



UNITED STATES GENERAL ACCOUNTING OFFICE  
WASHINGTON, D.C. 20548

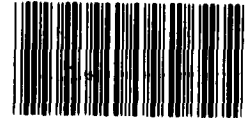
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PROCUREMENT, LOGISTICS,  
AND READINESS DIVISION

B-203560

AUGUST 24, 1981

The Honorable Caspar W. Weinberger  
The Secretary of Defense



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Subject: The Navy Can Reduce the Cost of Ship  
Construction If It Enforces Provisions of  
the Contract Escalation Clause (PLRD-81-57)

Dear Mr. Secretary:

We have reviewed procedures and practices Navy shipbuilding contractors use to compute material escalation costs on fixed-price incentive contracts which contain the cost index material escalation clause. The objective of this review was to determine if Navy contractors are computing escalation costs as specified in the contract clause.

The Navy includes in fixed-price-type contracts provisions which protect shipbuilders from inflation by making escalation payments relating to cost increases beyond the shipbuilders' or the Navy's control. This protection is especially needed in shipbuilding contracts because of the length of time involved in constructing a ship.

When cost-reimbursement-type contracts are used, the Navy pays the shipbuilder the actual costs incurred. These costs automatically account for material and labor costs changes due to inflation. However, fixed-price-type contracts (generally used for shipbuilding) contain an escalation clause to reimburse shipbuilders for costs attributed to inflation.

We reviewed procedures, practices, and computations of escalation on five contracts awarded by the Navy to the following contractors: one each to Bath Iron Works Corporation, Bath, Maine; the Boeing Company, Seattle, Washington; and Newport News Shipbuilding and Dry Dock Company, Newport News, Virginia; and two contracts awarded to Todd Pacific Shipyard Corporation, Seattle, Washington. The five contracts have estimated material costs of \$424.7 million, of which we estimate the Navy will pay \$162.6 million for escalation.

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We selected these Navy contractors because they were performing under fixed price incentive contracts which contain the cost index clause. We were told that the other services do not use the cost index clause.

Detailed information on our findings is provided in the enclosure. In summary, we found that Boeing, Newport News, and Todd are not correctly interpreting and applying the cost index clause. The contractors are overstating the escalation costs by delaying the computation of escalation. As a result, cost indexes for subsequent (and generally higher) periods are being applied to costs incurred and invoiced during earlier periods. We estimate that contractors will receive \$2.4 million of excess payments for escalation costs on four of the five contracts reviewed.

#### RECOMMENDATIONS

We recommend that you direct the Secretary of the Navy to

--recover material escalation overpayments caused by the contractors' failures to compute escalation costs based on invoice receipt dates and

--revise the cost index material escalation clause to include the full amounts of all billings received from subcontractors, including retention on any progress payments made, regardless of whether such retention is shown on the bill.

#### AGENCY AND CONTRACTOR COMMENTS

Naval Sea Systems Command Headquarters officials agreed with our report and agreed to correct the deficiencies noted. In addition, all Supervisors of Shipbuilding (Navy contract administrators) offices that we visited, except the Newport News office, agreed with our recommendations and have begun corrective actions. Defense Contract Audit Agency Headquarters officials said that the interpretation of the clause was the responsibility of the contracting agency.

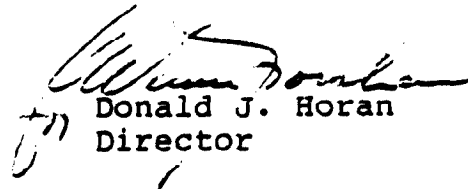
Boeing, Newport News, and Todd officials disagreed with our interpretation and application of the cost index clause. Responses to their comments are provided in the enclosure.

As you know, section 236 of the Legislative Reorganization Act of 1970 requires the head of a Federal agency to submit a written statement on actions taken on our recommendations to the House Committee on Government Operations and the Senate Committee on Governmental Affairs not later than 60 days after the date

of the report and to the House and Senate Committees on Appropriations with the agency's first request for appropriations made more than 60 days after the date of the report. We would appreciate receiving copies of these statements.

We are sending copies of this report to the Secretary of the Navy; the Director, Defense Contract Audit Agency; the Director, Office of Management and Budget; the Presidents of the Boeing Company, Newport News Shipbuilding and Dry Dock Company, Todd Pacific Shipyards Corporation, and Bath Iron Works Corporation. We are also sending copies to the Chairmen, House Committee on Government Operations, Senate Committee on Governmental Affairs, and House and Senate Committees on Appropriations and on Armed Services.

Sincerely yours,

  
Donald J. Horan  
Director

Enclosure

THE NAVY CAN REDUCE THE COST OF  
SHIP CONSTRUCTION IF IT ENFORCES PROVISIONS OF  
THE CONTRACT ESCALATION CLAUSE

BACKGROUND

The Navy includes in fixed-price-type contracts provisions which protect shipbuilders from inflation by making escalation payments relating to cost increases beyond the shipbuilders' or the Navy's control. Navy shipbuilding contracts are usually long term, averaging from 4 to 10 years. As a result, economic changes over the life of the contract greatly affect the cost to the contractor and to the Government.

When cost-reimbursement-type contracts are used, the Navy pays the actual costs incurred. These costs automatically account for actual material and labor cost changes due to inflation. However, fixed-price-type contracts (generally used for shipbuilding) contain an escalation clause to reimburse shipbuilders for inflation. Without escalation clauses, the shipbuilder would have to include estimates of inflation in its bid or proposal price. If these estimates were included in the contract price and the rate of inflation exceeded the estimate, the shipbuilder would have a reduced profit or a loss. If, on the other hand, the rate was less than estimated, the shipbuilder would receive a windfall profit and the Navy would pay unreasonably high prices.

Since 1962, the Navy has developed and used special escalation clauses for its fixed-price-type shipbuilding contracts. These clauses provide for the computation of escalation payments using the shipbuilders' average inflation experience as shown in indexes of the shipbuilding industry. The indexes are prepared by the Bureau of Labor Statistics (BLS).

Before 1975, shipbuilding escalation clauses provided for automatic quarterly escalation payments based on (1) changes in the material and labor indexes and (2) quarterly material, labor, and overhead expenditure rates predetermined when the contract was awarded. These clauses excluded a certain percentage of total contract costs which the Navy considered unaffected by inflation.

In 1975, the Navy began using new escalation provisions (called the cost index method) to give shipbuilders a more equitable escalation price adjustment. The Navy continues to base the payment computation on changes to the indexes but uses the shipbuilder's actual expenditures for a monthly or semimonthly period, rather than predetermined expenditures.

The cost index method requires contractors to compute material escalation on the full amount of material costs billed by vendors (subcontractors) no later than the monthly period of receipt of billings by contractors.

The following example illustrates the importance of the escalation clause. First, assume that a contractor has a fixed price incentive contract with a target cost of \$150,000, a target profit of \$15,000, and a target price (target cost plus target profit) of \$165,000, and, if actual cost is less than target cost, the contractor receives 30 percent of the difference between target cost and cost incurred. Then assume that the contractor incurred \$150,000 of cost. Without an escalation clause, the contractor would receive only the target price of \$165,000. With an escalation clause, the contractor would receive (based on a 20.59 percent change in the index) \$174,266. A breakdown of the costs is shown below:

Cost incurred	\$119,115
Escalation	30,885
Target profit	<u>15,000</u>
Target price	\$165,000
	<u>a/9,266</u>
Total	<u>\$174,266</u>

a/This figure represents 30 percent of \$30,885 because cost incurred (\$119,115) is \$30,885 less than target cost (\$150,000).

For escalation computation to reflect the most realistic escalation cost, escalation on costs incurred must be computed using the BLS index that approximates the month that costs are actually incurred. Using BLS indexes for months beyond the month that costs are incurred results in excessive amounts of cost being allocated to escalation, since the BLS index is usually increasing. Consequently, this would result in the Government paying excessive amounts for escalation and the contractor receiving unearned profits.

#### RESULTS OF REVIEW

Of the four contractors reviewed, we found that only Bath was computing escalation costs in accordance with the contract clause. Boeing, Newport News, and Todd were overstating escalation costs because they did not use the BLS index for the month in which they received subcontractors' invoices. Instead, they used the index for the month in which they recorded the invoices

on their accounting records. In addition, these contractors did not always compute escalation on the full amount of all invoices received. We estimate that the contractors will receive \$2.4 million of excess payments for escalation costs, as shown below:

Excess payments for escalation

<u>Contractors</u>	Due to use of incorrect <u>BLS index</u>	Due to exclusion of <u>material costs</u>	<u>Total</u>
----- (000 omitted) -----			
Boeing	\$202	\$ 121	\$ 323
Newport News	52	1,700	1,752
Todd	<u>50</u>	<u>293</u>	<u>343</u>
	<u>\$304</u>	<u>\$2,114</u>	<u>\$2,418</u>

Contractors compute escalation costs based on BLS index in effect when invoices are recorded rather than when invoices are received

Boeing, Newport News, and Todd compute material escalation costs based on the BLS index in effect when they record invoices in their accounting records, including progress payment billings from subcontractors, rather than the BLS index in effect when they receive invoices. Some delay in recording invoices and computing escalation costs is justified. For example, if a company's billing cycle ends on the 27th of each month, an invoice received on the 28th day would not be included in escalation computations until the 27th day of the next month. However, we noted some cases where invoices were not recorded and escalation was not computed for up to 6 months after receipt. These delays caused by circumstances, such as administrative procedures and inspection and acceptance, although justified, should not be used to extend the escalation period. The receipt date should be used, as stated in the escalation clause, to compute escalation.

Although Bath experienced similar circumstances as Boeing, Newport News, and Todd, it included in its records the invoice receipt date and the recording date. Bath then used the receipt date to compute escalation costs.

Our sample, during 5 randomly selected months, of 97 percent of the direct material charges under Navy/Boeing contract N00024-77-C-2051 disclosed that the use of outdated indexes in computing material escalation costs resulted in a \$33,700 escalation overstatement. Using the sample, we estimate the total overstatement to be \$202,000. Boeing officials disagreed with our interpretation of the material escalation clause. They said

that the receipt date is the date the billings, including progress billings, are recorded in accounting records for payment, not when they are actually received. We believe that the date the billings are actually received is the date that should be used to compute escalation since it corresponds more closely with the date costs are incurred and escalation is stopped. Supervisor of Shipbuilding, Conversion, and Repair (SUPSHIP) officials at Boeing agreed with our interpretation and have begun corrective actions.

Our sample, during 5 randomly selected months, of 81 percent of the direct material charges to one of five ships under Navy/Newport News contract N00024-76-C-2031 disclosed that the delay in computing material escalation resulted in a \$4,300 escalation overstatement. Using the sample, we estimate the total overstatement to be \$52,000.

Newport News officials and a SUPSHIP official at Newport News said that the contract's material escalation clause does not require a contractor to compute escalation based on the date the contractor receives the invoice. According to this official, the clause was not intended to be interpreted literally. As stated above, we believe that the receipt date is the date that should be used to compute escalation since it more accurately reflects the date that costs are incurred and escalation stops.

At Todd, we randomly sampled 40 percent of the direct material charges over \$1,000 to 1 of 12 ships the activity is constructing under Navy contracts. We found that Todd computes material escalation based on the BLS index in effect when it records the invoices, rather than on the BLS index in effect when it receives the invoices. This practice resulted in a \$23,000 material escalation overstatement. Using the sample, we estimate the total overstatement to be \$50,000. Todd officials disagreed with our interpretation.

Escalation is not computed on all  
monthly material invoices received

Boeing and Newport News do not pay their subcontractors the full amount of invoices billed. Instead, they withhold a portion of the invoice amount (retention) to assure completion of the work. Escalation on all retentions is computed and paid upon receipt of the subcontractors' final invoices based on the BLS index in effect at the time of final billing.

Our analysis of the unrecorded retention on progress payments made to the subcontractor having the largest dollar contracts with Boeing disclosed that failure to record the retention had resulted in a \$121,000 material escalation overstatement through September 1980. Since this subcontractor has not made final billing, the actual dollar overstatement will be higher when the work is completed.

Boeing officials said that since the subcontractors receiving progress payments only bill for the amount they will be paid at the time of the billing (cost incurred less 20 percent retention), this is the full amount of the billing. The Boeing subcontractors do not show the full amount earned less retention on their billings. However, we believe that, for computing escalation costs, the amount of the billing should include retention, since this amount has been incurred by the subcontractor and payment is merely being withheld until completion of the work.

We found that Newport News' failure to record retention on progress payments to one subcontractor had resulted in a \$34,000 material escalation overstatement. In many cases, the escalation on the retention was not computed until several years after the progress payment had been made. On the basis of overstatement found on the one subcontract, we estimate that the total material overstatement on all subcontracts having unrecorded retention could be as high as \$340,000 per ship, or \$1,700,000.

SUPSHIP and contractor officials told us that a contractor should record a subcontractor's retention and compute the material escalation on the retention when making a progress payment. However, they were not aware that retention was not always recorded.

Our analysis of Todd's progress and retention payments to subcontractors during the construction of two ships disclosed that Todd overstated material escalation by \$292,800 because it delayed computing the material escalation.

SUPSHIP officials agreed that contractors should compute material escalation relative to progress payments, including retentions, using the dates billings are received. Accordingly, the officials directed Todd to revise its procedures to comply with the contract clause and present a proposal to adjust past escalation billing.

Todd officials also agreed that they should compute material escalation based on the dates they receive the invoices, but only for those invoices that do not involve progress payments or retention.

#### CONCLUSIONS AND RECOMMENDATIONS

Three of the four contractors reviewed are incorrectly interpreting and applying the cost index material escalation clause. We believe that the intent of the clause is to compute escalation based on the BLS index that most closely approximates the date that costs are incurred and escalation is stopped.



Accordingly, this means that the date invoices are received, rather than when they are recorded, most approximates the date that costs are incurred. In addition, although subcontractors do not literally bill the contractors for retention amounts, these amounts should be included in escalation computation since they have already been incurred and are simply being withheld until final payment billing. The Navy Sea Systems Command Headquarters officials agreed that this is the intent of the clause.

Because contractors are not adhering to the intent and/or language of the clause, escalation payments are being overstated. Accordingly, we recommend that you direct the Secretary of the Navy to

- recover material escalation overpayments caused by the contractors' failures to compute escalation costs based on invoice receipt dates and
- revise the cost index material escalation clause to include the full amounts of all billings received from subcontractors, including retention on any progress payments made, regardless of whether such retention is shown on the bill.