134429

United States General Accounting Office

GAO

Report to the Chairman, Subcommittee on Defense, Committee on Appropriations, House of Representatives

October 1987

NAVY CONTRACTING

Cost Overruns and Claims Potential on Navy Shipbuilding Contracts

134429

RESTRICTED—Not to be released outside the General Accounting Office except on the basis of the specific approval by the Office of Congressional Relations.

540296

RELEASED

GAO/NSIAD-88-15

GAO

United States
General Accounting Office
Washington, D.C. 20548

National Security and
International Affairs Division

B-228619

October 16, 1987

The Honorable Bill Chappell, Jr.
Chairman, Subcommittee on Defense
Committee on Appropriations
House of Representatives

Dear Mr. Chairman:

This report responds to your December 30, 1986, letter concerning the effects of increased competition for Navy ship construction contracts. On April 23, 1987, we testified before your Subcommittee on the preliminary results of our work. This report updates and expands on the information provided and observations made at the hearing.

As requested, we have reviewed selected shipbuilding contracts awarded over the past few years to determine (1) whether these contracts can be executed within the funding appropriated, (2) the status of current and future claims against the government, (3) the actions that the Navy is taking to address current and anticipated claims, and (4) whether current staffing levels at Navy Supervisor of Shipbuilding, Conversion and Repair (SUPSHIP) activities are providing effective oversight over the contracts.

We found that the Navy has realized favorable bid prices from increased competition for its shipbuilding contracts. However, our review of 22 competed contracts shows the Navy is currently projecting cost overruns of about $1.413 billion over target costs on 19 contracts. The Navy is required to pay at least half of these overruns (about $706 million) up to a maximum ceiling price.

The Navy, in most cases, has sufficient program account funds to cover the Navy portion of the cost overruns. For a few programs, the Navy anticipates submitting reprogramming requests to cover its share of estimated overruns — $19 million for the fiscal year 1985 T-AO fleet oiler program, $10.4 million for the fiscal year 1986 T-AO program, and $30 million for the fiscal year 1984 FFG frigate program.

The causes for the overruns are many and varied, but most result from shipbuilders' decisions to cut prices and to make low competitive offers to obtain Navy contracts. This highly competitive bidding appears to be continuing on more recent awards.

It has been well established by Comptroller General decisions that an offeror can choose to cut prices for competitive purposes. As long as the proposal is technically acceptable, fair and reasonable in terms of price, and the contractor has been determined to be responsible to do the work, the contract award may be made to that offeror. The contracting officer must, however, assure that change orders or follow-on contracts are not used to recover amounts of below-cost bids.

Our analysis of cost overrun projections indicates that certain trends are developing that, if continued, could have future cost implications for both the shipbuilders and the Navy. Cost overruns on some contracts are increasing at a significant rate and are near, at, or above the ceiling price where the Navy's sharing of overruns ends, and the contractors are expected to lose money.

Historically, when shipbuilders experienced or were about to experience losses on contracts, they attempted to recoup the losses through claims against the government. Our analysis of the Navy's quarterly reports on Requests for Equitable Adjustment and claims and anticipated submissions indicates that the Navy will soon be facing increased activity in this area.

There is an overall awareness within the Naval Sea Systems Command (NAVSEA) of the necessity to avoid claims. Policy and procedures for minimizing the occurrence of claims and, if necessary, for resolving claims have been implemented; training and feedback on lessons-learned are being provided to SUPSHIPS; and programs directed to avoiding claims are in place at SUPSHIPS. These programs are periodically assessed by headquarters/field review teams during management reviews at each SUPSHIP. The most recent of these reviews did not indicate any major problems with the programs, other than isolated instances of insufficient staffings.

Five of the eight SUPSHIP activities we visited felt their staffing levels were inadequate to carry out oversight functions. However, we determined that NAVSEA, during mid-year and third quarter fund redistributions in March and June 1987, had authorized additional staff that appeared to meet most of the SUPSHIPS' stated needs.

As requested, we also interviewed representatives of major shipbuilders to obtain their views on contract award issues. They confirmed that shipyards are bidding low because of the current market environment and, in some cases, to survive. However, they were generally concerned about the long-term effect of using the lowest price as the driving factor in contract awards.

Conclusions

Over the past few years, the U.S. shipbuilding industry, faced with a weak and declining commercial market, has been intensely competing for limited Navy ship construction work. As shown in this report, highly-competitive bidding on Navy contracts is producing cost overruns of a magnitude that could present future problems to shipbuilders and the Navy. Past experience suggests that severe financial difficulties by shipbuilders on Navy contracts resulted in large claims against the government. We believe the developing trends associated with cost overruns and claims on Navy contracts need to be carefully monitored.

As requested, we did not obtain official comments on our report. We did obtain the views of agency officials from individual contract and program offices. Their views are included where appropriate.

As arranged with your office, unless you publicly announce its contents earlier, we plan no further distribution of this report until 30 days from its issue date. At that time, we will send copies to interested committees and other members of the Congress, and the Secretaries of Defense and the Navy. Copies will also be made available to other parties upon request.

Sincerely yours,

Frank C Conahan

Frank C. Conahan
Assistant Comptroller General

Contents

Abbreviations

GAO	General Accounting Office
NAVSEA	Naval Sea Systems Command
REA	Request for Equitable Adjustment
SUPSHIP	Supervisor of Shipbuilding, Conversion and Repair

Cost Overruns and Claims Potential on Navy Shipbuilding Contracts

Over the past few years, the U.S. shipbuilding industry has experienced a weak and declining commercial market. As a result, the industry has become almost completely dependent on the Navy as a primary customer and competition for Navy work has become extremely intense.

Within this environment, the Navy has awarded contracts based on policies that increased the levels of competition, placed more emphasis and relative importance on price in the evaluation of bid proposals, and expanded the use of fixed-price incentive contracts containing equal sharing provisions of cost risk. According to the Navy, the increased competition and emphasis on price have generally resulted in favorable contract prices and, in some cases, declining unit prices on ship programs. On the other hand, low prices realized from aggressive, competitive bidding could present future cost and other problems to the Navy, as financially troubled shipyards try to recoup losses when they become unable to keep costs at or below the agreed level.

On December 30, 1986, the Chairman of the Subcommittee on Defense, House Committee on Appropriations, requested that we review shipbuilding contracts awarded over the past 3 years. The Chairman referred to the positive aspects of increased competition, but also noted that there were indications that current contract awards could result in future claims against the government.

Objectives, Scope, and Methodology

Our objectives were to determine (1) whether contracts awarded could be executed within the funding appropriated, (2) the status of current and future claims against the government, (3) the actions that the Navy is taking to address current and anticipated claims, and (4) whether current staffing levels at the Supervisor of Shipbuilding, Conversion and Repair (SUPSHIP) activities are providing effective oversight over the contractors.

We reviewed the competitive award of 22 fixed-price incentive contracts and these contracts' financial and construction status. The contracts covered 9 combatant and noncombatant ship programs at 10 private shipyards and were the most recent contracts on which work had started or was recently completed. Our selection covered most contracts awarded since fiscal year 1983 and included some earlier 1981 and 1982 awards. In connection with reviewing the potential for future claims, we also examined additional contracts which were recently awarded.

Our work was performed at eight SUPSHIPS that were administering the contracts — Bath, Maine; Groton, Connecticut; Long Beach, California; Newport News, Virginia; New Orleans, Louisiana; Pascagoula, Mississippi; Portsmouth, Virginia; and San Diego, California. We also performed work at contract, program, budget, and SUPSHIP oversight offices of the Naval Sea Systems Command (NAVSEA) in Arlington, Virginia.

At the SUPSHIPS, we obtained information on and discussed the contract cost, schedule, and construction performance; estimates of cost at completion; claims avoidance programs; claims potential; contract adjustment and claims submissions; and staffing levels.

At NAVSEA, we obtained information on and discussed claims reporting and policy, staff resource determination and monitoring, and contract policy. We reviewed Business Clearance Memoranda[1] associated with selected contract awards. We also reviewed claims avoidance assessments resulting from NAVSEA management reviews. In addition, we analyzed and discussed program funds with Comptroller officials, and interviewed representatives of five major shipbuilders to obtain their views on contract issues.

We developed information on causes of cost overruns through discussions with officials, an analysis of information at Navy contract administration activities, and Navy analyses of contractor proposals.

Our review was performed between February and July 1987 and was conducted in accordance with generally accepted government auditing standards.

Cost Overruns Exceed Underruns by Wide Margin

While the Navy may be realizing declining shipbuilding contract prices, our review of the status of 22 fixed-price incentive contracts awarded since about 1982 shows that the Navy is projecting target cost overruns on 19 of them. These projected overruns total about $1.413 billion, up 18.3 percent from the $1.194 billion overrun on 17 contracts reported during our April 1987 testimony. The remaining three contracts had underrun projections totaling about $25.9 million, down considerably from the $59.8 million in estimated underruns on five contracts reported in April.

[1]The Memoranda are records documenting the bases for and approval of all contractual actions associated with a contract award.

Eighty-two percent of the $1.413 billion overrun involves three ship programs — 55 percent on the SSN-688 submarine, 16 percent on the Aegis cruiser, and 11 percent on the LHD assault ship programs. The four major shipyards holding the majority of Navy shipbuilding contracts account for about 87 percent of the total overrun.

A schedule of the contract cost projections is provided in a proprietary supplement, GAO/NSIAD-88-15S.

Sufficiency of Program Funds to Cover Navy Portion of Overrun

Fixed-price incentive contracts contain provisions for the sharing of cost overruns up to a ceiling price. Amounts above the ceiling price are borne entirely by the contractor. On the contracts reviewed, if final costs come in at the current estimates at completion, the Navy's share of the projected overruns would be about $706 million.

Our analysis of program funds and discussions with NAVSEA Comptroller officials indicate that there will be sufficient funds to cover anticipated cost overruns. According to the Navy, funds are sufficient to cover the Navy's estimated portion of cost overruns in most of its programs. In some programs, such as the SSN-688 attack submarine, the CG Aegis cruiser, and the landing craft air cushion vessel, the Navy has increased the basic construction line item cost by moving funds from other lines within the program account to cover anticipated cost overruns. In addition, the Navy expects to submit reprogramming requests to cover its share of estimated overruns of $19 million for the fiscal year 1985 T-AO fleet oiler program, $10.4 million for the fiscal year 1986 T-AO program, and $30 million for the fiscal year 1984 FFG frigate program.

Causes of Overruns

The causes for the projected overruns are many and varied. On some contracts, shipbuilders are experiencing labor productivity problems and shipyard inefficiencies; on others, some shipyards, according to the Navy, have underestimated the complexity of construction. Certain contracts are being affected by problems external to the shipyard, such as a large amount of design changes and late government-furnished equipment and data.

The shipyards' decisions to cut prices (in some cases, below expected costs) to make low competitive offers and obtain Navy contracts appear to be the major contributor to the overruns. For example, successful offers on Aegis cruiser contracts at Bath Iron Works, according to Navy analyses, included overly optimistic learning curves. We previously reported[2] that Electric Boat's fiscal year 1986 contract price for SSN-688 submarines was understated and did not reflect contractor estimates that indicated that the construction cost was likely to be higher. Six months after the award, the Navy was forecasting a cost overrun of $196.1 million. Cost evaluation and price analysis reports associated with the Navy's review of proposed prices on some other contracts contained references to aggressive labor hour reductions and optimistic estimating by successful offerors.

Our examination of 2 recent awards not among the 22 contracts reviewed shows that the Navy may be facing additional cost overruns because of significant reductions in proposed cost by the offerors. Navy analyses indicate that both contracts were awarded at a substantial cost risk to the government based on comparisons of the proposed prices with the Navy's estimates. In both of these awards, the Navy believes that there is a strong possibility that the contractors will exceed ceiling prices.

Two other recent awards further illustrate aggressive price competition. The fiscal year 1987 SSN-688 submarine contract for all four ships was awarded at a price that was $4 million lower than the previous year's for a similar quantity, and the DDG-52 Aegis destroyer follow-ship award to a second-source contractor was about 25 percent under the lead-ship price.

Shipbuilders' Views

Our interviews with shipbuilders confirmed that the industry is currently competing in a "low ball" or close to the margin environment on Navy ship construction contracts. Some stated that yards will continue to bid low for limited Navy work to survive, but that certain successful bidders might not survive because of huge overruns they cannot absorb. They believed this would especially apply if follow-on contracts were not obtained to help recovery from a low bid.

Some shipbuilders believe bids are low because too many shipyards are pursuing less work. Shipyards are going out of business, and those remaining bid dramatically lower prices to stay in business. One shipbuilder said the Navy has sent a message that ship contracts will be awarded based on price and the response has been to bid aggressively.

[2] Navy Contracting: Fiscal Year 1986 Contract Award for Construction of SSN-688 Submarines (GAO/NSIAD-87-120, May 4, 1987).

There was concern about the long-term effect of using the lowest price as the driving factor in contract awards. One shipbuilder said that more weight should be placed on realism during the evaluation of proposals and that the Navy should consider the shipbuilders' supply base, financial ability, technical competence and capability, and the long-term consequence of losing a reliable contractor because of a low bid.

Federal Procurement Regulations Do Not Prohibit Low Bid Proposals

It is well established under Comptroller General decisions that an offeror can choose to cut its price for competitive purposes. As long as the proposal is technically acceptable and fair and reasonable in terms of price, and the contractor has been determined to be responsible to perform the work, a contract award may be made to that offeror. The contracting officer must, however, assure that change orders or follow-on contracts are not used to recover from below-cost bids.

To be determined responsible, a prospective contractor must meet certain prescribed financial, performance, managerial, and business standards contained in Part 9, Contractor Qualifications, of the Federal Acquisition Regulation. Some of the elements of responsibility require that the contractor have adequate financial resources to perform the contract; a satisfactory performance record; and the necessary production, construction, and technical equipment and facilities, or the ability to obtain them.

Although price was the highest weighted factor in all of the procurements we reviewed, the Navy, in its evaluations of the offers, considered other technical and managerial factors. Where necessary, pre-award surveys were performed, and in each case, a determination of contractor responsibility was made.

Moreover, in evaluating proposals, Navy acquisition officials can and do consider national defense and industrial mobilization base as a factor. The use of this factor reflects an acquisition office's recognition of the need to effect an award pattern that best promotes the interest of national defense and industrial mobilization in accordance with federal procurement law. This determination allows the Navy, for example, to prevent a key shipyard from going out of business by awarding it a contract for industrial base purposes. We found that split awards were made for these purposes in the Aegis cruiser and nuclear attack submarine programs.

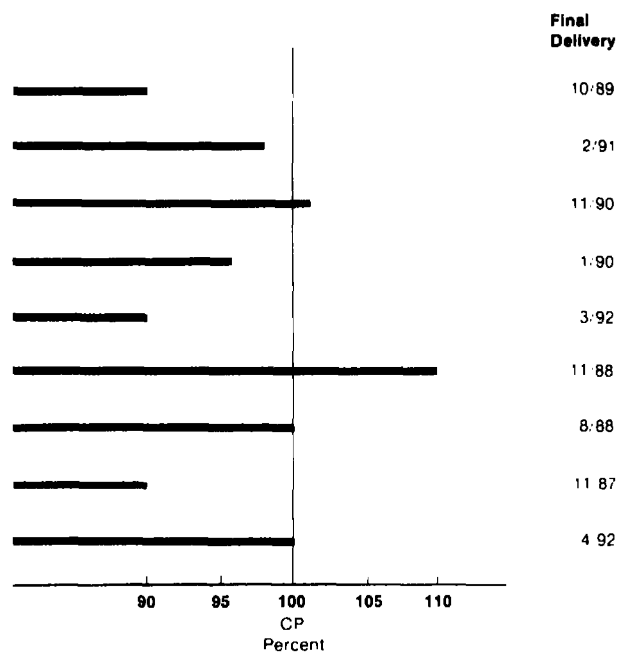
Overrun Trends and Cost Implications

Our analysis of cost overrun projections indicates significant trends are developing that, if continued, could have future cost implications for the Navy and the contractors.

For some shipyards, cost overruns are increasing substantially in amount on each succeeding contract awarded. Overruns have nearly doubled on each SSN-688 contract awarded since fiscal year 1981.

For these and other shipyards, many of the estimated costs at completion are near, at, or above contract ceiling price, where the Navy's sharing of increased costs over target ends and the contract is at a break-even point. Cost projections above this ceiling mean the contract is in an estimated loss position. In this regard, nine contracts have estimates at completion of at least 90 percent of ceiling price, four are projected at or above ceiling price. For the shipyards involved in SSN-688 construction, the more recent the contract, the closer it is to the ceiling price. Most of the nine contracts have a substantial amount of work remaining until final delivery, thus increasing the likelihood that the ceiling price will be exceeded. (See figure I.1.)

Figure I.1: Estimated Costs at Completion as a Percentage of Ceiling Price (CP)



Historically, claims have been made against the government primarily because a shipbuilder discovered that it was in a loss position or was approaching such a position. In the Naval Ship Procurement Process Study of the late 1970s, a study team's appraisal of lessons learned from an analysis of the 1970's claims situation showed that the Navy suffers from unrealistic prices in the long run since shipbuilders facing losses on contracts are likely to submit claims. The team observed that evidence of varying degrees of fault on the part of the Navy gave impetus to such claims.

Contract Adjustments and Claims Are Increasing

Our analysis of Requests for Equitable Adjustment (REA) and claims reported to NAVSEA by the SUPSHIPS and recent and anticipated submissions indicates that the Navy will be facing increased activity in this area. An REA is a request for payment, extension of the delivery schedule, or both, which is not in dispute at the time the government receives it. Whenever such a request cannot be settled by an agreement, the contractor may file a claim.

SUPSHIP records and quarterly reports on active REAS and claims relating solely or partly to ship construction contracts showed 10 submissions valued at about $200.9 million, as of December 31, 1986. The overall total increased to 28 submissions valued at about $345.4 million as of July 1987. All of these submissions are being reviewed by the Navy.

Among the submissions was a Bath Iron Works' REA that was initially submitted in November 1986 to recover cost overruns on three Aegis cruiser contracts. The REA noted that Bath Iron Works and the Navy's projected cost on the program had changed for many reasons, including government changes, delay, disruption, shipyard strike, and shipyard performance problems. According to the REA, both parties needed to reestablish cost, schedule, and technical baselines. Bath Iron Works computed and requested a proposed contract adjustment of about $100 million. In December 1986, Bath Iron Works, responding to a Navy request, provided additional supporting data to facilitate the Navy's analysis of the REA.

On May 18, 1987, Bath Iron Works submitted a revised REA that completely replaced the November 1986 submission. The contractor is now requesting a contract adjustment of about $134 million.

As we testified in April, Bath Iron Works also believes that it is entitled to additional compensation on the DDG-51 Aegis destroyer contract. The contractor said it will seek this compensation through an REA or the conventional change process.

Also among the active REAS was one submitted by the Electric Boat Division of General Dynamics Corporation on July 17, 1987, for cost adjustments of about $97.1 million and for schedule adjustments on two SSN-688 contracts. The REA is based on the impact of formal and constructive changes (untimely and defective data) for the design of the AN/BSY-1(V) combat system, retractable bow planes, and the placement of lead ballast.

Our REA/claim analysis also showed that:

- REAS and claims were submitted or are anticipated on 8 of the 19 contracts currently projecting cost overruns.
- One claim was submitted on one of the three contracts with projected cost underruns and was settled for the full amount requested — $1.5 million.
- Some of the characteristics of and circumstances that gave rise to the major shipbuilding claims of the 1970s are appearing on the larger REA/claim submissions. These include government changes, defective drawings or specifications, delay in government-furnished equipment or information, lack of or late design data, and program delay and disruption.

Actions Taken to Address Claims

There is concern and awareness within NAVSEA of the need to avoid claims on ship contracts. NAVSEA has policies and procedures to minimize the occurrence of claims and, if necessary, to resolve them.

These measures are directed to and are implemented by naval activities, such as SUPSHIPS, which are expected to experience claims situations. Each SUPSHIP we visited had implemented claims avoidance programs and some had issued local guidance that addressed the problem. The Navy's contract administration manual for ship acquisition also discusses claims management and related matters.

An important aspect of claims avoidance programs is the documentation of significant contract events. The rationale for this process is that adequate documentation is the key to the government's ability to verify, qualify, or refute contractor claims.

A NAVSEA headquarters office in the Contracts Directorate provides assistance and guidance to SUPSHIPS on claims matters. This office compiles statistics on REAS and claims from quarterly reports submitted by SUPSHIPS, supplies feedback on lessons learned from prior claims, provides training in claims avoidance, is involved in the processing of claims, and conducts contract management reviews once every 3 years at each SUPSHIP. These reviews include examining actions taken by the SUPSHIPS to avoid claims. SUPSHIP Operations Review Teams from NAVSEA's Industrial and Facilities Management Directorate also look at claims avoidance programs during their SUPSHIP effectiveness reviews, which also are conducted on a 3-year cycle.

The most recent reports (dated between June 1985 and May 1987) of these NAVSEA reviews at the eight SUPSHIPS showed that, generally, no significant problems were found with the claims avoidance programs. However, the reports identified inadequate staffing in programs at the New Orleans and San Diego SUPSHIPS in February 1986; recommended in December 1986 that a claims avoidance monitor be established by the Pascagoula SUPSHIP at all area shipyards having Navy-administered contracts; and in May 1987 recommended that the Groton SUPSHIP incorporate REA/claims reporting requirements in its local instruction.

Adequacy of Staffing at SUPSHIP Activities

During our review, the Groton, Long Beach, New Orleans, and San Diego SUPSHIPS and the Portsmouth detachment at Pennsylvania Shipbuilding told us that their staffing levels were inadequate to carry out oversight functions. SUPSHIP officials at two locations were particularly concerned.

An official of the New Orleans SUPSHIP told us the workload over the past 2-1/2 years increased 600 percent while the staffing increased 50 percent. Since 1983, contract dollars increased from $330 million to $2.2 billion in 1987, and the number of locations where contracts are being performed have increased from two to five. According to a San Diego official, that activity is understaffed, especially in the new construction area, and does not have sufficient staff to accurately monitor the recently awarded AOE-6 contract.

SUPSHIPS operate on a NAVSEA-approved "Management by Payroll" budget in which the number of personnel at a location are converted into budget dollars. NAVSEA headquarters attempts to match ship programs to planned oversight functions of each SUPSHIP by using the Five Year Defense Plan and the anticipated exercise of contract options for new construction.

Our analysis of the Authorization Expense Operating Budget distribution for SUPSHIPs for the fiscal years 1985-87 period showed that budgeted amounts for the most part had not changed significantly. Budgets for the Long Beach, New Orleans, and Portsmouth SUPSHIPs experienced year-to-year increases. Budgets for Bath and Pascagoula increased slightly from 1986 to 1987. On the other hand, budgets at the San Diego, Groton, and Newport News SUPSHIPs decreased in fiscal year 1987.

According to a NAVSEA official, it is difficult to accurately forecast where construction contracts will be awarded and, therefore, SUPSHIPs frequently have additional work that can upset staffing projections. Some SUPSHIPs can be understaffed until changes are made to meet the unanticipated work.

NAVSEA headquarters responds to unplanned/unbudgeted work by redistributing unobligated and overtime funds throughout the fiscal year, thus providing additional monies that can be used for additional staff.

We determined that NAVSEA headquarters, during mid-year and third quarter redistributions of fiscal year 1987 funds, responded to much of the SUPSHIPs' needs by providing for additional staff. A comparison of onboard staff at the beginning of fiscal year 1987 and end-of-year authorizations showed that levels at the eight SUPSHIPs were increased by 200. New Orleans and San Diego's authorized levels increased by about 18 percent and 3 percent, respectively.

Moreover, NAVSEA officials said that completion of contracts such as the T-AH hospital ship at San Diego also released staff for reassignment to new construction work. In addition, SUPSHIPs can use temporary staff pending the hiring of new staff. However, NAVSEA officials cautioned that, even though additional staff billets are authorized, SUPSHIP recruitment of people for some of the more remote locations can be a problem.

Requests for copies of GAO reports should be sent to:

U.S. General Accounting Office
Post Office Box 6015
Gaithersburg, Maryland 20877

Telephone 202-275-6241

The first five copies of each report are free. Additional copies are $2.00 each.

There is a 25% discount on orders for 100 or more copies mailed to a single address.

Orders must be prepaid by cash or by check or money order made out to the Superintendent of Documents.

United States
General Accounting Office
Washington, D.C. 20548

Official Business
Penalty for Private Use $300

Address Correction Requested

First-Class Mail
Postage & Fees Paid
GAO
Permit No. G100