier CVAN-68. The most recent purchase for this item was in May 1966 for the carrier CVA-67. At that time eight suppliers were solicited. Four declined to bid because they did not manufacture the item, two declined to bid with no explanation, and another submitted an incomplete bid. Only one submitted a qualified bid and was awarded the purchase order. In June 1970 the contractor had a requirement for these hoists for the carrier CVAN-68. It solicited bids from four of the above eight suppliers and from six additional suppliers. Of the 10 solicited, nine declined to bid, seven on the basis that they did not manufacture the item and two because the required equipment was the standard product of another vendor.

The only bid received was from the same manufacturer that had supplied the air hoists for the CVA-67.

One national publication that we examined showed that many other firms not previously solicited by the contractor manufactured air hoists. The buyer for this item said that he felt that he had solicited a sufficient number of sources for this item although it was possible that some of the suppliers listed in the publication, but not solicited, could supply the air hoists. He said that it was difficult to find a supplier who could manufacture this item in accordance with military specifications.

Another purchase order, awarded in November 1970, was for air-operated valves costing \$7,522. The most recent prior purchase of this item was in November 1969. Both the 1969 and 1970 purchases were for the guided missile frigates. For the 1969 purchase five sources were solicited. Three declined to bid, two without explanation and one because it did not manufacture the required valves. Another submitted an unacceptable bid. The sole qualified bidder was awarded the purchase order. For the purchase made in 1970, five sources also were solicited, two of those solicited in 1969 and three additional firms. Four declined to bid, one without explanation and three because they did not manufacture the item. The bid was received from the recipient of the 1969 award, and the 1970 order was placed with that firm.

The publication lists many additional sources of supply for air-operated valves. The buyer stated that only a few of these sources had ever been solicited for valves of that nature. He also indicated that, on the basis of his buying experience, he felt that some of the sources not solicited would not or could not supply those valves.

We feel that, where practicable, additional efforts should be made to identify qualified sources. Where the qualification of none or only one supplier is known, an effort to determine qualification could be made in advance so that solicitation could be made from qualified sources. A method that could be used is sending preinvitation notices to suppliers listed in national publications, advising of the planned purchase and requesting notification of qualification and interest in quoting. A qualified bidders list then could be prepared from the responses and solicitations could be made from that list.

FAILURE TO TEST MARKET  
PRIOR TO EXERCISE OF OPTIONS

Six of the purchase orders included in our sample were awarded by Newport News through the exercise of options which had been in effect from 15 to 24 months. Despite these extensive periods, the market was not tested to determine whether other suppliers could offer prices lower than the option price. The Armed Services Procurement Regulation provides that Government buyers ascertain whether more favorable prices are obtainable before exercising the option.

For example, in September 1968, Newport News awarded a purchase order for eight pumps at a price of \$104,310 to be used on the carrier CVAN-68. The contractor had received quotes from two qualified sources, and the low bidder was awarded the purchase order which included an option to buy an additional eight pumps for \$91,143.

In September 1970 Newport News exercised this option and purchased eight additional pumps for the carrier CVAN-69. Although 24 months had elapsed since the last purchase, quotes from other suppliers were not solicited for comparison with the option price.

We believe that the contractor should request additional quotations for comparison with the option price when an option has been in effect for an extended period of time.

"Is there evidence of undue subcontracting by shipbuilders to other subsidiaries of their parent firms?"

We did not find evidence of undue subcontracting by Newport News to its affiliated companies. Of 5,700 purchase orders amounting to \$68 million awarded under three selected contracts, only 106 purchase orders valued at \$1.3 million were awarded to four Tenneco affiliates.

We reviewed 12 purchase orders on a test basis and found that the affiliates were low bidders for nine purchase orders and were sole bidders for two. The 12th order went to a subsidiary which was furnishing the same item to the

Electric Boat Division of General Dynamics Corporation, the lead yard for the type of vessel being constructed.

The largest single award, for butt weld fittings, was made to Gas Equipment Engineers, Inc., an affiliate, in the amount of \$80,467. Gas Equipment was the lower of two bidders.

"What percentage of subcontract procurements are sole-source?"

Under the contractor's classification about 42 percent of the \$125 million of subcontracts let in 1970 by Newport News were let on a sole-source basis. The contractor classifies as sole source all procurements made when only one bid was received compared with the Armed Services Procurement Regulation classification of sole source for purchases of products which can be obtained from only one supplier. The contractor's classification of these sole-source procurements follows.

<u>Contractor's reason for sole-source purchase</u>	<u>Amount (millions)</u>	<u>Percent of total purchases</u>
Same supplier solicited to obtain duplication of existing equipment	\$27.5	22
Proprietary item, by name, design, or specification	12.9	10
Only qualified bidder	7.4	6
Only qualified manufacturer	3.5	3
Other	<u>.7</u>	<u>1</u>
	<u>\$52.0</u>	<u>42</u>

"Are the shipyards in full compliance with the Truth-in-Negotiations Act?"

We found that Newport News had attempted to obtain cost or pricing data where required by the Truth-in-Negotiations Act in each of the 65 procurement actions in excess of \$100,000 that we examined. These actions were all the subcontracts in excess of \$100,000 that were included in our random selection of 177 purchase orders awarded in 1970

Some steel contractors refused to supply the data after submitting apparent identical bids. These refusals were referred by Newport News to the Navy which made additional efforts to obtain the data. The Navy consented to the placement of subcontracts on high-yield steel, even though it had been unsuccessful in its efforts to obtain cost data. In granting the consent the contractor was advised that the consent did not release it of any obligation that it might otherwise have under the contract.

At the request of the Navy, the contractor on March 24, 1970, asked three major steel suppliers their reasons for not furnishing cost or pricing data. One answered that the high-yield steel was a catalog item priced in the same manner as all other alloy steel products. A second supplier saw no basis for furnishing cost data on procurements made by prime contractors when the Government consistently had not requested such data on its direct procurement for more than the last 2 years. The third cited adequate price competition for its refusal to submit cost data.

We are separately reviewing high-yield steel (HY80 and HY100) procurements made not only at Newport News but also at the Electric Boat Division of General Dynamics Corporation, Ingalls Nuclear Shipbuilding Division of Litton Industries, and the Defense Industrial Supply Center. A copy of our report on this review will be furnished to you.

## CHAPTER 4

### NAVY'S SURVEILLANCE OVER THE SHIPYARD'S PROCUREMENT AND COST CONTROL PRACTICES

Two questions were raised concerning Navy surveillance of shipyard operations.

"Does the Navy maintain effective surveillance over shipbuilders' procurement, cost control, and cost charging practices?"

"Is closer Navy surveillance of shipyards' operations needed?"

In our report of August 23, 1971 (B-133170), we stated that real competition was lacking for a significant part of the Navy's ship repair and construction program and that, for this reason, it was essential that the Navy exercise close surveillance over contractors' operations and costs to ensure that shipyards were being properly managed and that the Government paid only those costs necessary for the efficient performance of the contract.

SUPSHIP at Newport News is the organization responsible for administering the contracts at the shipyard. In this capacity it exercises surveillance over the contractor's operations, which consists of a continuing analysis and evaluation of the shipyard's contracting policies, practices, records, and reports, including verification and enforcement of corrective action by the contractor to ensure conformance to contractual requirements. To carry out this surveillance, SUPSHIP, as of December 31, 1970, had a staff of 361 civilians and 38 military. Of the total, 278 were involved in direct surveillance of the contractor's operations, mainly in the areas of quality assurance, planning, and control of material. There were 36 others directly involved in surveillance over procurement, cost control, and cost charging. The remaining personnel were involved primarily with administrative matters.

Newport News, by virtue of the size and types of contracts it has with the Navy, is required to have its purchasing system reviewed and approved annually. The objective of

the review, an Armed Services Procurement Regulation requirement, is to ensure that the contractor's purchasing practices are efficient. As part of this review, an evaluation is made of the contractor's efforts to obtain competitive prices in its subcontracting. When a purchasing system is not approved, a clause is to be inserted in certain prime contracts requiring the contractor to submit certain proposed subcontracts (generally those which exceed \$100,000) to the contracting officer for approval.

Approval of the contractor's purchasing system was withdrawn after reviews by SUPSHIP in May 1969 and again in June 1970 when it was determined that the system did not ensure that materials would be obtained at the lowest price consistent with quality and delivery requirements.

SUPSHIP surveillance is augmented by DCAA, Newport News, which on December 31, 1970, had a staff of 15 auditors. A major part of the DCAA surveillance effort is in the area of cost control. In addition to making its usual preaward and postaward audits, it makes periodic management and financial-type audits. These audits are scheduled on a cyclical basis of 12, 24, or 36 months depending on their importance. During fiscal year 1971 it scheduled and performed audits in such areas as performance and financial control, material, labor, overhead, and Government-furnished property. A report on its findings, as well as on action planned or taken by Newport News, was sent to SUPSHIP who maintained contact with the contractor to determine the extent and propriety of action taken.

To improve surveillance over shipyards, the Naval Ship Systems Command recently has increased and has reorganized the staff at the SUPSHIP office.

SUPSHIP, in turn, has established a position of procurement analyst and has plans for an additional procurement analyst and two pricing analysts. These persons will be reporting to the assistant contracts officer. In addition, a business review staff consisting of a supervisory business analyst, an industrial engineer, and a financial analyst was established. This staff will be responsible for maintaining surveillance over the contractor's cost and labor control and will report to SUPSHIP. These positions have

been established only recently; therefore, we cannot comment on the effectiveness of these changes.

#### GAO evaluation

Closer surveillance of the contractor's subcontracting practices appears necessary. As discussed on pages 14 through 17, the contractor has not always made the necessary effort to identify additional sources of supply. Such action, we believe, would reduce the number of purchases being made on an only-source basis. We believe that SUPSHIP should more closely review the awards submitted for approval where effective competition has not been obtained and determine whether sufficient action was taken by the contractor to obtain competition.

Concerning the submission for prior approval by SUPSHIP of proposed subcontracts, we found that this requirement had not been made part of one of the three prime contracts which we examined. The Naval Ship Systems Command attributed the omission to an oversight. The result was that none of the purchase orders awarded by Newport News were submitted for approval.

The reviews by the Navy and by DCAA showed that improvements in the shipyard's budget and cost control procedures were needed. We believe that more aggressive follow-up action by SUPSHIP is needed to ensure that the deficiencies in need of correction are acted on by the contractor.

