

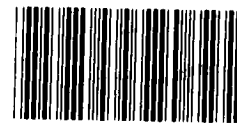
GAO

Briefing Report to Congressional Requesters

November 1986

NAVY MANPOWER

Reductions in the Civilian Work Force at Naval Shipyards



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

National Security and  
International Affairs Division

B-217419

November 24, 1986

The Honorable Daniel K. Akaka  
House of Representatives

The Honorable Glenn M. Anderson  
House of Representatives

The Honorable Sala Burton  
House of Representatives

The Honorable Ronald V. Dellums  
House of Representatives

The Honorable Julian C. Dixon  
House of Representatives

The Honorable Mervyn M. Dymally  
House of Representatives

The Honorable Vic Fazio  
House of Representatives

The Honorable Edward R. Roybal  
House of Representatives

In response to your request and a subsequent discussion with your offices, we examined the Navy's civilian work force reductions at naval shipyards. Specifically, we examined the

- changes in the naval shipyard work force level,
- reasons for work force changes, and
- the basis for the reductions in force (RIFs) cost and savings estimates.

On June 5, 1986, we briefed your offices on our findings and agreed to provide this report on the results of our work. Essentially, we concluded that changes in the naval shipyard civilian work force level were reasonable in view

of the declining work load and the potential savings from the revisions in ship maintenance strategy and philosophy. However, we found that the Navy's guidance for calculating a shipyard's RIF cost and savings needs to be improved.

Our findings were developed from information obtained from officials in the Navy's Office of the Comptroller, the Naval Sea Systems Command, and four naval shipyards--Charleston Naval Shipyard, South Carolina; Long Beach Naval Shipyard, California; Portsmouth Naval Shipyard, New Hampshire; and Puget Sound Naval Shipyard, Washington.

#### CHANGES IN THE WORK FORCE LEVEL

Shipyard workload is the predominant determinant of the size of the naval shipyard civilian work force. The size of the work force fluctuates as the work load changes and, when viewed at a single point in time, certain shipyards in a geographical area may appear to be taking a disproportionate share of ongoing or planned personnel reductions.

For example, from February to December 1985, the Navy reduced its shipyard civilian work force by 4,969 personnel; and between December 31, 1985, and September 30, 1987, it plans to make a further reduction of 5,291. The east coast shipyards absorbed 61 percent (3,042) of the 1985 reductions. Conversely, the west coast shipyards are expected to absorb 76 percent (4,004) of the 1986-87 reductions. Considering the total reduction for these periods, it is estimated that the east coast will account for 42 percent (4,329), while the west coast will account for an estimated 58 percent (5,931). The total work force reduction of the west coast shipyards is expected to be greater because these shipyards are experiencing a greater reduction in work load than the east coast shipyards.

To reduce the naval shipyard civilian work force level, the Navy uses RIF procedures when attrition will not accomplish the required results and, according to Navy officials, when shipyards' work loads are not expected to increase significantly in the foreseeable future. In 1985, the naval shipyards used RIF procedures, which affected 712 civilian personnel. Of these, 59 lost employment. The remainder either had their positions downgraded or were moved to other positions.

For 1986, the Long Beach, Portsmouth, and Puget Sound shipyards requested RIF authority from the Naval Sea Systems Command. According to a Naval Sea Systems Command official, Portsmouth's request was approved in July 1986, and the Long Beach and Puget Sound requests are being considered. Portsmouth requested authority to reduce its work force by 757 personnel but, according to a shipyard official, recent changes in work load have caused Portsmouth to adjust its plan. It now intends to separate 549 permanent employees and to hire 70 personnel with needed skills, resulting in a net reduction of 479. A shipyard official said that attrition had not been considered in estimating the number of reductions needed, so actual reductions may be fewer than planned. Long Beach requested authority for a furlough/RIF of 896 personnel. However, a shipyard official told us that because the shipyard's work force has decreased through attrition since the request was made, the shipyard plans to use a reduction in force for about 700 personnel. Puget Sound requested authority for a furlough/RIF of 150 personnel. Its plan is also subject to change.

REASONS FOR  
WORK FORCE CHANGES

Since fiscal year 1983, the naval shipyard civilian work force has been decreasing largely because of a decline in work load. According to Navy officials, the declining work load is due to change in ship maintenance philosophy and strategy.

The revised ship maintenance philosophy requires more frequent, but shorter, shipyard periods for some combatant ships and no further overhauls for some of the older combatant ships. A Navy official explained that this means the number of ship overhauls and the time that ships are unavailable because of shipyard maintenance will be reduced.

The Navy's maintenance strategy now includes competition between naval and private shipyards for ship maintenance. This change, which was authorized by the Congress, is intended to improve performance and encourage cost savings in both the naval and private shipyards. According to Navy officials, as a result of these initiatives, much of the less complex, shorter duration maintenance is within the capabilities of private shipyards and some of the maintenance formerly done by naval shipyards has been eliminated.

COST OF  
REDUCTIONS IN FORCE

When a RIF is one of several options available to an activity needing to reduce cost and/or personnel, information on net savings or costs of anticipated RIFs versus other alternatives is essential in making a sound decision. We found that the Naval Sea Systems Command did not develop guidance to ensure that RIF cost and savings estimates would be made on a uniform basis until 1986. The guidance, however, does not take into account all RIF cost and savings factors, and it gives inconsistent direction for estimating costs and savings.

Prior to the 1986 guidance, the naval shipyards relied on their own judgment in determining the types of costs and savings factors that should be considered when contemplating a RIF. The 1986 guidance delineates the types of costs and savings that should be included in the cost analyses but does not cover all reduction in force costs such as those for unemployment compensation, job search assistance contracts, saved pay from downgrades, and administration of the RIF. Also, the guidance does not properly consider the effect of attrition on RIF savings.

When personnel lose employment through a RIF, costs for their severance pay and lump sum leave may be incurred and savings from paying their salaries and fringe benefits will be realized. The guidance prescribes that these costs and savings be based on the assumption that all personnel to be affected by a RIF will lose employment. Yet, the guidance also notes that 10 percent of those to be affected will not lose employment but will be relocated to another area for federal employment. According to a Naval Sea Systems Command official, the 1986 RIF cost estimates for severance pay and leave and the expected savings from salaries and benefits were based on 100, rather than 90, percent of the personnel losing employment because of the RIF. Additionally, the guidance does not include an attrition factor in computing RIF savings. It fails to take into account the attrition that would have normally occurred at the shipyards.

CONCLUSIONS

In view of the declining work load and potential savings in maintenance costs, the shipyard work force reductions appear reasonable. However, the guidance for developing reduction in force cost and savings estimates for naval shipyards needs to be improved.

RECOMMENDATION

We recommend that the Secretary of the Navy direct the Commander of the Naval Sea Systems Command to revise the guidance for calculating shipyard reduction in force costs and savings to

- consider all shipyard budgetary and indirect reduction in force costs,
- use consistent assumptions, and
- recognize the effect of attrition on reduction in force savings estimates.

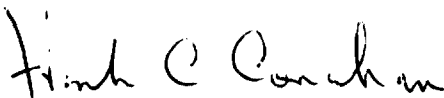
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The appendices to this letter provide additional details on the results of our work. We discussed the matters presented in this report with officials of the Departments of Defense and the Navy and incorporated their views. As requested, we did not obtain official agency comments.

As arranged with your offices, we plan no further distribution of this briefing report until 15 days from its issuance date, unless you publicly announce its contents earlier. At that time, we will send copies to the Secretary of the Navy and to other interested parties upon request.

If you need additional information, please contact John Landicho, Senior Associate Director, on 275-6504.

Sincerely yours,



Frank C. Conahan  
Assistant Comptroller General

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ABBREVIATIONS

GAO	General Accounting Office
RIF	Reduction in Force



REDUCTIONS IN THE CIVILIAN  
WORK FORCE AT NAVAL SHIPYARDS

The Naval Sea Systems Command is responsible for the maintenance of Navy ships. As such, it has management control over the eight naval shipyards--four on the east coast and four on the west coast, including one at Pearl Harbor, Hawaii. As shown in table I.1, the shipyards are assigned certain maintenance capabilities.

Table I.1: Maintenance Capabilities of Naval Shipyards

<u>Shipyards</u>	<u>Aircraft carriers</u>	<u>Surface nuclear ships</u>	<u>Nuclear submarines</u>	<u>Electronics/missile systems</u>
East coast:				
Charleston			X	X
Norfolk	X	X	X	X
Philadelphia <sup>a</sup>	X			X
Portsmouth			X	
West coast:				
Long Beach <sup>a</sup>	X			X
Mare Island			X	
Pearl Harbor <sup>b</sup>			X	X
Puget Sound	X	X	X	X

<sup>a</sup>No nuclear maintenance capability.

<sup>b</sup>Also makes emergency repairs to all ships in the Pacific and overhauls all ships homeported in Hawaii.

To maintain their assigned maintenance capabilities, the naval shipyards must have a civilian work force of sufficient size and skills. Each shipyard uses its work load as the basis for establishing work force requirements. (See app. III for a detailed description of this process.)

Historically, the naval shipyard civilian work force has increased during periods of military conflict and has decreased during peacetime. The last major peak in shipyard work force occurred in the late 1960s during the Viet Nam Conflict, when employment reached over 90,000. However, in the mid-1970s, the peacetime work force level began to increase from the post-Viet Nam low of about 65,000 in 1974 to a high of over 80,000 in mid-1983 because of an emphasis on meeting maintenance schedules.

As shown in table I.2, the naval shipyard civilian work force decreased from about 79,000 to about 74,000 from fiscal years 1983 through 1985. The Navy plans further work force reductions for seven shipyards from 1985 to 1986 and for five from 1986 to 1987.

Table I.2: Naval Shipyard Civilian Work Force End-Strengths<sup>a</sup> for Fiscal Years 1983-87

<u>Shipyard</u>	<u>Actual</u>			<u>Budget</u>	
	<u>1983</u>	<u>1984</u>	<u>1985</u>	<u>1986</u>	<u>1987</u>
Charleston	8,414	8,329	8,373	8,500	8,500
Norfolk	13,007	13,388	12,645	12,200	11,800
Philadelphia	11,535	11,182	10,089	8,900	8,800
Portsmouth	<u>8,831</u>	<u>8,386</u>	<u>8,422</u>	<u>7,850</u>	<u>8,400</u>
East coast	<u>41,787</u>	<u>41,285</u>	<u>39,529</u>	<u>37,450</u>	<u>37,500</u>
Long Beach	7,003	7,083	6,502	4,475	4,307
Mare Island	10,762	10,013	9,872	9,550	9,650
Pearl Harbor	7,125	6,854	6,654	6,300	6,000
Puget Sound	<u>12,309</u>	<u>12,404</u>	<u>11,815</u>	<u>10,859</u>	<u>10,200</u>
West coast	<u>37,199</u>	<u>36,354</u>	<u>34,843</u>	<u>31,184</u>	<u>30,157</u>
All shipyards	<u>78,986</u>	<u>77,639</u>	<u>74,372</u>	<u>68,634</u>	<u>67,657</u>

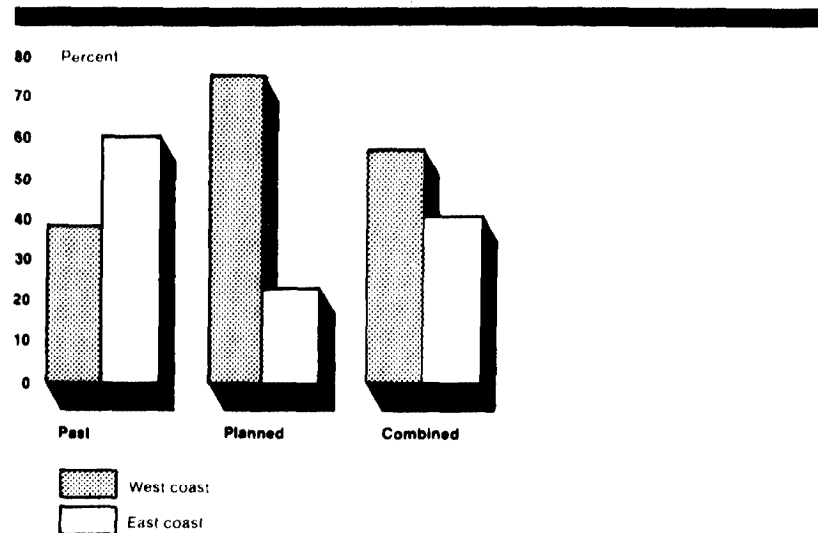
<sup>a</sup>End-strength is the number of employees as of September 30.

#### CHANGES IN THE WORK FORCE LEVEL

The Navy determines the size of the naval shipyard civilian work force generally on the basis of shipyard work load. The size of the work force is dynamic, fluctuating over time as work load changes. This dynamic nature affects each shipyard's work force level differently; consequently, when viewed at a single point in time, certain shipyards in a geographical area may appear to be taking a disproportionate share of any personnel reductions.

From February to December 1985, the Navy reduced its shipyard work force by 4,969 personnel; and between December 31, 1985, and September 30, 1987, the Navy plans a further reduction of 5,291. As shown in figure I.1, in each instance a disparity appears to exist between east and west coast reductions. In 1985, the east coast shipyard work force was reduced by 3,042 personnel, or 61 percent of the total reduction, while the west coast shipyard total work force reduction was 1,927, or 39 percent. From 1986 through 1987, the east coast shipyard work force is expected to be reduced by 1,287 personnel (24 percent), while the west coast shipyard reduction is expected to be 4,004 (76 percent). Estimated reductions for the entire period are 42 percent (4,329) for the east coast and 58 percent (5,931) for the west coast. The total reduction for the west coast shipyards is greater because these shipyards are experiencing a greater reduction in work load than the east coast shipyards are.

Figure I.1: Work Force Reductions (West Coast vs. East Coast)



Choosing the best method(s) for reducing the size of a work force is important. Alternatives include release of temporary personnel, furlough, attrition, and reduction in force (RIF).<sup>1</sup>

According to a Naval Sea Systems Command official, if a shipyard work force reduction is to be short-term, releasing temporary employees and/or furloughing permanent employees are probably the best means because they allow a shipyard to recall skilled employees when needed. If the reduction is to be long-term, attrition and/or a RIF are probably better alternatives.

Navy policy is to accomplish work force reductions through attrition whenever possible. RIFs are to be pursued only when attrition will not accomplish the required results and, according to Navy officials, when a shipyard's work load is not expected to increase significantly in the future.

In February 1985, the Navy directed the naval shipyards to reduce their work force levels from approximately 78,000 to 67,000 by December 31, 1985, to improve performance and efficiency. The work force actually decreased to 72,948 as of December 31, 1985. A Navy official said that the reduction was not as large as planned because the shipyards received more work. Attrition accounted for most of the reduction. In addition, the Navy released 1,467 temporary employees and used RIF actions for 712. Ultimately, 59 permanent employees lost employment as a result of the RIFs. The remainder were downgraded or reassigned to other positions.

<sup>1</sup>A RIF consists of employing formal procedures to separate, downgrade, or reassign personnel because of budgetary pressures or work load changes.

Of the seven naval shipyards planned for work force reductions in 1986, Long Beach, Portsmouth, and Puget Sound shipyards have requested RIF authority. The Long Beach and Puget Sound RIFs are to align the work forces with the expected reductions in work loads. The purpose of the Portsmouth RIF is to reduce costs, making the shipyard more competitive. According to a Naval Sea Systems Command official, Portsmouth's request was approved in July 1986, and the Long Beach and Puget Sound requests are being reviewed.

The Portsmouth RIF request was to reduce the work force level to 7,680 by August 30, 1986--a net reduction of 852 personnel. Shipyard officials had planned to use attrition, release of temporary personnel, and a RIF of up to 757 personnel to meet that figure. However, a shipyard official told us that due to recent changes in work load, the shipyard plans to separate 549 permanent personnel and to hire 70 personnel--a net reduction of 479. According to a shipyard official, attrition was not considered in estimating the number of reductions needed under the revised plan. Therefore, fewer RIFs may be needed.

In March 1986, when Long Beach requested RIF authority, it had an actual work force of 5,979. Shipyard officials had decided to reduce their work force to 4,112 by December 31, 1986. Because this reduction was greater than the amount that could be accomplished through attrition, the shipyard planned to release 354 temporary personnel and to reduce the permanent work force by 896 through furlough and/or RIF. Attrition was expected to accomplish the balance of the needed reduction. A shipyard official told us that since submitting the request, the shipyard's attrition rate had been higher than estimated. Therefore, as of July 1986, the shipyard planned a RIF for about 700 personnel and a decrease of about 350 personnel through release of temporary employees and further attrition. If attrition continues at higher than expected levels, RIF requirements will be further reduced.

According to a shipyard official, Puget Sound's plan is to reduce its work force level to 11,100 by September 30, 1986--a net reduction of 356 personnel. Its plan assumes use of attrition and release of some temporary personnel in conjunction with a furlough and/or a RIF of 150 permanent personnel at the end of fiscal year 1986.

#### REASONS FOR WORK FORCE CHANGES

Since fiscal year 1983, the naval shipyard civilian work force has been decreasing, primarily because of a decline in work load. According to Navy officials, the declining work load is due to two initiatives that are intended to reduce ship maintenance costs.

The initiatives are

- a revised ship maintenance philosophy, which extends the periods between overhauls and eliminates some overhauls; and
- a changed maintenance strategy, which emphasizes congressionally mandated competition between naval and private shipyards.

Revisions to  
maintenance philosophy

To make ships more available for sea duty and to possibly reduce maintenance costs, the Navy has begun to require more frequent, short-term (2 to 4 months) maintenance, thereby reducing the number of overhauls a ship would need during its life. These short-term actions are used either to sustain the material condition of a ship between overhauls (selected restricted availability) or to accomplish maintenance in segments over a series of shipyard visits (phased maintenance availability). A ship scheduled for a selected restricted availability may go much longer between overhauls, and a ship assigned to the phased maintenance program may go without an overhaul entirely.

By 1982, the Navy had placed nine classes of surface combatant ships on extended operating cycles. For some of these, the period between overhauls was extended from 37 to 60 months; according to a shipyard official, in 1984 the time between overhauls for some of the others was extended from about 40 to 60 months or more. The official also said that in 1986 the Navy removed 88 of these ships from the overhaul schedule for fiscal year 1987 and beyond and that the Navy intends to do only necessary short-term maintenance to keep the ships in operation until they become obsolete.

As a result, according to a Navy official, the amount of maintenance available for naval shipyards has declined because much of the less complex, shorter duration maintenance is being performed by private shipyards.

Change in  
maintenance strategy

To improve performance and encourage cost savings in ship maintenance, the Navy implemented competition between naval and private shipyards as mandated by the Congress. For fiscal year 1985, the Congress authorized the Navy to conduct a two-ship test of competition between naval and private shipyards for Navy ship maintenance. The Navy selected two similar nonnuclear ships homeported on the west coast for the test. For one ship, bids were solicited coastwide from naval and private shipyards, and a contract was awarded to the Northwest Marine Iron Works,

Portland, Oregon. The Long Beach Naval Shipyard is performing the maintenance on the other ship to provide a basis for comparing the results of the shipyards' performances. For fiscal year 1986, the Congress authorized the Navy to compete four or more additional ships between naval and private shipyards. The Navy chose to expand the competition to a total of eight ships, four homeported on each coast. Half of the ships on each coast were selected from those scheduled in the naval shipyard work loads, and half were selected from among those planned for private shipyards.

For the east coast, the two ships selected from the naval shipyards were taken from Charleston's work load. A Navy official told us that one ship was selected to match the same class of ship taken out of the private shipyard's planned work and that the other was directed by the Secretary of the Navy to be included in the competition program. For the west coast, the ships selected from the naval shipyards were removed from Long Beach's work load. According to a Navy official, Mare Island and Puget Sound's work loads were not considered because these shipyards dealt with nuclear ships and no private west coast shipyards were certified to work on nuclear-powered ships. The Pearl Harbor Naval Shipyard work load was also eliminated because it would have been too expensive to bring a crew and their families to the mainland if a private shipyard won the competition.

The Navy is planning competition for more ships in fiscal year 1987. According to officials, the Secretary of the Navy has directed that three nuclear ballistic missile submarines be included in the program. In addition, some nuclear attack submarines planned for selected restricted availabilities will also be competed.

#### COST OF RIFs

When a RIF is one of several options available to an activity needing to reduce cost and/or personnel, information on net savings or costs of anticipated RIFs versus other alternatives is essential in making a sound decision. We found that the Navy did not develop guidance for computing RIF costs and savings until 1986 and that this guidance does not include all RIF cost and savings factors. Furthermore, it gives inconsistent direction for estimating costs and savings.

Planned RIFs for 1986

A Naval Sea Systems Command official told us that guidance was developed in 1986 to ensure RIF cost and savings estimates would be made on a uniform basis. Prior to this time, the naval shipyards used their own judgments in determining the types of costs and savings factors that should be considered when contemplating a RIF. (See app. IV for a detailed discussion of the 1985 RIFs.) The guidance delineates the types of costs and savings that should be included when performing cost analyses.

Using this guidance, the Navy made cost and savings estimates for the shipyards planning RIFs in 1986. Long Beach's costs for its RIF request are estimated at \$6.2 million and its savings are \$24.8 million; Portsmouth's estimated costs and savings for its RIF request are \$3.7 million and \$21 million, respectively; and Puget Sound's are \$700,000 and \$4.2 million, respectively.

Our review shows that these cost estimates were not complete. The RIF guidance indicates that applicable costs are those for severance pay, relocation, and lump-sum leave and these costs were considered in the estimates. However, there are other costs to agencies that should be considered in evaluating a RIF versus other alternatives. For example, costs that require an additional outlay of funds, such as job search assistance contracts, and that have a direct effect on the budget should be considered. Furthermore, indirect costs that do not alter an agency's budget but affect its resources for efficiently accomplishing its missions should be considered. Such costs are for RIF administration, saved pay from downgrades, and lost productivity due to the disruption caused by a RIF. According to officials, the Navy guidance did not address these costs because they are not budgetary costs and because they are difficult to estimate.

We recognize that some of these costs, such as the cost of lost productivity, are not easily quantifiable in assessing the impact of a RIF. However, we believe that all the factors that affect the activity undergoing a RIF should be assessed in order to evaluate alternatives.

We also found that the guidance does not properly consider the effect of attrition. The guidance defines RIF savings as the salaries plus fringe benefits that would have been paid during a 1-year period for employees actually separated. The guidance does not take into account the attrition that would have normally occurred at the shipyards. As we reported<sup>3</sup> in 1985, the length

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<sup>3</sup>See Reduction In Force Can Sometimes Be More Costly To Agencies Than Attrition And Furlough (GAO/PEMD-85-6, July 24, 1985), for a fuller discussion on the types of costs and savings that should be considered when assessing a reduction in force.

of time for which savings are calculated should include this attrition factor. Thus, savings from a RIF should be estimated based on the salaries and benefits paid for employees no longer needed until they would have left the work force through attrition. Using this method, we estimate that Long Beach, for example, should save about \$15 million through its 1986 RIF, rather than \$24.8 million.

In addition, we found some cost and savings estimates were based on inconsistent assumptions. When personnel lose employment through a RIF, costs for their severance pay and lump sum leave may be incurred and savings from no longer paying their salaries and fringe benefits will be realized. The RIF guidance prescribes that these costs and savings be based on the assumption that all personnel affected by the RIF will lose employment. Yet, the guidance also notes that 10 percent of those to be affected will not lose employment but will be relocated to another area for federal employment. According to a Naval Sea Systems Command official, the 1986 RIF estimates for severance pay and leave and expected savings from salaries and benefits were based on 100, rather than 90, percent of the personnel losing employment because of the RIF.

#### CONCLUSIONS

Since 1983, the naval shipyard civilian work force has been decreasing because of a declining work load due to revisions in ship maintenance philosophy and strategy. According to Navy officials, these actions could reduce ship maintenance costs. In view of the declining work load and potential savings in maintenance costs, the shipyard work force reductions are reasonable. However, the guidance used to develop RIF cost and savings estimates needs to be improved.

#### RECOMMENDATION

We recommend that the Secretary of the Navy direct the Commander of the Naval Sea Systems Command to revise the guidance for calculating shipyard RIF costs and savings to

- consider all shipyard budgetary and indirect RIF costs,
- recognize the effect of attrition on RIF savings estimates, and
- use consistent assumptions.



OBJECTIVES, SCOPE, AND METHODOLOGY

Eight members of the Congress requested us to examine the Navy's civilian work force reductions at naval shipyards because they were concerned that certain shipyards were taking a disproportionate share of the personnel reductions. In response to their request, we examined the

- changes in the naval shipyard work force level,
- reasons for work force changes, and
- the basis for the reductions in force cost and savings estimates.

To accomplish these objectives, we contacted officials at Navy headquarters and at four naval shipyards--two on each coast. At Navy headquarters, we visited the Navy's Office of the Comptroller and the Naval Sea Systems Command. At these offices, we discussed with officials the past and planned work force levels between east and west coast shipyards; analyzed actual and projected shipyard work load and work force data for fiscal years 1983 through 1987 to identify trends and to compare differences among naval shipyards; and reviewed Navy regulations for determining and assigning shipyard work loads and for establishing work force requirements to document the Navy's procedures. We also discussed how work load and work force levels for shipyards are budgeted, monitored, and controlled.

At the shipyard level, we visited the Charleston Naval Shipyard in South Carolina; the Long Beach Naval Shipyard in California; and we contacted the Portsmouth Naval Shipyard in New Hampshire and the Puget Sound Naval Shipyard in Washington. We selected these shipyards because they appeared to be those most significantly affected, both positively and negatively, by changes in ship maintenance policy and strategy.

At the shipyards visited, we discussed the determination of their work loads and work force requirements, the reasons for recent changes in requirements, and the effect of these changes on the shipyards. We did not verify the accuracy of the shipyards' requirements computations, but we did discuss how they were made, including their underlying assumptions.

We also examined the costs and savings for the 1985 RIFs at Charleston and Long Beach Naval Shipyards and for the RIFs planned for 1986 at Long Beach, Portsmouth, and Puget Sound. Using Navy-developed data, we compared the costs of the RIFs and the savings in salaries and benefits from the RIFs to the

methodology provided in our 1985 report<sup>1</sup> to determine whether the reported figures were complete and accurate.

Additionally, we reviewed the Federal Personnel Manual on RIF procedures, congressional hearings about shipyard personnel reductions, various congressional and Navy correspondence related to shipyard RIFs, and our previous reports on personnel reductions.

We conducted this work during the period of March through July 1986. The audit work was performed in accordance with generally accepted government auditing standards.

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<sup>1</sup>Reduction In Force Can Sometimes Be More Costly To Agencies Than Attrition And Furlough (GAO/PEMD-85-6, July 24, 1985).

WORK FORCE REQUIREMENTSDETERMINATION PROCESS

Naval shipyards use their work loads as the basis in establishing work force requirements. A Naval Sea Systems Command official confirmed that, although the details vary among shipyards, the methodology used to determine work force requirements was similar at each shipyard. Table III.1 shows a hypothetical example of the way in which the Charleston Naval Shipyard establishes the basic size of the shipyard's work force.

With the work force (or work years) figure established, shipyards develop a phasing plan to determine the end-strength required on the last day of each month in order to support the scheduled work load without exceeding the employment requirement over the course of the year. Development of the phasing plan is complex and must consider many factors, such as

- timing of the entry of the ships into the shipyard and the phasing of specific tasks;
- end-of-the-fiscal-year end-strength guidance;
- mandates to increase efficiency in the shops and reduce overhead employees;
- reasonable attrition rates, monthly hiring figures, and numbers of temporary employees; and
- overtime limitations imposed by higher headquarters.

The result represents a shipyard's estimate of the size of the work force needed to accomplish the work load and its plan for achieving the required work force.

Table III.1: Charleston Naval Shipyard Methodology for Establishing Work Force Needs Using a Hypothetical Example

TOTAL WORK LOAD (Direct labor, including overtime, is estimated on the basis of prior work for same or similar ships)	1,150,000 man-days
DEDUCT HISTORICAL OVERTIME (For example, if 10 percent, divide by 1.10 to determine man-days of straight-time direct labor)	1,045,454 man-days

DIVIDE BY NUMBER OF WORK  
DAYS IN A YEAR (250)  
(Yields required number  
of direct-labor employees  
working straight time) 4,182 employees

DIVIDE BY HISTORICAL PRODUCTIVE  
RATIO  
(Direct-labor force divided by  
total work force, not including  
employees on leave, yields the  
productive ratio. For example,  
if 55 percent, then divide by .55  
to determine the required number  
of direct and overhead employees  
working straight time) 7,603 employees

ADD FACTOR FOR EMPLOYEE LEAVE  
(For example, if 12 percent,  
divide by .88 to arrive at the  
total employment required to  
accomplish the scheduled work) 8,640 employees

However, the work force plan a shipyard develops may be changed by higher headquarters on the basis of other factors or by the shipyard because of work load changes or cost reduction measures.

RIFS IN 1985

For the 1985 RIFs, Navy officials told us that the naval shipyards had no guidance on how to calculate the cost benefit of a RIF. The shipyards we visited, however, had quantified their RIF costs and savings, relying on their own judgment as to what factors should be considered.

At the Charleston Naval Shipyard, officials said that none of the 20 employees affected by the RIF lost employment. They were all downgraded to lower positions, retaining their former pay rates. Shipyard data showed that the shipyard incurred costs of about \$43,195 for saved pay from the downgrades and for RIF administration. A shipyard official said the shipyard had no other costs or any salary savings as a result of the RIF because no employees lost employment.

At Long Beach, the shipyard had estimated its RIF costs and savings to be about \$3 million and \$954,000, respectively. When we questioned shipyard officials about the bases of these figures, they provided updated data that showed the RIF costs should have been about \$3.4 million and savings should have been about \$731,000.

As we discussed for the 1986 RIF cost estimates, we believe these costs for the 1985 RIFs are not complete. In addition, RIF savings from salaries were calculated from salaries and benefits that would have been paid during a 1-year period for those personnel who lost employment. As discussed earlier for the 1986 estimates, this calculation does not properly consider the effect of attrition.

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