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NAVY MAINTENANCE

Competing Vessel Overhauls and Repairs Between Public and Private Shipyards



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**National Security and
International Affairs Division**

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Congressional Requesters

This report is in response to a request received from the Members of Congress listed at the end of this letter.

This report contains our assessment of the Navy's program to acquire naval vessel overhauls and repairs through competition between public and private shipyards. It addresses a number of questions involving whether (1) inherent differences between public and private shipyards preclude realistic and fair competition, (2) public shipyard proposals include all costs, and (3) mechanisms exist to ensure the integrity of the process.

Because some of the data that we obtained is considered by the Department of Defense to be for official use only, it has not been included in this report but is being provided to your offices today in a restricted supplement (GAO/NSIAD-88-109S).

As arranged with your offices, 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 congressional committees and subcommittees, the Secretaries of Defense and the Navy, and other interested parties. We will also make copies available to others upon request.

A handwritten signature in cursive script that reads 'Frank C. Conahan'.

Frank C. Conahan
Assistant Comptroller General

B-229025

List of Requesters

The Honorable John Breaux
United States Senate

The Honorable Herbert H. Bateman
The Honorable Helen Delich Bentley
The Honorable Corinne C. (Lindy) Boggs
The Honorable Sonny Callahan
The Honorable Roy Dyson
The Honorable Duncan Hunter
The Honorable Trent Lott
The Honorable G.V. (Sonny) Montgomery
The Honorable Denny Smith
The Honorable W.J. (Billy) Tauzin
House of Representatives

Executive Summary

Purpose

Programs to acquire a portion of naval vessel overhauls and repairs through competition between public and private shipyards (the competition program) have been included in defense appropriation acts since fiscal year 1985.

Several Members of Congress requested GAO to examine a number of questions involving whether (1) inherent differences between public and private shipyards preclude realistic and fair competition, (2) public shipyard proposals include all costs, and (3) mechanisms exist to ensure the integrity of the process.

Background

Before fiscal year 1985, naval vessel overhauls and repairs either were assigned to public shipyards or were competed, in most cases, among private shipyards. Also, some nuclear-powered vessels were allocated to private shipyards. At one time, the Congress limited the amount of overhaul and repair work done by the public shipyards to no more than 70 percent of the total funds appropriated for such purposes. Now it is limited by specific appropriations, which generally has the same effect. Public shipyards are assigned work to maintain the mobilization base or because no other facilities are available to accomplish complex work.

Between fiscal years 1985 and 1987, about \$15.4 billion was budgeted for the alteration, overhaul, and repair of naval vessels. As of the end of fiscal year 1987, 31 vessels had been competed involving work valued at about \$823 million. Public shipyards were awarded about 80 percent of the amount competed. The Navy expects about 10 percent of all overhaul and repair work from fiscal years 1986 through 1989 to be competed between public and private shipyards.

The Naval Sea Systems Command oversees the eight public shipyards, implements the competition program, evaluates public and private shipyards' proposals and, along with the Navy Comptroller, provides public shipyards guidance on developing competitive price proposals. Separate organizations within this Command manage the public shipyards, evaluate the competitive proposals, and award work competed under the program. Competed work was awarded to responsible shipyards on the basis of the lowest priced public or private shipyard proposal, except in limited cases where it was awarded to promote national defense or protect the mobilization base.

Results in Brief

Although inherent differences preclude public and private shipyards from competing on an equal footing, private shipyards have successfully competed for work involving surface vessels. The public shipyard proposals GAO reviewed reasonably reflected those shipyards' costs to do submarine-related work. A revised Navy policy should result in more realistic cost estimates for work involving surface vessels.

The program appears to have created a more competitive environment and the Navy has taken steps to ensure that public and private shipyards are treated as equitably as possible. GAO identified some additional steps that should be taken in the interest of equity, even though these steps may not change the relative share of the amount of work awarded to public and private shipyards.

Principal Findings

Relative Share of Competed Work

Of the competed work valued at \$823 million, public shipyards were awarded about \$656 million and private shipyards were awarded about \$166 million. Most of the amount awarded to public shipyards (about \$568 million) was for regular overhaul work involving nuclear ballistic missile submarines. Only one private shipyard is qualified for such work and, as of the end of fiscal year 1987, it had not won a competition. As long as public shipyards continue to win most of the competitions involving this type of work, they will continue receiving most of the funds allocated to the program. (See pp. 11, 12, and 18-20.)

Differences

The Shipbuilders Council of America and others believe that inherent differences between public and private shipyards preclude fair and equitable competition. They cite, for example, that private shipyards face a greater financial risk than public shipyards. In the long term, private shipyards must generally seek to make a profit, but they must compete under firm fixed-price and fixed-price incentive contracts for work that they believe is not always adequately defined. Although they can bid below the expected cost, they face the possibility of losses. In contrast, while public shipyards must base their bids on expected costs, they operate under project orders and the government will eventually absorb all costs above the fixed price. (See pp. 24 and 25.)

Cost Proposals

Before submitting proposals, public shipyard commanders and senior management can adjust the estimates for their assessment of contingencies, the shipyard's current capability, and the competitive environment. They also can add discretionary costs. For work involving submarines, GAO found these types of adjustments increased the cost estimates. Where a comparison could be made, however, GAO found that the estimates were comparable to costs of similar, noncompeted work that had been completed. For work involving surface vessels, the adjustments, when made, decreased the estimates. (See pp. 51-55.) Numerous private shipyards also can do this type of work and it is therefore a more competitive environment than exists for submarine work. (See pp. 19 and 20.)

Comparability Analyses

The legislation authorizing the program requires the Navy to certify that successful bids include comparable estimates of all direct and indirect costs for both public and private shipyards. (See p. 11.) In developing the comparable estimates, the Navy estimates and adds a pro rata share of costs for shipyard military personnel, facility depreciation, unemployment insurance, and workmen's compensation and also adds expenses associated with a new oversight function created for the program to the lowest priced public shipyard proposals. GAO identified and believes two other cost elements—the full costs associated with civilian shipyard employees' retirement and a pro rata share of the costs of the Navy supply system—should be added to the public shipyards' proposals. (See pp. 27-33.)

The applicable cost of the Supervisor of Shipbuilding, Conversion and Repair, which oversees work at private shipyards, is estimated and added to the lowest priced private shipyard proposals. The purpose of the comparability adjustments is to estimate additional costs to the Navy which are not funded by either public or private shipyards. (See pp. 27-30.)

Awards have been based on the shipyards' proposed prices, not on the comparability analyses. To date, however, even if the analyses were considered in the award process (including the additional cost elements identified by GAO), the results would not have changed because of the large differences between the lowest priced public and private shipyard proposals. Nonetheless, because the differences in some future proposals could be small, GAO believes proposals should be evaluated and awards made using the results of the comparability analyses. (See pp. 30, 32 and 33.)

Equitable Treatment

The Navy has implemented several administrative procedures intended to help ensure that competing public and private shipyards are treated as equitably as possible. For example, the procurement process is patterned after Federal Acquisition Regulation principles and procedures. (See pp. 25 and 26.) Also, measures have been implemented at public shipyards to ensure that costs are properly recorded and work is accomplished as required. (See pp. 55-57.) However, inherent differences between public and private shipyards preclude complete comparability and equity. (See pp. 24 and 25.)

Cost Savings

GAO could not substantiate the Navy's estimate that competition between public and private shipyards has saved \$200 million. However, public shipyard managers believe that the program has somewhat reduced costs. (See pp. 35-38.)

Recommendations

GAO recommends that the Secretary of Defense direct the Secretary of the Navy to (1) base the certifications of public and private shipyard competitive proposals on the proposed prices and all other costs to the federal government that can be reasonably and objectively identified and (2) solicit and evaluate proposals and award competed work on that basis. (See p. 33.)

Agency Comments

The Department of Defense (DOD) generally agreed with GAO's findings and recommendations. DOD stated that the Navy has actions underway to implement the recommendations, beginning with requests for proposals advertised in fiscal year 1989. DOD also noted that the Navy has implemented a number of initiatives in recent years to improve the efficiency of its shipyards, including the competition program. Further, while the precise savings are not known, DOD believes that the Navy's estimate attributing about \$200 million of the savings to the competition program is reasonable. (See pp. 59-66.)

Contents

Executive Summary		4
<hr/>		
Chapter 1		10
Introduction	Congressional Guidance	11
	Implementing Public Versus Private Shipyard Competition	11
	Objectives, Scope, and Methodology	13
<hr/>		
Chapter 2		16
Distribution of Work Between Public and Private Shipyards	Factors Influencing the Distribution of Work	16
	Assigned and Competed Work	18
	Conclusions	20
	Agency Comments	20
<hr/>		
Chapter 3		22
Public Shipyard Proposals Should Include All Government Costs	Public Shipyard Cost Estimates	23
	Inherent Differences	24
	Measures to Foster a Competitive Environment	25
	Navy Cost Realism and Comparability Analyses	27
	Estimates of Additional Costs	30
	Conclusions	32
	Recommendations	33
	Agency Comments	33
<hr/>		
Chapter 4		35
Assessments of the Expected Benefits of Competition	Claim of \$200 Million Savings	35
	Evaluation of Competition by Public Shipyard Officials	38
	Report on Test Competition in Fiscal Year 1985	40
	Conclusions	41
	Agency Comments	42
<hr/>		
Appendixes		
	Appendix I: Request Letter	44
	Appendix II: List of Vessels Competed, Fiscal Years 1985 Through 1987	49
	Appendix III: Public and Private Shipyard Proposals	51
	Appendix IV: Comments From the Deputy Assistant Secretary of Defense (Systems)	59

Tables	Table 2.1: Specialized Maintenance Capabilities of Public Shipyards	17
	Table 2.2: Value of Allocated and Competed Work, Fiscal Years 1985-89	19
	Table 2.3: Results of Competition, Fiscal Years 1985-87	19
	Table 4.1: Basis for Savings Estimate on SSBN Overhauls	36

Figure	Figure 1.1: Navy Vessel Overhaul and Repair Budget, Fiscal Years 1985-87	12
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Abbreviations

APO	Administrative Project Officer
DLA	Defense Logistics Agency
DOD	Department of Defense
ERP	Extended Refit Period
FAR	Federal Acquisition Regulation
GAO	General Accounting Office
GSA	General Services Administration
LPD	Amphibious Transport Dock
NAS	Naval Audit Service
NAVSEA	Naval Sea Systems Command
OMB	Office of Management and Budget
ROH	Regular Overhaul
SMR	Stabilized Manday Rate
SRA	Selected Restricted Availability
SSBN	Nuclear Ballistic Missile Submarine
SSN	Nuclear Attack Submarine
SUPSHIP	Supervisor of Shipbuilding, Conversion and Repair

Introduction

Naval vessels are overhauled and repaired in both naval (public) and commercial (private) shipyards. Since 1974, the Congress, recognizing the need to maintain a private shipyard capability, has placed ceilings on the amount of work that can be accomplished by public shipyards. This ceiling has equated to about 70 percent of all funds appropriated for the alteration, overhaul, and repair of naval vessels.

Until fiscal year 1985, all such work was generally either assigned to public shipyards or competed, with the exception of some nuclear-powered vessels, among private shipyards. Beginning in fiscal year 1985, the Congress initiated a test of competition¹ between public and private shipyards (the competition program). Now, this type of competition is being expanded to include about 10 percent of all overhaul and repair work. Between fiscal years 1985 and 1987, about \$15.4 billion was budgeted for repairs and overhauls of naval vessels. As of the end of fiscal year 1987, work valued at about \$822.5 million had been competed between public and private shipyards.²

In the early 1980s, private shipyards began experiencing declines in commercial shipbuilding, overhaul, and repair activity. The number of private shipyards declined from 110 shipyards with 112,000 employees in 1982 to 74 shipyards with 85,000 employees in 1986. About 30 private shipyards are engaged in work involving naval vessels. Although all new naval vessel construction since 1967 has been performed by private shipyards, the decline in commercial work made these shipyards increasingly dependent on other work involving naval vessels. As a result of the competition program, several Members of Congress and the private shipbuilding and repair industry have become concerned about

- public shipyard accounting practices;
- inherent differences that may put private shipyards at a competitive disadvantage, such as requiring private shipyards to compete for work which may not be fully defined under fixed-price type contracts; and
- the integrity of the competitive process.

¹Throughout this report the term "competition" refers to competition between public and private shipyards, unless stated otherwise.

²Work valued at about \$17.8 million involving three of the vessels competed in fiscal year 1987 will not start until fiscal year 1988.

Congressional Guidance

Beginning in fiscal year 1974, the Congress placed a 70-percent ceiling on the appropriations for all alterations, overhauls, and repairs of naval vessels that could be reserved exclusively for public shipyards. Although this ceiling was later removed, specific appropriations are now provided for such work, which still limit the work that can be done in public shipyards to no more than 70 percent.

In fiscal year 1985, the Congress created a program that tested acquiring naval vessel overhauls and repairs through competition between public and private shipyards. Although the original legislation did not specify the amount to be competed, it made funds available for two or more vessels to be placed in the test and stated that:

"...The Secretary of the Navy shall certify, prior to the award of a contract under this test, that the successful bid includes comparable estimates of all direct and indirect costs for both public and private shipyards. Competition under such test program shall not be subject to section 502 of the Department of Defense Authorization Act, 1981, as amended, or Office of Management and Budget Circular A-76."³

For fiscal year 1986, legislation authorized competition for work involving at least four vessels. The number of vessels was not specified for fiscal year 1987. The legislation for fiscal years 1986 and 1987 also did not specify the amount of the appropriations to be competed.

Implementing Public Versus Private Shipyard Competition

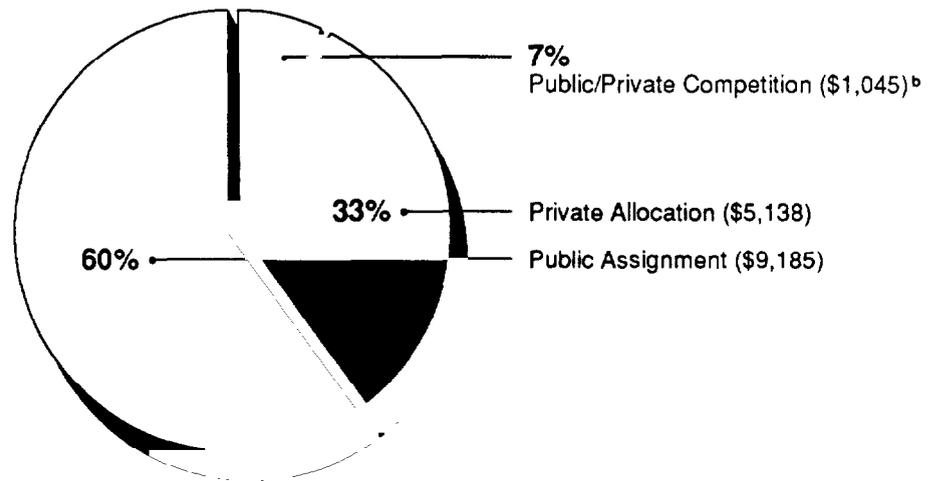
Within the Naval Sea Systems Command (NAVSEA), which implements the program, separate organizations award contracts to private shipyards, issue project orders to public shipyards for competed work, and manage the eight public shipyards. Commanders in Chief, U.S. Atlantic and Pacific Fleets, also issue project orders. The Navy Comptroller also issues pricing guidance to the public shipyards for the competition program.

As of the end of fiscal year 1987, overhaul and repair work, valued at \$822.5 million, involving 31 vessels had been competed. Public shipyards were awarded 4 surface vessels and 12 submarines, totaling \$656.1 million, while private shipyards were awarded 14 surface vessels and 1 submarine, totaling \$166.4 million. (See app. II for a list of the vessels competed, the shipyard awarded the work, and the amount of

³Section 502 places certain restrictions on the conversion of commercial and industrial type functions to contractor performance. The Office of Management and Budget (OMB) Circular A-76 establishes federal policy and procedures for determining whether commercial activities should be performed under contract with commercial sources or in-house using government facilities and personnel.

the award.) As shown in figure 1.1, competition between public and private shipyards was a relatively small portion of all overhaul and repair work.

Figure 1.1: Navy Vessel Overhaul and Repair Budget, Fiscal Years 1985-87
(Millions of Dollars)^a



^a Fiscal year 1985 is actual. Fiscal years 1986 and 1987 are estimates.

^b Of this amount, about \$805 million was actually competed.

The Navy has budgeted an average of 10 percent of all overhaul and repair funds for competition from fiscal years 1986 through 1989. (See table 2.2, ch. 2.)

Overview of Competitive Process

NAVSEA nominates vessels to be competed and sends solicitations to public and private shipyards qualified to perform the work. After evaluating offeror proposals, NAVSEA performs a comparability analysis on the apparently lowest priced proposals received from responsible public and private shipyards. This analysis is the Navy's basis for later certifying to the Congress that the successful bid includes comparable estimates of all direct and indirect costs. NAVSEA, in its analyses, adds certain costs, such as those for military personnel and Supervisor of Shipbuilding, Conversion and Repair (SUPSHIP), which are not funded by either public or private shipyards. If a public shipyard's proposal is the lowest, NAVSEA also performs a cost realism analysis to determine if the proposed

amount reflects reasonable and realistic costs. The responsible shipyard submitting the lowest priced proposal is awarded or assigned the work.

Generally, the public shipyard proposals are based on a composite daily rate for labor and overhead that is applied to the expected number of staff-days needed to do competed work. Material costs are estimated separately. This process is further explained in chapter 3 and appendix III.

Type of Work Varies

Regular overhauls (ROHS) involve extensive work on both surface vessels and submarines. Of the work competed, ROHS involving nuclear ballistic missile submarines (SSBNS) are the most costly. Only one private shipyard is qualified by the Navy to perform that complex work. Selected restricted availabilities (SRAS) and extended refit periods (ERPS), in contrast, correct specific problems and require less time. Only one other private shipyard is capable of performing SRA- and ERP-type work involving nuclear submarines.

Objectives, Scope, and Methodology

Several Members of Congress requested us to evaluate if it is possible for the Navy to establish a realistic and equitable program to compete the overhaul and repair of naval vessels between public and private shipyards. (See app. I.) To accomplish this objective, we assessed if there are

- inherent differences, such as financial risk, that preclude realistic competition;
- adequate methods to ensure public shipyards include all direct and indirect costs in their proposals; and
- controls to ensure the integrity and equity of the process.

The scope of our work included a comparison of the size of the competition program in the context of all work involving naval vessel overhauls and repairs and a review of the laws, regulations, and policies that influence the allocation and competition of such work.

We discussed the competitive process with Navy officials responsible for implementing the program, including those at NAVSEA headquarters and four public shipyards—Charleston Naval Shipyard, Charleston, South Carolina; Long Beach Naval Shipyard, Long Beach, California; Portsmouth Naval Shipyard, Portsmouth, New Hampshire; and Puget Sound Naval Shipyard, Bremerton, Washington. We also discussed the program

with representatives of the Shipbuilders Council of America and five private shipyards that have participated in the program.

Our review focused on competitions that resulted in four awards to public shipyards and one award to a private shipyard. The awards included work involving surface vessels and submarines and east and west coast shipyards.

As part of our examination of the inherent differences between public and private shipyards, we reviewed the concerns of the private shipyard industry as identified by the Shipbuilders Council of America and other industry representatives.

To determine if public shipyard proposals included all costs, we examined what types of labor, material, and overhead costs were accumulated by the shipyards' accounting systems and how those costs were reflected in the proposals. We also examined the public shipyards' methods for estimating the staff-days to accomplish the work. Where possible, we compared those estimates with estimates of similar work that was not competed to help assess the reasonableness of the proposals. We evaluated each public shipyard's methodology for estimating the staff-day rates used to estimate the total cost of the work. To assess the reasonableness of the proposals, we also compared those rates to rates used to estimate the cost to accomplish similar work that was not competed.

We examined the Navy's methodology for conducting the realism and comparability analyses and assessed the role these analyses played in the competitive process.

We evaluated the basis of the Navy's estimate that competition has saved \$200 million. Structured interviews were conducted with a total of 16 key public shipyard officials to obtain their opinions about the effects of competition at the four public shipyards included in this review. The officials were the shipyard Commander (or designee), Comptroller, Planning Officer, and Production Officer.

We did not independently assess private shipyard pricing strategies. However, we did discuss this issue with several representatives of private shipyards that have participated in the program.

Normally, cost comparison studies, such as those proposed by OMB Circular A-76, are used to decide whether it is more economical to have a government entity or a private entity perform a function. These types of

studies consider only those government costs that would change since they are considered to be the actual costs to do the work and would be eliminated by having a private entity perform the function. However, for public shipyards, most personnel and overhead costs are likely to continue, at least in the short term, because public shipyards are considered to be part of our defense mobilization base and are unlikely to be closed without extensive policy debate.

Recognizing the above, we allocated attributable costs for (1) operating and maintaining the Navy supply system and (2) the full cost of retirement for public shipyard employees to the lowest priced proposals we reviewed. The purpose was to show that additional costs were attributable to the federal government to do the work and that these would further narrow the differences between public and private shipyard proposals. While we believe that most of these costs are likely to continue to be incurred in the short term and thus would not be considered in a traditional cost comparison study, our approach is basically consistent with the policy public shipyards now follow to develop their proposals. They are now required to include a proportionate share of all related shipyard-funded costs in their proposals, even if those costs are likely to continue to be incurred if the work is awarded to a private shipyard. In other words, the proposals must fully reflect the current best estimate of costs at completion; reflect the same workload, cost, and economic assumptions used to price other work at the activity; and be based on fully allocating and recovering all practicable direct and indirect shipyard costs attributable to the work. In addition, most of the costs the Navy now includes in the comparability analyses would continue to be incurred. To disregard those costs would permit public shipyards to include only variable costs, such as the cost of material and some overhead, in their estimates. We believe this would be inequitable and give public shipyards an unfair competitive advantage.

Our work was performed in accordance with generally accepted government auditing standards.

Distribution of Work Between Public and Private Shipyards

Each year the Navy determines the amount of work to be assigned to public shipyards, competed among private shipyards, or competed between public and private shipyards. In some cases, work is allocated to private shipyards. Although the process is influenced by several factors, we found that the Navy expects private shipyards to increase their relative share of all overhaul and repair work and funds budgeted for overhaul and repair work through fiscal year 1989 to decline below recent levels.

Public shipyards were awarded work involving 16 of the 31 vessels competed between public and private shipyards. This work was valued at about \$656.1 million, about 80 percent of the value of the work (\$822.5 million) competed as of fiscal year 1987.

The large value of work awarded to public shipyards can be attributed to costly ROHS for SSBNs. Public shipyards were awarded all such work.

Factors Influencing the Distribution of Work

The distribution of overhaul and repair work between public and private shipyards and the competition between those shipyards are influenced by several factors, including the

- need to maintain a mobilization base,
- complexity of work, and
- congressional limitations on the amount of funds to be provided for work at public shipyards.

The Navy annually reviews projections of the workload for the public shipyards, its vessel maintenance requirements, and budget estimates for the upcoming 5-year period. During the review, vessels are (1) assigned to public shipyards, (2) allocated for competition between private shipyards, or (3) nominated for competition between public and private shipyards. In some cases, work is allocated to private shipyards.

Mobilization Requirements Assure Public Shipyards a Minimum Workload

Both public and private shipyards are essential to the mobilization base. In the event of a national emergency, public shipyards will provide an immediately available capability and capacity to repair battle-damaged vessels. Certain public shipyards perform particular work or accommodate certain types of vessels and are assigned work to maintain the capabilities shown in table 2.1.

**Chapter 2
Distribution of Work Between Public and
Private Shipyards**

Table 2.1: Specialized Maintenance Capabilities of Public Shipyards

Shipyard	Type of maintenance capability			
	Aircraft carriers	Nuclear		Electronics/ missile systems ^a
		Surface ships	Submarines	
East coast:				
Charleston			X	X
Norfolk	X	X	X	X
Philadelphia	X			X
Portsmouth			X	
West coast:				
Long Beach	X			X
Mare Island		X	X	
Pearl Harbor ^b			X	X
Puget Sound	X	X	X	X

^aNonnuclear-powered surface vessels

^bMakes emergency repairs to all ships in the Pacific and overhauls all ships homeported in Hawaii. This shipyard did not compete for work as of the end of fiscal year 1987

Department of Defense (DOD) and Navy guidance on mobilization specifies that, to the extent possible, a competitive, commercial depot-level maintenance capability be fostered and, as required, be capable of expanding during mobilization. According to a 1985 study, about 27 private shipyards would be required early in the mobilization process.

Vessel Complexity Affects the Allocation Process

Vessels are generally classified for overhaul and repair purposes as complex, moderately complex, and noncomplex. Generally, public shipyards have overhauled the more complex combatants. The current capability of private shipyards to accommodate these types of vessels is limited.

Moderately complex vessels such as destroyers and frigates are assigned to public shipyards or are competed among qualified private shipyards, and noncomplex support-type vessels are competed among private shipyards. Work involving ships in all three categories is competed between public and private shipyards.

Fiscal Constraints Limit
Public Shipyard
Allocations

In 1974 the Navy adopted a policy, which was in line with congressional intent, to allocate no more than 70 percent of the dollar value of all alteration, overhaul, and repair work to public shipyards. Since then, the appropriation acts have directed a dollar limitation on the amount of such work, which generally equates to the prior limitation.

Selecting Ships for
Competition Between
Public and Private
Shipyards

In structuring the fiscal year 1985 competition, the Navy selected the ROHS of two amphibious transport docks (LPDs) because these ships had comparable work packages and overhaul schedules on which to base a test of competition. In fiscal year 1986, the Navy decided that all SSBN overhauls and work involving eight specifically identified vessels would be competed. The SSBNs were put into the program to improve cost controls and the execution of work involving that type of vessel. Two classes of guided-missile cruisers and certain destroyers are to be added to the program after February 1, 1988.

In fiscal year 1987, the selection process became more formalized. NAVSEA now nominates vessels for competition after considering existing guidance and mobilization base and workload concerns. The Assistant Secretary of the Navy (Shipbuilding and Logistics) now approves the ships to be competed from among the nominees.

Assigned and
Competed Work

When the competition program began, about 66 percent of the value of all overhaul and repair work was assigned to public shipyards. Since then, however, their relative share of work has declined, according to Navy estimates, and further declines are projected through fiscal year 1989. Except for the first year of the program, the percentage of all work competed between public and private shipyards has remained relatively constant, at about 10 percent. The Navy expects this percentage to remain constant; however, it also expects the total value of all such work to decline from recent levels, as shown in table 2.2.

Chapter 2
Distribution of Work Between Public and
Private Shipyards

Table 2.2: Value of Allocated and Competed Work, Fiscal Years 1985-89

(Dollars in millions)					
	Fiscal year				
	1985 ^a	1986 ^b	1987 ^b	1988 ^b	1989 ^b
Amount:					
Public	\$3,597.7	\$2,722.7	\$2,865.0	\$2,111.8	\$2,209.4
Private	1,828.2	1,585.8	1,724.1	1,596.2	1,808.5
Competed	29.4	492.6	522.9	460.5	443.7
Total	\$5,455.3	\$4,801.1	\$5,112.0	\$4,168.5	\$4,461.6
Percent:					
Public	66	57	56	51	49
Private	33	33	34	38	41
Competed	1	10	10	11	10
Total	100	100	100	100	100

^aActual

^bEstimated.

According to the Navy, the decline is due to changes in maintenance strategies. The current strategy requires scheduling shorter and more frequent maintenance on some combatants and no further overhauls for some older combatants scheduled for deactivation. Consequently, the number of ROHs decreased from 63 in fiscal year 1982 to 41 in fiscal year 1987, while the number of SRAs increased from 57 to 120.

Distribution of Competed Work

As shown in table 2.3, the Navy had competed work valued at \$822.5 million by the end of fiscal year 1987.

Table 2.3: Results of Competition, Fiscal Years 1985-87

Shipyard	Type of vessel/work					Total	Amount
	Submarines			Surface ships			
	ERP	SRA	ROH	SRA	ROH		
Public	1	6	5 ^a	2	2	16	\$656.1
Private	0	1	0	5	9	15	166.4
Total	1	7	5	7	11	31	\$822.5

^aAnother competition involving ROH work for an SSBN was canceled

Private shipyards were awarded most of the work involving surface vessels. Numerous private shipyards can compete for such work. For example, for each of the surface vessels competed, at least two and as many as ten private shipyards submitted proposals. In contrast, no more

than 2 public shipyards submitted proposals for 12 of the competitions involving this type of work. For the other six competitions, public shipyards did not submit proposals or withdrew them before award.

The higher proportion of funds awarded to public shipyards through the program is due to ROH work on SSBNS. Previously, the work was either assigned to public shipyards or allocated to the private shipyard capable of doing it. Although the assignments and allocations changed from year to year, ROH work on at least three of the five SSBNS was allocated to the private shipyard when the decision was made to compete all work involving SSBNS. The competed work involving these five vessels was estimated to cost about \$567.9 million.

Conclusions

Several factors influence the allocation of work between public and private shipyards, including the need to maintain government-owned facilities to repair complex combatant vessels. However, private shipyards have been receiving an increasing share of funds for all overhaul and repair work involving naval vessels.

The program to compete work between public and private shipyards is a relatively small portion of all overhaul and repair work. Within the program, public shipyards have been most successful in competing for work involving nuclear-powered submarines. Because ROH work involving SSBNS is costly, most of the funds provided through competition have been awarded to public shipyards. As long as public shipyards continue to win most of the competitions involving such work, they will continue receiving most of the funds allocated to the program.

On the other hand, private shipyards have been very successful in competing with public shipyards for work involving surface vessels, and numerous private shipyards compete for this type of work.

Agency Comments

In commenting on a draft of this report, DOD agreed that (1) the distribution of work between public and private shipyards is influenced by several factors, (2) most of the work awarded to public shipyards involves nuclear-powered submarines, (3) most of the work awarded to private shipyards involves surface vessels, (4) in contrast to nuclear-powered submarine work, numerous private shipyards compete for work involving surface vessels, and (5) overall, private shipyards are being allocated an increasing share of all overhaul and repair funds.

Chapter 2
Distribution of Work Between Public and
Private Shipyards

In the draft report, we stated that the Navy expects the proportion of available work to be done in private shipyards to continue to increase. In commenting on the draft report, DOD noted that the Navy's expectation of increasing the proportion of work in private shipyards depends, in part, on maintaining current congressionally approved maintenance funding levels. Further, the proportion of work done at public and private shipyards can change from year to year depending on such factors as drydock availability and fleet operational commitments. DOD also stated that since the completion of our field work the other private shipyard qualified to work on nuclear-powered submarines has been awarded competed work.

Public Shipyard Proposals Should Include All Government Costs

Navy Industrial Fund regulations require public shipyards to recover the cost of overhaul and repair work. Based on our analyses, we believe that the proposals involving SSBN-related work were prepared in accordance with applicable guidance and reflected a reasonable estimate of the shipyards' costs to do the work. However, the work is still underway, and it will not be possible to determine the accuracy of the proposals until it is completed.

Inherent differences between public and private shipyards primarily involve profit. Private shipyards must accomplish the work under firm fixed-price or fixed-price incentive contracts, and thus, they face the possibility of unexpected losses if the work has not been estimated accurately. On the other hand, public shipyards accomplish work under project orders, which are more analogous to cost-reimbursable type contracts because the government will reimburse these shipyards for all costs that exceed the fixed price. While the differences do not prevent competition, they do preclude total equity and affect the comparability of the proposals. Thus, the objective is to minimize those differences to the extent practical so that the highest possible degree of comparability can be achieved.

The Navy has instituted measures that are intended to foster a competitive environment between public and private shipyards and to ensure that public shipyards proposing the lowest costs can accomplish the work within those costs. Also, the Navy, in its comparability analyses, adds certain costs to the apparent lowest public and private shipyard proposals as a basis for certifying to the Congress that the successful bids contain comparable estimates of all direct and indirect costs. To date, however, the comparability analyses have not had a role in the award process.

Projects orders or contracts are awarded, except where mobilization base concerns prevail, to the responsible public or private shipyards, respectively, that have submitted the lowest priced proposals in accordance with the evaluation criteria contained in the solicitations. The results of the competitions we examined would not have changed had the proposals been evaluated in terms of the comparable cost estimates because the differences between the amounts stated in the lowest priced proposals from public and private shipyards were greater than any possible cost differentials included in the analyses.

In addition to the amounts proposed and the additional costs included in the comparability analyses, the government incurs other costs for operating public shipyards that are not considered in evaluating the proposals. Including these costs in the analyses would further narrow the differences between the lowest priced proposals, but not enough to change the results of the competitions we examined. We believe that all costs that can be reasonably identified and objectively quantified should be included in the comparability analyses and considered in evaluating the proposals.

Public Shipyard Cost Estimates

At the public shipyards visited, we found that the proposals were based on NAVSEA and Navy Comptroller guidance in effect at that time and developed from estimates of labor, material, and overhead.

In some instances, the proposals were adjusted to reflect management's judgment of the shipyards' current capability, contingencies, risk, and the competitive environment.

Also, for ROH work involving SSBNS, the proposals were increased to include discretionary costs for planned expenditures not directly related to doing the work. If the fixed-price incentive contracts used for ROH work are completed at a cost less than the ceiling price, all or at least some of the discretionary costs included in the proposals can be expended for such items as employee bonuses or other controllable expenditures.

For submarine-related work, we also found that the staff-day rates three shipyards used to estimate costs included a proportionate share of costs directly attributable to shipyard operations and generally were not materially different from those used for noncompeted work. The management of the fourth shipyard reasoned that certain fixed-overhead costs were covered by noncompeted work, and thus, its proposal for work involving a competed surface vessel included only estimates of the variable (i.e., incremental) costs it needed to recover.

Based on our (1) analysis of the guidance provided public shipyards, and the methodology used to estimate the number of staff-days to do the work and the composite rates for labor and overhead applied to those staff-days to estimate the cost of the work and (2) comparisons of those estimates with other competed and noncompeted work, we believe the public shipyard proposals for submarine-related work are reasonable.

However, work involving submarines is still underway, and final costs for completed work involving surface vessels are still under review.

In a previous review of overhaul costs at private shipyards, we reported¹ that the total price for 75 fixed-price contracts involving surface vessels increased from \$594 million to \$967 million, or 63 percent, between the time of award and completion of the work. The increases resulted from modifications to the original scope of work. There are two types of modifications: growth work and new work. Growth work relates to technical shortfalls in the original estimate of work requirements, and new work pertains to requirements not included in the original scope of work. We also found that 76 percent of the cost increases on fixed-price contracts was attributable to growth work. The possibility also exists for the costs of work involving the vessels included in this review to increase because of the nature of the work.

Appendix III describes our evaluation of the public shipyard proposals and the controls to help ensure accountability. It also discusses some additional costs incurred by private shipyards.

Inherent Differences

There are inherent differences between public and private shipyards, even though they are involved in the same type of work. The differences basically center around the role of profit. Some private shipyard representatives perceive firm fixed-price and fixed-price incentive contracting as unfair because, in their opinion, the work is not always clearly defined. If the costs exceed the maximum price, anticipated profits become unexpected losses.

Conversely, under fixed-price project orders, which are used to obligate appropriated funds in the same manner as contracts, the government will reimburse public shipyards for costs that exceed the price. However, our recent bid protest decision found that both types of shipyards develop their proposals under comparable degrees of uncertainty.²

¹Navy Maintenance: Costs to Overhaul Navy Ships at Private Shipyards (Jan. 9, 1986. GAO/NSIAD-86-27).

²Newport News Shipbuilding and Dry Dock Company, B-221888, July 2, 1986, 86-2 CPD ¶23, aff'd on reconsideration, B-221888.2, October 15, 1986, 86-2 CPD ¶428.

Type of Contract

Under firm fixed-price contracts, private shipyards retain all savings if the work described in the contract is accomplished at less than the proposed price and assume all costs for such work exceeding that price. Under fixed-price incentive contracts, private shipyards and the Navy share savings or losses under or over the target price—within a stated limit. The Federal Acquisition Regulation (FAR) expressly leaves to the judgment of the procuring agency the type of contract under which work will be performed.

For the competition program, public shipyards work under firm fixed-price and fixed-price incentive project orders because the government generally cannot contract with itself. The Navy Industrial Fund provides the operating capital to perform the work, and it is periodically reimbursed as work progresses. Work performed at less than the fixed price increases a shipyard's Accumulated Operating Results (an account that is similar to a private entity's retained earnings), while work accomplished at more than the fixed price decreases the account. If the loss exceeds the account's balance, the government must bear the difference. Therefore, project orders are analogous to cost-reimbursement type contracts because the government is ultimately responsible for costs that exceed the fixed price.

Description of Work

The Shipbuilders Council of America and other industry representatives have stated that for fixed-price competition to take place, the description of work must be comprehensive and clear. Specifically, the Navy's use of the phrase "normal and similar" to describe certain work involving SSBNS was questioned. We addressed this issue in our July 1986 decision and found no legal requirement that a competition must be based on specifications drafted in such detail as to completely eliminate any risk or that the Navy must remove every uncertainty. We found that the protester had not met its burden of affirmatively proving that the solicitation lacked sufficient clarity to permit competition on an equal basis or that there was any information reasonably available to the Navy that was not provided to all competitors.

Measures to Foster a
Competitive
Environment

The Navy has designed its procurement process for the competition program to help ensure that (1) public and private shipyard proposals are based on common statements of work requirements, (2) public shipyards can reasonably be expected to accomplish the work as proposed at the estimated price, and (3) successful bids include comparable estimates of

all direct and indirect costs to the Navy for accomplishing work at both public and private shipyards.

The Procurement Process

The Navy's procurement process for competed work uses as guidelines basic underlying procurement principles, including those that may be reflected in the FAR. For example, our analysis of the competitions disclosed

- all potential offerors were provided the same information (plans, drawings, specifications, and amendments),
- proposals were evaluated in accordance with the solicitation and in some cases a source selection plan intended to ensure impartial evaluation of all proposals, and
- information provided to any competing shipyard was provided to all competing shipyards.

Also, NAVSEA guidance requires that all communications from both private and public shipyards be directed only to contracting officers. We found no evidence of inappropriate communications between NAVSEA and public shipyards, and some public shipyard requests for information that were misdirected to NAVSEA officials were refused.

Limitations on Awarding Contracts and Project Orders

According to the FAR, the lowest price or cost to the government is a proper criterion on which to base awards. However, selections also can be based on the greatest value to the government. We found some instances where selections considered not only costs but also the need to promote national defense and protect the mobilization base. For example:

- A solicitation for three SSBNS specified that no shipyard could be awarded work involving more than one vessel. A public shipyard submitted the lowest proposal for two vessels. The second vessel was awarded to another public shipyard that had submitted the second lowest bid because of national defense and mobilization base concerns.
- The Navy determined that it would promote national interest to have more shipyards experienced in overhauling a certain class of vessel. A private shipyard that had been awarded work on one such vessel earlier also submitted a proposal for another vessel of that class. Therefore, that shipyard's proposal was not considered during the evaluation process.

Navy Cost Realism and Comparability Analyses

The Navy performs a cost realism analysis of the apparently lowest priced proposals from public shipyards to help ensure that the work can be accomplished at the estimated cost. This analysis is not required for private shipyard proposals. The Navy also performs a comparability analysis of the apparently low public and private shipyard proposals as a basis for making the certification required by the legislation that created the program. However, we found that the comparability analyses had played no role in the selection of successful proposals because the solicitations usually specified that awards would be based on the proposed price, except where national defense concerns prevailed.

Cost Realism Analyses

NAVSEA examines each apparently successful public shipyard proposal to determine if the shipyard can realistically accomplish the work, as proposed, at the estimated cost. The analysis is intended to determine if the proposed direct labor and overhead rates, staff-days, and material costs are reasonable.

One organization within NAVSEA evaluates previous, similar work that the shipyard has done to gauge the reasonableness and realism of the proposed staff-days and material. Another organization evaluates the shipyard's budget and year-to-date costs to assess if the proposed labor, overhead, and material cost estimates are reasonable and realistic.

One of the analyses we examined, which involved work on a surface vessel, questioned the sufficiency of the proposed overhead rate that had been determined on an incremental basis. As discussed earlier and in appendix III, shipyard officials reasoned that budgeted overhead costs would be recovered by noncompeted work and that only the additional (incremental) overhead costs generated by the competed work should be in the proposal. Had the proposal contained a proportionate share of all overhead costs, it would have been higher than the lowest private shipyard's proposal and the award may have gone to the private shipyard. The Navy later issued guidance that requires public shipyards to include a proportionate share of all overhead costs in their proposals.

Cost Comparability Analyses

When a proposal has been received from at least one public and one private shipyard, NAVSEA conducts a comparability analysis to determine if costs are comparable between the two types of shipyards. It is the Navy's basis for certifying to the Congress that the successful bid includes comparable estimates of all direct and indirect costs.

The analyses include some of the costs to the Navy that are not included in the lowest priced proposals from public and private shipyards. For the public shipyard proposal, NAVSEA adds a pro rata share of costs for military personnel, facility depreciation, workmen's compensation, and unemployment insurance, and also adds costs for the Administrative Project Officer (APO). The APO was initiated at public shipyards to rule on the compensability of changes and is independent of shipyard management. The private shipyard's proposal is increased to include a pro rata share of SUPSHIP contract administration costs.

Most costs, such as for military personnel and depreciation, are prorated to public shipyard proposals on the basis of the ratio of the number of direct labor staff-days proposed to do the competed work to the total direct labor staff-days expected to be used by the shipyard during the period. However, SUPSHIP costs (including those for military personnel) are prorated based on the ratio of the proposed price to the total dollar volume of business the SUPSHIP office administered in the most recent fiscal year.

Military Personnel Costs

After determining the number of military personnel in each pay grade employed at the public shipyard supporting its industrial activities, NAVSEA prorates these costs. The prorated costs include basic pay plus a portion of quarters allowances, permanent-change-of-station costs, incentive and special pay (such as flying, submarine, and hazardous duty allowances), and retirement.

We found that NAVSEA's comparability analyses did not include (1) all personnel support costs for a portion of the quarters, subsistence, medical, and commissary costs not included in the standard rates (6 percent of pay for officers and 18 percent of pay for enlisted personnel) and (2) leave and holiday accruals (14 percent of pay). As a result, these analyses understated military personnel costs. We recomputed the analyses and estimated that including these factors in the public shipyard proposals would have increased these costs by amounts ranging from about \$25,200 to about \$625,800.

Facility Depreciation

Equipment depreciation is included in public shipyard proposals. However, depreciation for facilities obtained with non-Navy Industrial Fund resources is not included in the proposals. Therefore, NAVSEA adds a proportionate share of this depreciation, taken from public shipyards' financial and operating statements, in the comparability analyses. We

found that based on the shipyards' data, the amounts NAVSEA included in the analyses were correct.

Workmen's Compensation

Department of Labor payments to disabled workers are centrally reimbursed by the Navy. NAVSEA determines the amount attributable to a public shipyard's proposal and prorates the cost based on the most recent annual billing that lists the amounts of compensation attributable to each naval installation. In the analyses for the proposals we reviewed, NAVSEA used the billing for the period July 1, 1984, through June 30, 1985. However, we found that NAVSEA had available and should have used the billing for July 1, 1985, through June 30, 1986—the most recent billing—for one comparability analysis. Our recomputation using the later billing reduced NAVSEA's estimate by about \$133,000.

Unemployment Insurance

Each state centrally charges the Navy for the total unemployment compensation paid the previous quarter that is attributable to all naval activities in the state. NAVSEA prorates the cost to public shipyards based on the proportion of the total payroll for each shipyard and the total Navy payroll in the state. The amount is then prorated to the public shipyard proposals on the basis of the ratio of the number of direct labor staff-days proposed to do competed work to the total direct labor staff-days expected to be used by the shipyard during the period. The amount reviewed has been reasonably determined for the proposals that we reviewed.

Administrative Project Officer Costs

Comparability analyses include both military and civilian personnel costs at the public shipyards. The costs are based on earlier experience and are prorated over the period of the proposed work. However, we found that NAVSEA did not include APO costs for two proposals and that amounts for the other vessels were understated because the rates used for military personnel were understated. Our recomputation of APO costs for proposals reviewed increased the costs by amounts ranging from about \$14,700 to about \$60,000.

SUPSHIP Costs

These costs include SUPSHIP's budgeted operating costs plus military personnel costs incurred by that office. However, we found that NAVSEA used the same methodology to compute military personnel costs; that is, it excluded certain personnel support and leave and holiday costs. Our recomputation increased the private shipyards' comparability costs by

amounts ranging from about \$300 to about \$110,700 for the proposals reviewed.

Comparability Analyses Play No Role in Awarding Competed Work

As the program is now implemented, competed work is awarded to the public or private shipyard primarily on the basis of the lowest amount proposed, although national defense and mobilization base concerns can override that criterion. The comparability analyses served only as a basis for the certification required by the legislation. However, so far, the analyses would not have changed any awards because the difference between costs in the lowest priced proposals from public and private shipyards was more than the cost adjustments.

Estimates of Additional Costs

We found that additional costs that can be attributed to the federal government are not considered in the comparability analyses. We computed two of these costs for the winning public shipyard proposals reviewed to determine if inclusion of such costs would have affected the outcome of the competitions. (Our analyses, which are based on information that DOD considers for official use only, are being provided in a restricted supplement to this report, GAO/NSIAD-88-109S.) Our analyses show the differences between the lowest priced public and private shipyard proposals as submitted and the proposals after adding NAVSEA's comparable cost estimates, as well as

- our refinement of NAVSEA's estimates as discussed above,
- our estimates of potential additional costs of operating and maintaining the Navy supply system, and
- our estimates of full costs of retirement for public shipyard civilian employees.

The analyses show that including the additional cost estimates would not have changed the outcome of the competitions reviewed, but the additional costs would have narrowed the differences between the lowest priced public and private shipyard proposals.

Additional Costs to the Navy and Federal Government

Public shipyards have access to Navy supply system inventories for material. The economies of scale available through such a system could provide a competitive advantage to public shipyards. The prices charged these shipyards for material are comprised of several elements. However, there is no prescribed surcharge passed on to the shipyards or

customers for operating and maintaining the Navy supply system because it is funded through separate appropriations.

To apply such a surcharge for the purpose of competition would require (1) a determination of the cost to operate and maintain the Navy supply system and (2) an analysis of the source and cost of the various types of material used to accomplish overhaul and repair work. We did not make such a determination or an analysis during our review.

OMB's Circular A-76, however, provides guidance concerning the surcharge applicable to material obtainable from other inventory managers. According to the circular, 11 percent should be added to the cost of common use, commercially available items obtained through the General Services Administration. The cost of material for which the Defense Logistics Agency (DLA) has procurement, receiving, storage, and shipping responsibility should be increased by 24.5 percent.

We applied the DLA surcharge to the material costs in the public shipyard proposals reviewed, reasoning that the Navy would be more analogous to DLA than to the General Services Administration. The purpose was to obtain an estimate of the potential effect such costs could have on public shipyard proposals, assuming the Navy supply system's operation and maintenance costs were similar to DLA's. Applying DLA's surcharge to the material cost estimates would have increased the public shipyards' proposals by amounts ranging from about \$0.4 million to about \$4.0 million.

Private shipyards also are permitted to draw on Navy inventories in limited circumstances when lead time or lack of a source precludes commercial acquisitions. For the purpose of equity, their proposals also would have to be adjusted for such procurements to the extent they can be determined. None of the private shipyards' proposals related to the examples cited indicated the extent they would use Navy inventories.

Also, public shipyard labor costs include only the Navy's contribution for civilian employee retirement. The full cost to the government exceeds that contribution. Under the new Federal Employees' Retirement System, agency and employee contributions are required to cover full costs. To determine the difference between the cost to the Navy and the cost to the government for civilian retirement, we calculated additional amounts applicable to the proposals we reviewed by using the 21.7 percent composite factor recommended in OMB Circular A-76. Applying the composite factor for retirement would have increased the

public shipyards' proposals by amounts ranging from about \$0.3 million to about \$8.6 million.

Conclusions

Overall, public shipyard competitive proposals for submarine-related work appear to be generally based on reasonable estimates of the cost of that work. However, consistent with private shipyard bidding strategies, public shipyard managers can accept or adjust the original estimate based on their assessment of shipyard capabilities, contingencies, risk, and the competitive environment. Even with these adjustments, the differences between the rates used for competed and noncompeted work were not materially different.

Work on the vessels we reviewed is still underway at the public shipyards, and final costs for other completed work are still to be determined. However, based on our review of the proposals for work involving submarines and our analysis of the estimated staff-days and rates used for similar work, the proposals reviewed appeared reasonable. The proposal we reviewed for work involving a surface vessel did not include a proportionate share of overhead costs.

There are inherent differences between public and private shipyards. For example, in the long term, private shipyards must recover all costs and seek to realize a profit that is at least commensurate with other investment opportunities, while public shipyards can continue to operate without making a profit. While the differences do not prevent competition, they do hamper equity, the ability of private shipyards to compete on an equal footing with public shipyards, and the comparability of the proposals.

The legislation authorizing the competition program requires a certification that successful proposals include comparable estimates of all direct and indirect costs for both public and private shipyards. The Navy has instituted a process intended to help ensure that public and private shipyard proposals are based on comparable information and other measures to promote a competitive environment. However, there are attributable costs to the federal government, in addition to those incurred by public shipyards to do competed work. These costs are not being included in the Navy's comparability analyses on which the certifications are based, nor are they being considered in the evaluation of proposals. Although the additional costs we identified would not have changed the results of the competitions we reviewed, they would have narrowed the differences and increased the comparability of the

proposals. As the program is now being implemented, the value of the certifications is limited because awards are generally based on amounts proposed by public and private shipyards, not on the comparable cost estimates.

To the extent cost or price is evaluated in awarding work under the competition program, we believe that the solicitation should state that the evaluation criterion is the least cost to the federal government (rather than to the Navy). The certifications should be made and the proposals should be evaluated on the basis of all reasonably identifiable and objectively quantifiable costs that can be attributed to the federal government. This would be consistent with the practice public shipyards are required to follow in developing competitive proposals. They are required to include labor and a proportionate share of overhead costs attributable to the work, although these costs may not change significantly in the short term if the work is awarded to a private shipyard. For public shipyards, the costs to the government should include the amount proposed and (1) those costs now included in the comparability analyses (as refined for the additional types of costs we identified), (2) the cost to operate and maintain the Navy supply system, and (3) the full cost of retirement for civilian shipyard personnel. For private shipyards, these costs should include the proposed price, the government's cost to administer the contract, and a share of the costs to operate and maintain the Navy supply system, to the extent the system is used and the cost can be determined during the evaluation process. This approach will better ensure that successful proposals for work competed under the program include comparable estimates of all direct and indirect costs.

Recommendations

We recommend that the Secretary of Defense direct the Secretary of the Navy to (1) base the certifications of public and private shipyard competitive proposals on all reasonably identifiable and objectively quantifiable costs to the federal government and (2) solicit and evaluate proposals and award competed work on that basis.

Agency Comments

DOD agreed with our findings and analysis. DOD also agreed that inherent differences exist between public and private shipyards, primarily centering around the role of profit and while the differences do not preclude competition, they do preclude total equity and affect the comparability of the proposals.

DOD also concurred with our recommendations, saying that the certifications of competitive proposals should include all reasonably identifiable and objectively quantifiable costs to the government and that competitive proposals should be evaluated on that basis. DOD stated that the Navy is investigating allowing both public and private shipyards equal access to the Navy supply system, thus yielding no advantage to either type of shipyard. Also, the Navy will devise a computation method in consonance with the OMB Circular A-76 cost comparison methodology for retirement costs. DOD also concurred with our proposed refinement of the methodology for computing military personnel costs. DOD expects actions we recommended to be implemented beginning with requests for proposals issued in fiscal year 1989.

Assessments of the Expected Benefits of Competition

The Navy perceives competition between public and private shipyards as having the potential of producing important benefits to the government, including lower repair costs, improved quality of work performed, and better adherence to ship schedules.

The overall results and impact of the Navy's shipyard competition program have not been determined. However, the Navy has made some limited assessments of the expected benefits. In March 1987 the Navy claimed that it had saved \$200 million from competition. We evaluated this estimate and found it does not take into account a number of factors that affect its accuracy and claim that the savings are wholly attributable to competition.

Key officials we interviewed at four public shipyards generally believe that the competition program has helped to reduce costs. Most also think that competition has not changed adherence to schedule. Also, about half believe that work quality has improved.

In November 1987 the Navy submitted a congressionally requested report on the results of a fiscal year 1985 two-ship test competition. The report's overall conclusion was that the public shipyard's costs were about 8 percent higher than the private shipyard's costs. Further, quality and schedule performance of the two shipyards was about equal.

Claim of \$200 Million Savings

On March 17, 1987, the Assistant Secretary of the Navy (Shipbuilding and Logistics) discussed the Navy's public/private competition policies before a joint hearing of the Subcommittee on Seapower and Strategic and Critical Materials and the Subcommittee on Readiness, House Committee on Armed Services. At that time, he stated that 21 competitions had been conducted and that these competitions had yielded an estimated savings of \$200 million compared to previous cost experience with both the public and private shipyards. He also stated that bids for SSBN overhauls had fallen an average of 27 percent from previous overhaul costs with the introduction of competition.

In his fiscal year 1986 report to the Congress, the Competition Advocate General of the Navy also addressed the program. He stated:

"The full impact of public/private competition for ship repair has yet to be quantified, but an estimated \$200 million in initial dollar savings, as well as improved quality and better adherence to schedule is expected."

Basis for Estimated Savings

The \$200 million savings estimate, which was prepared in the Office of the Assistant Secretary, includes \$150 million in savings for the overhaul of five submarines and \$50 million in savings for the overhaul of six surface ships. Different methodologies were used for the two types of ships because, according to Navy officials, submarine work packages are better defined and historically have been more consistent than surface ship work packages.

Submarine Methodology

The submarine portion of the estimate was derived from a NAVSEA presentation to the Under Secretary of the Navy in March 1987. The presentation contrasted the (1) average target price or award amount (\$113.6 million) of the five SSBN overhauls competed as of February 1987 and (2) average price (\$153.5 million) reported in February 1987 for the last five SSBNs overhauled before the competition program. To make the estimate conservative, the difference in price per SSBN of \$39.9 million (about 26 percent) was reduced by the Office of the Assistant Secretary to \$30 million, for a total savings of \$150 million. The savings per SSBN of \$39.9 million was computed as shown in table 4.1.

Table 4.1: Basis for Savings Estimate on SSBN Overhauls

(Dollars in millions)

Type of overhaul/ship	Target price/award amount	Average price
Noncompeted:		
SSBNs 629, 634, 631, 641, and 645		\$153.5
Competed:		
USS Benjamin Franklin (SSBN 640)	\$111.9	
USS George Bancroft (SSBN 643)	112.2	
USS Kamehameha (SSBN 642)	112.1	
USS Alexander Hamilton (SSBN 617)	110.7	
USS Woodrow Wilson (SSBN 624)	120.9	
Total/average	\$567.8	113.6
Difference in average price or savings		\$39.9

Surface Ship Methodology

The surface ship portion of the estimate was calculated in the Office of the Assistant Secretary. The methodology used was to total, for the last six overhauls competed, the differences between the government's cost estimates to do the work (\$155.6 million) and the award amounts (\$101.5 million). In the interest of being conservative, the difference of \$54.1 million (about 35 percent) was reduced to \$50 million.

GAO's Evaluation of
Savings

We evaluated the Navy's \$200 million estimate of savings and found that it does not take into account a number of factors that affect its accuracy.

The methodologies for estimating savings do not consider the impact of the Navy's other cost reduction efforts that may have created savings in public shipyards during this period, thereby enabling the shipyards to propose lower prices. For example, the Navy is implementing about 130 recommendations made by Coopers and Lybrand as a result of its independent assessment to improve public shipyard operations. The company did not provide a specific estimate of savings that could be realized through implementation of the recommendations. These recommendations are being implemented through the Naval Industrial Improvement Program, which focuses on initiatives to not only improve cost control, work scheduling/execution practices, material forecasting and availability, and strategic planning but also reduce overhead requirements.

Other examples of cost reduction efforts during this period involve a budget reduction and program changes initiated by public shipyards. For fiscal year 1987, the amount estimated for public shipyard operations was reduced by \$500 million during the annual budget development process. Key officials we interviewed at four public shipyards identified over 15 important, locally initiated program changes that they feel have significantly reduced overhaul costs at their shipyards since January 1985, about when the competition program began. The changes involve, for example, work planning, work team organization, labor force composition, management structures, and management information systems.

We also noted additional factors that need to be considered in the submarine savings estimate. We found that the Navy's average noncompeted price of \$153.5 million was based on cost/price data reported in February 1987 and that four of the five SSBNS were being overhauled in public shipyards. On each of the four, the Navy used either the fixed price to the fleet customer, which was established earlier by agreement with the shipyard when about 50 percent of the overhaul was completed, or a higher amount. Neither of these represented the shipyard's latest actual predicted end cost to accomplish the work, which would have been more comparable to a competed ship's target price award amount. Had the latest predicted end cost been used on the four SSBNS, the average noncompeted price of \$153.5 million would have been reduced by \$8 million (about 5.2 percent) to \$145.5 million. This, in turn, would have reduced the \$39.9 million difference in average price

or savings per SSBN by \$8 million (about 20 percent) to \$31.9 million, which is only slightly higher than the \$30 million conservative estimate made by the Office of the Assistant Secretary.

We believe that the Navy's methodology used to estimate the savings from submarine-related work also is subject to question because it compares cost/price data (1) from significantly different points of completion during the overhaul and (2) for different groups of SSBNs that vary in age, configuration, condition, and time since their last overhaul. Some key public shipyard officials we interviewed, who are familiar with SSBNs, estimated that these differences might cause SSBN overhaul costs to vary by as much as 10 or 15 percent.

We also noted that the surface ship methodology needed to consider an additional factor—award amounts before competition were historically significantly lower than government estimates. In the January 1986 report discussed in chapter 3, we noted that on 71 of 75 fixed-price contracts for surface ship overhauls performed from fiscal year 1982 through May 1985, the average award amount of 11 contracting offices was 31 percent lower than the average government estimate. With the Navy's surface ship methodology, the average award amount for competed ships was about 35 percent lower than the average government estimate. These results suggest that the government estimate may not be a reliable baseline for measuring cost savings from competition.

Evaluation of Competition by Public Shipyard Officials

To provide some insight into the effects of public/private competition at the public shipyard level, we interviewed 16 key officials at 4 public shipyards who had broad overviews of their shipyards' operations. During these interviews we sought their opinions about the effects of the program on ship overhaul costs, schedule adherence, and quality of work. Almost all of the officials believed that the competition program had somewhat reduced costs. Most thought that competition had not changed adherence to schedule. About half believed that work quality had improved, but half believed it had not.

Effect of Competition on Overhaul Costs

The officials provided their impressions about the impact of the competition program on overhaul costs at their shipyards. Although the 16 officials stated that they did not have any studies or analyses on the effect of competition, almost all believed that competition resulted in at least some net reduction in overhaul costs. Most, however, either could

not estimate the amount of savings or provided heavily qualified savings estimates, which ranged from as little as 1 percent to as much as 20 percent.

A number of factors made it difficult to estimate the amount of savings. One factor is that the competition program is thought to have different effects on competed and noncompeted ships. Although the officials generally agreed that competition created savings on competed ships and, as a result, net savings for the shipyards, they did not agree about savings on noncompeted ships. They were about equally divided between believing that the program had reduced costs for noncompeted ships and believing that the program had not changed costs on noncompeted ships. One official thought that the competition program had increased costs by 1 to 2 percent for noncompeted ships.

Another difficulty in estimating savings from competition concerns the additional costs introduced by the competition program itself. Almost all of the officials mentioned some additional costs and problems associated with the program at their shipyards. The two most often mentioned were the (1) cost and time of preparing proposals and (2) reduced advance planning time. Some officials also mentioned problems in obtaining agreement about the content of work packages, the cost of administering competitive work, and the uncertainties introduced into plans for long-term staffing levels.

A further difficulty in estimating savings from competition is the potential impact of many other management initiatives for reducing costs that have been implemented since the program was introduced in 1985. All officials reported that costs had been affected by other Navy-initiated changes, such as the Naval Industrial Improvement Program and locally initiated program changes. These officials also stated that additional estimating difficulties arise from the (1) fact that work on competed ships at their shipyards is not yet complete, (2) small number of ship overhauls that can be analyzed, and (3) uncertainty about the accuracy of the projected savings for the competed ships.

Effect of Competition on Adherence to Schedule

We asked officials for their opinions on whether the competition program had improved, reduced, or not changed adherence to schedule for overhauls in their shipyards. Their opinions were based on their personal experiences with competed vessels, not on analyses of the effect of competition on adherence to schedule. Most of the officials thought that the program had not changed their shipyards' adherence to schedule. A

few believed that adherence to schedule had slightly or moderately worsened. Almost all reported that adherence to schedule would not be more heavily emphasized for competed than for noncompeted ships.

Effect of Competition on Quality of Work

The officials also provided us their impressions about whether the competition program had improved, reduced, or not changed work quality on overhauls. Their impressions were not based on analyses of the effect of competition on work quality. About half believed that work quality had improved, while half believed it had not changed. Some cited figures on the reduced amount of rework to suggest that there had been recent improvements in quality and accompanying reductions in costs. Almost all said that work quality would not be more heavily emphasized for competed than for noncompeted ships.

Report on Test Competition in Fiscal Year 1985

The Department of Defense Appropriations Act, 1985 provided funds for a test program to acquire the overhaul of two or more vessels by competition between public and private shipyards. Additional congressional direction required the Secretary of the Navy to report the test results to the Senate Committee on Appropriations and to provide an assessment of competition on the public and private shipyard industrial base. In response, NAVSEA structured a test program to examine and report on the implications and potential benefits of competition between public and private shipyards.

NAVSEA devised its plan for conducting the competition so that each sector would overhaul one ship. The Navy's competitive test involved the regular overhauls of the USS Duluth (LPD 6) and the USS Cleveland (LPD 7), which were homeported on the west coast and had comparable work packages and overhaul schedules. Under the plan, NAVSEA issued a solicitation for the USS Duluth to both public and private shipyards on the west coast. A fixed-price incentive contract was awarded August 19, 1985, to Northwest Marine Iron Works of Portland, Oregon, which was the lowest priced, technically qualified private sector offeror, for a target price of about \$12.3 million and a ceiling price of about \$16.0 million. On April 7, 1986, NAVSEA assigned the USS Cleveland to the lowest priced, technically qualified public sector offeror—Long Beach Naval Shipyard—for a negotiated target price of about \$23.8 million and a ceiling price of about \$31.0 million.

According to NAVSEA's plan for the test, a "winner" was to be determined after evaluation of final cost data, quality inspection of the ships, and

review of schedules. Each shipyard's performance was reviewed from an in-process and post-overhaul material readiness perspective. The Navy submitted its report on the test competition on November 16, 1987. Instead of declaring a winner, the report's overall conclusion was that cost of performance showed that the public shipyard's costs were slightly higher, by about 8 percent, than the private sector shipyard's. Also, quality and schedule performance of the shipyards was approximately equal.

Costs for both ships were monitored during performance by the Defense Contract Audit Agency and the Naval Audit Service (NAS). According to the report, the private shipyard's cost to overhaul the USS Duluth was \$24.5 million and the public shipyard's cost to overhaul the USS Cleveland was \$28.8 million. The two overhauls were not identical in scope and the government estimate was used as a normalizing factor. The cost of the work at the public shipyard was determined to be about 8 percent higher than the cost of the work at the private shipyard.

It was further reported that all of the work at both shipyards may not be compensable. Cost data are the result of preliminary audit results from data available through May 1987. Those data show that the private shipyard's reported costs exceeded the amended contract ceiling price by about \$4 million, and the private shipyard has filed a claim against the Navy for \$6.4 million. However, the outcome of the claim will not be known for some time. The report shows the revised target and ceiling prices for the USS Duluth to be about \$15.8 million and about \$20.5 million, respectively. Similarly, the revised target and ceiling prices for the USS Cleveland were about \$24.7 million and about \$32.1 million, respectively.

The quality of workmanship by the shipyards was reported to be equal. However, the report noted that the public shipyard accepted responsibility for guarantee item correction more liberally than did the private shipyard.

From a schedule performance viewpoint, the report stated that both shipyards performed well. The overhauls of the USS Duluth and the USS Cleveland were completed 4 days and 33 days, respectively, ahead of schedule.

Conclusions

The Navy expects competition between public and private shipyards to result in major cost savings and other benefits to the government. These

benefits, however, are difficult to quantify. One reason for this is that the impact of the competition program cannot be clearly distinguished from the impact of other management initiatives and other variables that affect shipyard performance and overhaul and repair costs. Also, little final cost/price and other data are available for analysis on competed ships at this time.

Almost all of the public shipyard officials we interviewed, however, believe that some savings have occurred from competition. Their opinions are divided as to whether the program also has improved work quality. Most of the officials think that adherence to schedule has not changed.

Although the benefits of competition, including cost savings, are not clearly measurable or supportable at this time, reasonably accurate assessments of the program are necessary to ensure that it is being effectively carried out and is achieving the benefits intended. Although such assessments can be made on an interim basis when contracts and project orders are awarded, we believe greater confidence can be placed in assessments made after more competed work is complete and final cost/price and other data are available for analysis.

Agency Comments

In commenting on a draft of this report, DOD agreed that other factors, particularly the efficiencies achieved through the Naval Industrial Improvement Program, affect the accuracy of the Navy's \$200 million claimed savings from competition. DOD maintained, however, that the Navy is saving money and, as an example, it cited the overhaul of the USS Benjamin Franklin (SSBN 640) as being over 75 percent complete and on target to save in excess of \$30 million over the performing public shipyard's previous experience. DOD said that competition has been a catalyst for efficiencies that have occurred at public shipyards and that, while the precise amount is not known, the Navy's estimate attributing about \$200 million of the savings to competition is reasonable. Finally, DOD expressed the view that competition has had a positive effect on quality and a neutral effect on schedule.

Request Letter

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Congress of the United States
House of Representatives
Washington, DC 20515
April 1, 1986

Honorable Charles A. Bowsher
Comptroller General of the United States
General Accounting Office
441 G Street, N.W.
Washington, D.C. 20548

Dear Mr. Bowsher:

We hereby request the General Accounting Office to conduct an investigation as to whether it is possible for the United States Department of the Navy to establish meaningful, realistic, and equitable competition between private shipyards and public naval shipyards for overhaul of naval vessels.

We understand that naval shipyards are a vital part of our shipbuilding mobilization base and that appropriate overhaul and repair work should be assigned the public yards. However, the assignment of work on the basis of "competition" with private yards appears singularly unfair to private yards. The inherent difference between a private sector entity and a government-owned and operated one likely will make any "competition" unrealistic and inequitable. Certainly, if this is not the case, it is incontrovertible that the ground rules of the competition must be designed and administered in a manner that minimizes the risk of inequity.

To compel a private sector shipyard to bid on a "fixed fee" basis for a complex overhaul of a vessel, when the scope of the work is by its very nature undefined or at least ill-defined, is extremely unfair. The private entity's bid must protect it from the unavoidable financial risk of cost overruns. For a government-owned and operated shipyard, there is no similar economic risk.

We ask that you thoroughly study the issue of whether there can be a realistic and equitable competition for overhaul work between private and public shipyards, and if so, what specific, detailed ground rules are essential to any such competition being realistic and fair.

Sincerely,


Herbert H. Bateman
Member of Congress


G.V. (Sonny) Montgomery
Member of Congress

Appendix I
Request Letter

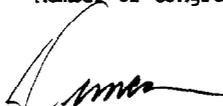
Honorable Charles A. Bowsher
April 1, 1986
Page 2



Trent Lott
Member of Congress



Corinne C. (Lindy) Boggs
Member of Congress



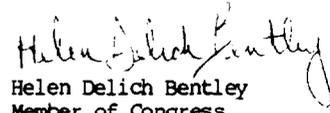
Duncan Hunter
Member of Congress



W.J. (Bill) Tauzin
Member of Congress



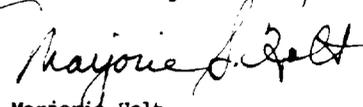
John Breaux
Member of Congress



Helen Delich Bentley
Member of Congress



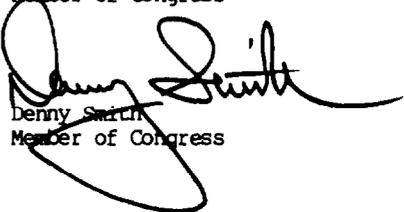
Roy Dyson
Member of Congress



Marjorie Holt
Member of Congress



William Carney
Member of Congress



Denny Smith
Member of Congress



Sonny Callahan
Member of Congress

Appendix I
Request Letter

Honorable Charles A. Bowsher
April 1, 1986
Page 3

P.S.

In addition to the aforementioned, the following represents pertinent background information along with specific questions and issues we would also like you to address.

Public Law 99-190, signed by the President, pursuant to H.J. Resolution 465, December 10, 1985, provided appropriations for Fiscal year 1986. Conference Report 99-443 (99th Congress, 1st Session, December 16, 1985) states at page 5:

"That of the total amount of this appropriation made available for the alteration, overhaul and repair of naval vessels, not more than \$3,650,000,000 shall be available for the performance of such work in Navy shipyards. Provided, further, that from the amounts of this appropriation for the alteration, overhaul and repair of naval vessels, funds shall be available for a test program to acquire the overhaul of four or more vessels by competition between public and private shipyards. The Secretary of the Navy shall certify, prior to award of a contract under this test, that the successful bid includes comparable estimates of all direct and indirect costs for both public and private shipyards."

The Navy has begun this test program by soliciting competition for the overhaul of two nuclear submarines, SSBN-640 and SSBN-643. Current plans of the Navy include an additional number of overhauls to be competed between public and private shipyards. However, the law does not require the Navy to report to Congress on the results of this test program. The Navy, apparently, has issued no guidelines or regulations under which this competition will take place. It is important to determine if this Congressional mandate of "competition" between public and private shipyards is being conducted in a fair and consistent manner. In this regard, questions have been raised concerning the Navy's approach in calculating the costs to be used in the evaluation and determination of the successful competitor for each of the overhauls. In a public and private yard, the GAO, in its report LCD-78-435 of 1978, stated that the Navy had seriously "understated the estimated cost" at the Navy yard. Clearly, an objective review by the GAO is needed to effectively resolve these questions. Consequently, we respectfully request a full GAO review and study of the following areas with corresponding questions:

1. Competition Methodology

- a. If the Navy yard incurs costs aggregating the amount of a fixed price project order, but the work required by the project order is not complete, is the Navy yard required to complete the work? If yes, what are the sources of funds required to pay for that completion? If not, how and by whom is the overhaul completed?

Honorable Charles A. Bowsher
April 1, 1986
Page 4

- b. What type of contract should be utilized by the Navy yard in a competition with a private yard? What types are available for use in a public yard?
- c. Since the Navy will, in effect, be both evaluator and competitor, is there a system in existence which assures the integrity of the process to the extent that a free and open competition is actually achieved?

2. Pricing

- a. What criteria have been or will be established by the Navy to assure that all direct and indirect are considered in Navy yard estimates?
- b. How are overhead costs at Navy yards treated? Are they being fairly allocated to this work?
- c. Are the facility and capital equipment costs in the Navy yard overhead charges on the repair work included in a way that a reasonable share is allocated to each overhaul project in a manner comparable with that utilized by private yards under cost accounting standards?
- d. If military personnel are utilized in performance of repair work, what procedures will the Navy follow to assure that such costs are included in the Navy yard estimates and in those costs charged to the project order? Are these costs part of or in addition to the funds appropriated by Congress for the overhaul and repair work of naval vessels in naval shipyards?
- e. How are facility maintenance costs treated at Navy yards; i.e., are they allocated to the repair project?
- f. Are the costs of support functions, such as EEO, small business, security, etc., identified and included in the Navy yard estimates of cost?
- g. Since a Navy yard is essentially on a cost reimbursement basis and a private yard on a progress payment basis, has the Navy accounted for this difference in payment in order to assure that proposals are evaluated on a fair baseline? If so, how?
- h. Are appropriate military and Navy civilian retirement costs included in the Navy yard estimates?
- i. If the public yard requires additional personnel, has the Navy made a determination of such cost for training and, if so, have such costs been included in Navy yard estimates?

Appendix I
Request Letter

Honorable Charles A. Bowsher
April 1, 1986
Page 5

- j. Has the Navy performed a cost realism study of the overhauls?
- k. What direction and guidelines are being communicated to the Navy yards by higher headquarters regarding calculation of the Navy yard costs?
- l. For the above identified costs, and for any others which are not enumerated herein, what procedure has the Navy established to assure that the public and private yards are placed on a comparable cost basis for evaluation purposes? Is the Navy's procedure equivalent to that a procurement agency is required by the Federal Acquisition Regulation to comply with in making determinations for award of contracts to the lowest responsible offeror? Please describe all material differences.
- m. The law requires that the Secretary of the Navy shall certify that the successful bid includes comparable cost estimates of all direct and indirect costs for both public and private shipyards. Has such certification been made to date?

All aspects of the competition between private and public yards for overhaul of Navy ships need to be fully considered in the GAO review and study requested by this letter. In order for such efforts to be accomplished in a truly cost-effective manner, contracting must be performed under free and open competition rules which assure that the integrity of the process is maintained at the highest levels. In other words, the Government must assure that both parties to the competition are on the same level playing field. We urge your review on this basis and look forward to your report.

List of Vessels Competed, Fiscal Years 1985 Through 1987

Dollars in thousands			
Vessel Name (USS)/Hull No.	Successful offeror	Amount	
		Public	Private
Surface Ships			
Duluth (LPD 6)	Northwest Marine Iron Works Portland, Oreg.		\$12,282
Cleveland (LPD 7)	Long Beach Naval Shipyard Long Beach, Calif.	\$23,823	
Jarrett (FFG 33)	Long Beach Naval Shipyard Long Beach, Calif.	1,603	
L. Y. Spear (AS 36)	Norfolk Shipbuilding & Drydock Corp. Norfolk, Va.		18,431
Fort Fisher (LSD 40)	Lockport Marine Co. Portland, Oreg.		15,403
Mahan (DDG 42)	Metro Machine Corp. Norfolk, Va.		13,793
Albert David (FF 1050)	National Steel & Shipbuilding Co. San Diego, Calif.		14,574
O'Callahan (FF 1051)	Todd Pacific Shipyards, Seattle Div. Seattle, Wash.		16,627
John A. Moore (FFG 19)	Southwest Marine, Inc. Terminal Island, Calif.		6,065
Clifton Sprague (FFG 16)	Philadelphia Naval Shipyard Philadelphia, Pa.	4,452	
Fletcher (DD 992)	Long Beach Naval Shipyard Long Beach, Calif.	22,698	
Farragut (DDG 37)	Norfolk Shipbuilding & Drydock Corp. Norfolk, Va.		2,488
Paul F. Foster (DD 964)	Northwest Marine Iron Works Portland, Oreg.		26,423
Santa Barbara (AE 28)	Metal Trades, Inc. Hollywood, S.C.		2,172
Brumby (FF 1044)	Bath Iron Works Corp. Bath, Maine		14,501
Coontz (DDG 40)	Metro Machine Corp. Norfolk, Va.		1,585
Trippe (FF 1075)	General Ship Corp. East Boston, Mass.		3,801
Prairie (AD 15)	Southwest Marine, Inc. Terminal Island, Calif.		7,157
Total		\$52,576	\$160,302

(continued)

Appendix II
List of Vessels Competed, Fiscal Years 1985
Through 1987

Vessel Name (USS)/Hull No.	Successful offeror	Amount	
		Public	Private
Submarines			
Benjamin Franklin (SSBN 640)	Charleston Naval Shipyard Charleston, S.C.	111,950	
George Bancroft (SSBN 643)	Charleston Naval Shipyard Charleston, S.C.	112,216	
Lafayette (SSBN 616)	Portsmouth Naval Shipyard Portsmouth, N.H.	6,412	
Augusta (SSN 710)	Portsmouth Naval Shipyard Portsmouth, N.H.	5,729	
Woodrow Wilson (SSBN 624)	Charleston Naval Shipyard Charleston, S.C.	120,928	
Kamehameha (SSBN 642)	Portsmouth Naval Shipyard Portsmouth, N.H.	112,100	
Alexander Hamilton (SSBN 617)	Puget Sound Naval Shipyard Bremerton, Wash.	110,714	
City of Corpus Christi (SSN 705)	Portsmouth Naval Shipyard Portsmouth, N.H.	6,382	
Lapon (SSN 661)	Norfolk Naval Shipyard Portsmouth, Va.	2,677	
Norfolk (SSN 714)	Norfolk Naval Shipyard Portsmouth, Va.	3,026	
Providence (SSN 719)	General Dynamics Corp., Electric Boat Div. Groton, Conn.		6,100
Albuquerque (SSN 706) Philadelphia (SSN 690)	Portsmouth Naval Shipyard Portsmouth, N.H.	11,416	
Total		\$603,550	\$6,100
Total		\$656,126	\$166,402

Public and Private Shipyard Proposals

Public shipyard proposals are derived basically from estimates of labor, overhead, and material. The composite estimate can be adjusted by shipyard management. However, there are internal controls to help ensure that costs are properly charged and that the work is accomplished as required.

The following sections describe (1) our evaluations of the public shipyard proposals reviewed and (2) some of the additional types of costs that private shipyards can incur. Some private shipyard representatives believe the proposals should be adjusted for such costs. However, the legislation authorizing the competition program does not require such adjustments to private or public shipyard proposals.

Public Shipyard Cost Estimates

Proposals are based primarily on the number of staff-days that the public shipyard expects to use to do the work. The composite rates applied to those staff-day estimates include costs for direct labor and overhead (indirect production and general and administrative costs). Direct material is estimated separately. The following sections discuss

- NAVSEA guidance for preparing proposals;
- staff-day, labor, overhead, and material estimates;
- extent proposals reflect prior experience;
- managerial judgment that can change the estimates; and
- controls to help ensure accountability.

Guidance to Public Shipyards

Before competition, each public shipyard's workload was negotiated and decided at NAVSEA scheduling and planning conferences. To estimate the cost of noncompeted work, the shipyards applied stabilized manday rates (SMRS) to the estimated number of staff-days. The rates, which were approved by NAVSEA and set so no profit would be realized, were a composite estimate of labor, material, and overhead costs derived from the public shipyards' budgets. Material costs are no longer included in the composite rates; they are now estimated separately and billed directly to the customer.

When competition started, public shipyards were unfamiliar with the solicitation process and the preparation of competitive proposals. Accordingly, they based their cost estimates on Navy Industrial Fund regulations, which were supplemented by policy guidance from NAVSEA and the Navy Comptroller and, in some cases, on advice from consultants.

The Navy subsequently issued a series of instructions on developing competitive proposals. These included guidance on removing costs not directly related to ship maintenance from the staff-day rates. They also included procedures for developing proposals using incremental costs, but in mid-1987 the Navy prohibited this practice. The proposal must now include its share of all overhead costs.

The public shipyard proposals for SSBN-related work reviewed included allowances for discretionary costs, such as employee bonuses, employee service programs, and facility and equipment investments. The shipyards will be allowed all or at least part of these costs to the extent that the total cost to do competed work does not exceed the ceiling price of the fixed-price incentive project orders.

Removal of Overhead Costs Not Related to Shipwork

Part of the guidance given to the public shipyards refines calculating overhead costs. Before competition, the Navy asked consultants to review public shipyard operations, management, and accounting practices. They found that the rates these shipyards used were based on some costs that were unrelated to the shipyards' industrial mission, which caused the cost of work to be overstated.

In November 1985 the Navy began identifying such costs, and in October 1986 it issued a list of items that would be excluded or partially excluded. These costs are now funded directly by NAVSEA. They include costs for mobilization facilities and equipment, base operating support for tenant activities, and public shipyard-unique programs, such as internal control programs and criminal investigative activities.

Estimating Staff-Days to Accomplish Work

The staff-day estimates we reviewed were developed in essentially the same manner as those for noncompeted work. First, shipyard personnel separated the proposed work into individual tasks. Next, they used a combination of engineering and historical standards, experience, and professional judgment to estimate the number of staff-days for each task. We reviewed estimates for 18,883 manhours included in a public shipyard proposal and found 25 percent of the estimates was based on engineering standards, 20 percent on historical standards, and 55 percent on professional judgment.

These estimates are adjusted by individual work centers to allow for material delays and other labor inefficiencies. Generally, for the submarine-related proposals we reviewed, the adjustments increased the labor

estimates. Lastly, these individual shop estimates are combined into an overall staff-day estimate that is presented to shipyard management for review.

At one public shipyard, we compared the estimated staff-days proposed for competed work involving an SSBN with the staff-days for work involving three SSBNs assigned to that shipyard before competition. The estimated staff-days were about 20 and 13 percent less, respectively, than the actual staff-days required to do the work for the first and second vessels. Also, they were within about 9 percent of the staff-day estimate for the third vessel, which had not yet been completed.

We also compared the estimated staff-days for this proposal with those for other competed SSBN work at that shipyard. The estimated staff-days were within about 3 percent of those for other competed work. Thus, the staff-day estimates to do SSBN-related work we reviewed seemed reasonable in terms of both (1) recent trends and (2) the number of staff-days to do other work.

Staff-Day Rate Determination

Public shipyards use different methodologies to estimate the costs of competed and noncompeted work. For noncompeted work, shipyards use SMRS based on cost elements prescribed by Navy Industrial Fund accounting procedures, historical cost information, and budget projections developed about 18 months in advance of the fiscal year in which the rates are to be used. They are not required to use SMRS for competed work, and thus, they may develop a specific rate for each proposal. The rates for competition generally included the same cost elements as the SMR but distributed the overhead costs (adjusted for more current cost data) over a base including both noncompeted and competed work. Thus, the competed work was allocated its share of the overhead costs.

To review the procedures the public shipyards used to determine their rates, we compared the total for each overhead cost center with the amounts shown in the current budget and determined that all anticipated costs had been included. Generally, the staff-day rate used for competed work did not vary significantly from that used for noncompeted work.

We found that the cost elements included in the rates for competed work were the same as those prescribed by Navy Industrial Fund accounting procedures to account for direct labor, production overhead, and general

and administrative overhead costs. Direct labor costs had been accumulated by production shop cost centers, such as welding, electrical, pipefitting, and carpentry. For production overhead costs, each shop had a different rate, depending on the amount of indirect labor, indirect material, training, and other costs.

General and administrative overhead includes those costs that cannot be directly attributed to specific work. It includes the planning and production departments, administrative offices, quality assurance activities, facility maintenance, other training, budget and accounting functions, and other supporting activities such as equal employment opportunity and contracting offices.

Material Cost Estimates and Controls

Before fiscal year 1987, material was an element of the rate used to estimate the cost of noncompeted work. As a result of the Navy's effort to improve public shipyards' operating and accounting practices, material is now a separate item in the proposals. It is estimated for each item of work and billed directly to the customer.

Internal control reports show material costs and usage by vessel. One purpose is to compare the actual material used and the original estimates of material.

Cost Proposals Reflect Prior Experience

Where possible, we compared the staff-day rates public shipyards used for competitive proposals with actual costs for work done by the shipyards on similar type vessels. We recognize that many factors can influence the results of such a comparison, such as differences in the condition of the vessels and the period when the work was accomplished. However, we believe, and public shipyard officials agree, that it provides an indication of the validity of the shipyards' competitive proposals.

The costs proposed for submarine-related work at the shipyards we visited were reasonably comparable to the shipyards' experience. For example, at two shipyards the proposed staff-day rates ranged from about 5 percent less to as much as about 18 percent more than costs for prior noncompeted work.

Proposed Versus Actual Costs

As of the end of fiscal year 1987, work had been completed on only six surface vessels and final costs had not been established pending the resolution of change orders and additional work. Therefore, we could not determine if the amounts included in public shipyard proposals represent the final cost of the work.

Incremental Costs

One of the four public shipyards we visited had developed its proposal using only the incremental overhead costs it expected to incur to accomplish the work. Shipyard officials reasoned that the fixed overhead costs had already been allocated to noncompeted work through the SMR. The overhead rate used to estimate the cost to accomplish the competed work was about one-third of the rate used for noncompeted work. This practice is no longer allowed by the Navy.

Managerial Judgment

The final responsibility for formulating proposals rests with the shipyard commander and senior management. They can adjust the cost estimates based on factors such as past experience and trends, expected risk, anticipated workload, and the competitive environment. Shipyard management increased the staff-day estimate for one proposal that involved the overhaul of an SSBN by 13 percent. We estimate that this increased the proposal by about \$11.5 million. Another public shipyard reduced a proposal for work involving a surface vessel by about \$7 million to be more competitive. However, it lost the competition.

Private shipyards also can use this strategy. For example, we found that one such proposal for a surface vessel had been decreased by about \$600,000 as a result of management's discretion.

Controls Intended to Help Ensure Accountability

Two controls help ensure that competed work awarded to public shipyards is properly charged and accomplished as required. These are the APOs and Naval Audit Service.

Other ongoing efforts—such as verifying labor charges and providing quality assurance activities and reports that track charges and compare those charges against estimates—monitor noncompeted as well as competed work at public shipyards.

Administrative Project Officers

The APO decides if change orders are (1) within the scope of the project order and thus a shipyard's responsibility or (2) additional work that

must be funded with customer resources. In the event of disputes, the APO either directs shipyards to proceed with the work or forwards unresolved disputes to NAVSEA.

Naval Audit Service

At the direction of Navy headquarters, NAS initiated a program to monitor competed work. The purpose is to help ensure that labor and material are charged properly to project orders and that change orders are administered properly.

NAS representatives at two of the four public shipyards told us that their reviews had not disclosed any significant costing errors or other evidence that project orders were being charged improperly. Although there are no formal reports at this time, NAS provided us an internal progress report on competed work involving submarines, which confirmed their comments to us. Additionally, labor verification audits by internal auditors and NAS at a third public shipyard revealed no significant mischarges. At the other shipyard, the issue of incremental costing was questioned. However, recent Navy Comptroller guidance that prohibits this practice should resolve the concern.

NAS also periodically reviews public shipyard operations (that is, labor charges, cost accounting practices, and quality assurance activities). The following are some of the results contained in the NAS reports we reviewed.

- A December 1985 report states that, based on labor checks conducted during mid-1985, five of six shipyards did not meet NAVSEA's goal of 95 percent accuracy in properly charging labor. The report does state, however, that the charges at Puget Sound, Portsmouth, and Charleston Naval Shipyards were about 91, 94, and 96 percent accurate, respectively.
- A February 1986 report on cost accounting procedures states that the (1) newly automated time and attendance system should strengthen internal controls, (2) tracking of excess materials needed strengthening, and (3) some shipyards were not compiling meaningful analyses of price variances. (The shipyards agreed with NAS recommendations to strengthen their procedures.)
- Three reports issued in March, May, and June 1986, which address quality assurance activities at public shipyards, state that the operations were generally in compliance with applicable regulations.

Verifying Labor Charges

Public shipyards use a standard system, prescribed by NAVSEA, to record all labor charges. NAVSEA requires that direct labor be charged to specific work and supervisory personnel verify the accuracy of the charges.

The system requires that erroneous charges be corrected and intentional mischarges be investigated for disciplinary action. The results are periodically reported to NAVSEA.

At one public shipyard we examined the results of four labor checks—two had been conducted by the shipyard’s internal auditors and two by NAS—that involved 348 employees. Erroneous charges had been made for 46 employees, about 13 percent. Of these, 18 (5 percent) were mischarges between vessels. At another shipyard, we found that NAS had made 3 separate checks of 50 employees and found only 1 error. During our review, we observed another check of 30 employees that found no erroneous charges. We found no evidence that indicated that these errors were the result of a deliberate attempt to mischarge labor.

Quality Assurance

Both public and private shipyards have quality assurance departments that perform various tests and inspections to identify deficiencies and to ensure work is accomplished properly. The departments at public shipyards are responsible to shipyard management but are under the technical cognizance of headquarters organizations. The customer also has a role in ensuring that all work is performed in a satisfactory manner.

In addition to their own quality assurance activities, private shipyards also are monitored by SUPSHIP representatives who administer all phases of the contract and ensure that all work is accomplished satisfactorily.

Other Controls

Public shipyards generate numerous periodic reports that show the cost and status of work. Examples include daily transaction reports showing the previous day’s labor and material charges and other information by task and weekly status reports that compare funds expended against those authorized.

As required by NAVSEA, these shipyards also generate and submit several reports, including monthly reports showing the financial status of all work. These reports show each vessel’s predicted end costs and staff days, expenditures to date, and the projected gain or loss.

Private Shipyard Price Proposals

We discussed the pricing of proposals submitted under the competition program with representatives of five private shipyards that had competed with public shipyards for overhauling and repairing the vessels included in our review. We found that private shipyards can incur certain costs not applicable to public shipyards.

Some private shipyard representatives believe that these costs should be adjusted when evaluating public and private shipyard proposals to put private shipyards on a more equitable footing with public shipyards. Examples of some costs private shipyards may incur follow:

- **Taxes:** Private shipyards can include as allowable costs amounts for federal, state, and local taxes, but not federal income taxes.
- **Interest Cost to Finance Payment Holdbacks:** The FAR requires a portion of each periodic payment to private shipyards be withheld until all work is satisfactorily completed. In the competitions we reviewed, this was 20 percent. Some private shipyards may have to finance at least part of this holdback to meet current expenses. As a result, they incur an additional cost. According to the FAR, this is not an allowable cost. It therefore must be recovered through any profit.
- **Liquidated Damages:** The Navy can assess liquidated damages for late delivery of the vessel, if a condition to that effect is included in the contract. Under the FAR, the private shipyards can allow for this in their proposals.
- **Facilities Cost of Capital:** This recognizes as an allowable cost an imputed amount for capital invested in facilities at private shipyards. The FAR considers this an allowable cost if it is identified as such in the proposals. Four of the five proposals we reviewed did not include an allowance for this as a reimbursable cost; the other one did.

The legislation authorizing the competition program does not implicitly require adjustments for allowable costs incurred only by private shipyards for the purpose of placing them on an equal footing with public shipyards. Private shipyards, if awarded the work, will be reimbursed for the allowable costs to the extent they are included in the proposals. Further, some of these costs, such as taxes, could be subjective and depend on many factors—such as the level of profit, if any, and a private shipyard's relationship with a parent company and that company's tax status, state in which the work is done, and subsidies received. Such adjustments would be subjective, difficult to determine and could unnecessarily delay the competitive process.

Comments From the Deputy Assistant Secretary of Defense (Systems)



ASSISTANT SECRETARY OF DEFENSE
WASHINGTON D C 20301-8000

PRODUCTION AND
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Mr. Frank C. Conahan
Assistant Comptroller General
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US General Accounting Office
Washington, DC 20548

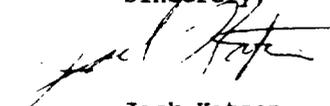
Dear Mr. Conahan:

This is the Department of Defense (DoD) response to the General Accounting Office (GAO) Draft Report, "NAVY MAINTENANCE: Competing Vessel Overhauls and Repairs Between Public and Private Shipyards", dated December 2, 1987 (GAO Code 394156, OSD Case 7480).

The Department generally agrees with the GAO findings and recommendations. Navy actions are underway to implement the GAO recommendations, beginning with Request for Proposals (RFPs) advertised in FY 1989. In recent years, the Navy has implemented a number of initiatives to improve the efficiency of its shipyards, including the public/private competition program. While the precise amount is not known, savings are attributable to public/private competition.

The detailed DoD comments on each finding and recommendation are provided in the enclosure. Additional technical comments were provided to members of your staff. The DoD appreciates the opportunity to comment on the draft report.

Sincerely,



Jack Katzen
Deputy Assistant Secretary of Defense
(Systems)

Enclosure

GAO DRAFT REPORT - DATED DECEMBER 2, 1987
(GAO CODE 394156) OSD CASE 7480

"NAVY MAINTENANCE: COMPETING VESSEL OVERHAULS AND REPAIRS
BETWEEN PUBLIC AND PRIVATE SHIPYARDS"

DEPARTMENT OF DEFENSE COMMENTS

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FINDINGS

- o **FINDING A: Distribution of Work Between Public And Private Shipyards.** The GAO reported that, between FY 1985 and FY 1987, about \$811 million, or 5 percent of the total amount budgeted for Navy ship overhauls and repairs, was competed between public and private shipyards. Of this amount, the GAO found that about \$645 million was awarded to public shipyards. According to the GAO, the distribution of the work between public and private shipyards is influenced by several factors, including (1) the need to maintain a mobilization base, (2) the complexity of the work, and (3) congressional direction. The GAO noted that most of the work awarded to public shipyards has been for work involving nuclear submarines. On the other hand, during FY 1985 to FY 1987, the GAO found that private shipyards were awarded most of the work involving surface vessels. The GAO reported that, in contrast to the nuclear submarine work, numerous private shipyards can and do compete for work on the surface vessels. The GAO found that, overall, private shipyards are being awarded an increasing share of the funds for all overhaul and repair work. The GAO noted that the Navy expects this trend to continue, although the total amount available for such work is expected to decline. (p. 2, pp. 3-4, pp. 12-20, pp. 67-68/GAO Draft Report)

DoD RESPONSE: Concur. Although private shipyards are being awarded an increasing share of funds for all overhaul and repair work, whether this trend continues, in part, depends on maintaining current Congressionally approved ship maintenance funding levels. The private/public ratio can also be dynamic from year to year based upon such factors as drydock availability and fleet operational commitments.

- o **FINDING B: Public Shipyard Cost Estimates.** The GAO reviewed cost proposals developed by several public shipyards and found that the proposals were based on Navy guidance in effect at the time of preparation and were developed from estimates of labor, material and overhead. The GAO pointed out that, in some cases, the proposals were adjusted to reflect management judgment of shipyard capability, contingencies, risk and the competitive environment. In addition, the GAO found that the proposals involving nuclear submarines were increased to include discretionary costs, while staff day rates generally included a proportionate share of costs directly attributable to shipyard operations. The GAO concluded that the estimates from submarine-related work are

Now on pp. 5, 16-21,
and 49-50.

Appendix IV
Comments From the Deputy Assistant
Secretary of Defense (Systems)

Now on pp. 6, 22-24 and
51-57

reasonable. The GAO also noted, however, that the accuracy of the proposals could not be determined, since the work is still underway. (pp. 4-5, pp. 21-25, pp. 69-85/GAO Draft Report)

DoD RESPONSE: Concur.

- o **FINDING C: Inherent Differences Between Public And Private Shipyards.** The GAO reported that, even though they are basically involved in the same type of work, there are inherent differences between public and private shipyards, primarily centering around the role of profit. According to the GAO, the Shipbuilders Council of America and others believe that these inherent differences preclude fair and equitable competition. As an example, the GAO reported that private shipyards must generally compete under fixed-price and fixed-price incentive contracts for work that they believe is not always adequately defined, thus increasing their financial risk. The GAO reported that, in contrast, while public shipyards must base their bids on expected costs, they operate under project orders, and the Government will eventually absorb all costs above the fixed price. The GAO also pointed out, however, that a recent Comptroller General Decision¹ found that both types of shipyards develop their proposal under comparable degrees of uncertainty. Overall, the GAO concluded that, while the differences do not preclude competition, they do preclude total equity and affect the comparability of the proposals. (pp. 4-5, p. 21, pp. 25-28/GAO Draft Report)

Now on pp. 5, 22, and 24-25

DoD RESPONSE: Concur. The original Congressional authorization for the program recognized the inherent differences between the public and private sectors when it authorized competition to be excluded from the provisions of A-76 and established a requirement for comparability. As evidenced by recent decisions of the Comptroller General, the Navy's conduct of these competitions is sound.

- o **FINDING D: Navy Measures To Foster Competition.** The GAO found that the Navy has designed its procurement process for the competition program to include several measures to foster competition. As examples, the GAO reported that the design is intended to help ensure that:
 - public and private shipyard proposals are based on common work statement requirements;
 - public shipyards can reasonably be expected to work at the estimated prices; and

¹ "Newport News Shipbuilding and Dry Dock Company, " B-221888, July 2, 1986

- successful bids include comparable estimates of all costs at both types of shipyards.

The GAO found that the Navy process is similar in some instances to procedures under the Federal Acquisition Regulations (FAR), in that all potential offerers were provided the same information and proposals were evaluated to ensure impartiality. In addition, the GAO found some instances where selections considered not only costs, but also the need to promote national defense and protection of the mobilization base. (p. 5, pp. 28-30/GAO Draft Report)

Now on pp. 7 and 25-26.

DoD RESPONSE: Concur.

- o **FINDING E: Evaluating Public Shipyard Proposals.** The GAO reported that the Navy performs a cost realism analysis of the lowest priced public shipyard proposals to help ensure that the work can be accomplished at the estimated cost, and to determine whether the proposed direct labor and overhead rates and material costs are reasonable. The GAO reported that the Navy also conducts a comparability analysis of the low public and private shipyard proposals as a basis for certifying that the successful bid includes comparable cost estimates. The GAO found that, in developing the comparable estimates, the Navy estimates and adds a pro rata share of the following costs to the lowest priced public shipyard proposals:

- shipyard military personnel;
- facility depreciation;
- unemployment insurance;
- workmen's compensation; and
- expenses associated with a new oversight office created for the program.

The GAO reviewed the costs included in each of the comparability analyses and identified several adjustments to the cost estimates included in the proposals. The GAO also found, however, that so far, the difference between the lowest priced public and private shipyard proposals was more than the adjustments. The GAO concluded, therefore, that the analyses would not have changed any of the awards made to date. (pp. 5-6, p 22, pp. 30-36, pp. 44-45/GAO Draft Report)

Now on pp. 6, 22, and 27-30.

DoD RESPONSE: Concur.

- o **FINDING F: Additional Costs Not Considered in Comparability Analyses.** The GAO found that there are additional costs that can be attributed to the Federal Government, but which are not considered in

the comparability analyses. One such cost identified by the GAO involves the costs of the Navy supply system. According to the GAO, public shipyards have access to Navy supply system inventories for material, possibly providing a competitive advantage to public shipyards. The GAO found, however, that there is no prescribed surcharge passed on the the shipyards or customers since it is funded through separate appropriations. Another cost identified by the GAO is the full cost of the civilian shipyard employees retirement. The GAO reported that public shipyard labor costs include only the Navy contribution for civilian employee retirement, but that the full cost to the Government exceeds that contribution. The GAO noted that the new Federal Employees' Retirement System requires agency and employee contributions to cover full costs. The GAO recomputed these two costs for the winning public shipyard proposals it reviewed and found that none of the additional cost estimates would change the outcome. The GAO pointed out, however, that these additional costs would have further narrowed the differences between the lowest public and the next lowest private shipyard proposals. The GAO concluded that all costs attributable to the Federal Government should be included in the comparability analyses. (p. 6, pp. 36-45/GAO Draft Report)

Now on pp. 6 and 30-31.

DoD RESPONSE: Concur. The Navy is investigating the feasibility of allowing public and private shipyards to have equal access to the Navy supply system for their public/private competition material requirements. This will ensure this factor is equitable for both sectors. The DoD conceptually agrees that a cost factor for civilian employee retirement should be considered and is investigating the most appropriate method of computation, consistent with A-76 cost comparison methodology.

- o **FINDING G: Awards Based on Proposal Estimates, Not Comparability Analyses.** The GAO found that, as now implemented, work under the competition program is awarded based primarily on the lowest amount proposed. According to the GAO, the comparability analyses have served only as a basis for the certification required by the legislation. The GAO acknowledged that, to date, even if the analyses were considered in the award process (including the additional cost elements identified by the GAO in Finding F), the results would not have changed, because of the large differences between the lowest priced public and private shipyard proposals. The GAO concluded, however, that the value of the certification is limited since most of the awards are based on the amounts proposed by the shipyards, not the comparable cost estimates. The GAO further concluded that, because the differences in some future proposals could be small, the proposals should be evaluated and awards made using the results of the comparability analyses. (pp 6-7, pp. 36-37, pp. 44-46/GAO Draft Report)

Now on pp. 6 and 30.

DoD RESPONSE: Concur.

- o **FINDING H: Expected Benefits and Navy Cost Savings Estimate From Competition.**
The GAO reported that the Navy perceives competition between public and private shipyards as having the potential of producing important benefits to the Government, including lower repair costs, improved quality of work, and better adherence to ship schedules. The GAO reported that the overall results and impact of the competition program have not yet been determined, but that in March 1987, the Navy claimed savings of \$200 million from competition. The GAO evaluated the \$200 million estimate and found that it does not take into account a number of factors. According to the GAO, these other factors affect not only the accuracy of the \$200 million estimate, but also the fact that other Navy cost reduction efforts, in addition to competition, may have created savings in public shipyards. The GAO concluded that it could not substantiate the \$200 million in savings claimed by the Navy. (pp. 7-8, pp. 47-54, p. 60/GAO Draft Report)

DoD RESPONSE: Partially concur. The DoD agrees that other factors, notably the efficiencies achieved through implementation of Naval Industrial Improvement Plan initiatives, affect the accuracy of the estimate of public/private competition savings. Overall, however, the Navy is saving money. The first public/private competition submarine overhaul, SSBN 640, is over 75 percent complete and is on target to save in excess of \$30 million over that naval shipyard's previous performance on an SSBN overhaul. Another method of estimating these savings compares the difference between the award price of the public shipyard and the low private offerer for those competitions won by a public shipyard. Totaling these differences for the public/private competitions conducted thus far yields savings well over \$200 million. The primary benefit of public/private competition has been improved efficiencies in Navy shipyards. Those efficiencies are occurring, and public/private competition has been the catalyst. While the precise amount is not known, the March 1987 Navy estimate attributing about \$200 million of the savings to public/private competition is reasonable.

- o **FINDING I: Expected Benefits Of Competition: Views Of Public Shipyard Officials.**
The GAO reported that almost all of the public shipyard officials it contacted believed that the competition program had reduced costs somewhat. The GAO also pointed out, however, that a number of factors made any estimate of the savings difficult to determine. With regard to adherence to schedules, the GAO reported that most of the shipyard officials thought the competition program had not had an impact. In addition, the GAO reported that almost all the officials felt that adherence to schedule would not be more

Now on pp 7, 35-38,
and 41-42.

Now on pp. 7 and 38-41.

heavily emphasized for competed ships than those that were not competed. The GAO also reported that about half of the shipyard officials believed the quality of work had improved under the competition program, but also about half believed that quality had not changed. The GAO pointed out that, for the most part, the views of the shipyard officials were based on their personal experiences and impressions, not on any specific analyses. The GAO concluded that the benefits of competition are not yet clearly supportable. (p. 8, p. 47, pp. 54-57, p. 60/GAO Draft Report)

DoD RESPONSE: Partially concur. The traditional criteria for measuring and managing ship overhauls are schedule, quality, and cost. Overemphasis on one criteria usually comes at the expense of the other. The GAO reports that most shipyard officials thought the competition program had not had an impact on schedule, that is, it had not worsened. About half the shipyard officials said quality of work under the competition program had improved, about half said it had stayed the same. Improvement in the cost criterion clearly occurred. The magnitude of the savings may be questioned, but the savings are there. Of the three criteria, public/private competition has had a positive effect on quality and cost and a neutral effect on schedule.

- o **FINDING J: Navy Test Program To Identify The Effects Of Competition.** The GAO found that, in response to congressional direction, the Navy has structured a test program, to examine and report on the implications and potential benefits of competition between public and private shipyards. The GAO reported that, under the Navy plan, the public and private sector would each overhaul one ship, and a winner will be determined after evaluation of final cost data, quality inspection of the ships, and review of the schedules. According to the GAO, in August 1985, a contract to overhaul the U.S.S. Duluth was awarded to a west coast private shipyard; and, in April 1986, overhaul of the U.S.S. Cleveland was assigned to the Long Beach Naval Shipyard. The GAO reported that cost evaluations have focused primarily on collection and interpretation of cost data, the Navy having selected and reviewed 23 common work items. The GAO noted that, as of January 1987, the target and ceiling prices had increased for both ships. In addition, the GAO reported that the Navy has conducted quality evaluations and analyzed overhaul schedules. The GAO noted that both overhauls were completed ahead of schedule, and the test report is currently being reviewed by the Navy. The GAO concluded that reasonably accurate assessments of the competition program are necessary to ensure that it is being effectively carried out and is achieving the benefits intended. The GAO further concluded that greater confidence can be placed in the assessments after more of the competed work is complete and final cost/price and other data are available. (p. 47, pp. 57-61/GAO Draft Report)

Now on pp. 10 and 40-42.

Appendix IV
Comments From the Deputy Assistant
Secretary of Defense (Systems)

DoD RESPONSE: Concur. The report on the public/private sectors overhaul competition was completed on August 31, 1987, and presented to the Congress by Secretary Webb on November 16, 1987. The report concluded that schedule and cost were satisfactory and not significantly different, and that the cost of the private shipyard was about 8 percent cheaper than the public yard.

RECOMMENDATIONS

RECOMMENDATION 1: The GAO recommended that the Secretary of Defense direct the Secretary of the Navy to base the certifications of public and private shipyard competitive proposals on all reasonably identifiable and objectively quantifiable costs to the Government. (p. 8, p. 46/GAO Draft Report)

Now on pp. 7 and 33.

DoD RESPONSE: Concur. The certifications of public and private shipyard competitive proposals should be based on all reasonably identifiable and objectively quantifiable costs to the Government. The Navy is investigating allowing the private and public shipyards equal access to the Navy Supply System, thus yielding no advantage to either sector. Regarding civilian retirement costs, the Navy will devise a computation method in consonance with A-76 cost comparison methodology. The DoD agrees with the GAO proposed refinement on the calculation of military personnel costs. Actions under this Recommendation are expected to be implemented in Requests for Proposals (RFPs) issued in FY 1989.

RECOMMENDATION 2: The GAO recommended that the Secretary of Defense direct the Secretary of the Navy to evaluate the shipyard proposals on the basis of the certification. (p. 8, p. 46/GAO Draft Report)

Now on pp. 7 and 33.

DoD RESPONSE: Concur. The Navy plans to begin evaluating shipyard proposals on the basis of the certification as contained in the RFP. Implementation is expected for RFPs issued in FY 1989.

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