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NAVY SHIP MAINTENANCE

Temporary Duty Assignments of Temporarily Excess Shipyard Personnel Are Reasonable

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National Security and
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The Honorable Strom Thurmond
Chairman
The Honorable Carl Levin
Ranking Minority Member
Committee on Armed Services
United States Senate

The Honorable Floyd Spence
Chairman
The Honorable Ike Skelton
Ranking Minority Member
Committee on National Security
House of Representatives

As required by section 366 of the National Defense Authorization Act for Fiscal Year 1998, we reviewed the Department of the Navy's practice of using temporary duty assignments of naval shipyard personnel to perform ship maintenance and repair work at homeports without nearby naval shipyard capability. Specifically, the act required us to review (1) the rationale supporting the Navy's practice, (2) the cost-effectiveness of these assignments, and (3) the factors affecting future requirements for the practice.

Background

The Navy uses a multilevel approach to ship repair and maintenance that, depending on the type and complexity of work, places responsibility at three different levels: organizational, intermediate, and depot. Depot-level repairs are the most complex, requiring the capabilities and technical skills of naval or private shipyards. During fiscal year 1997, the Navy employed about 22,000 personnel at its four naval shipyards. The shipyards are the Portsmouth Naval Shipyard, Portsmouth, New Hampshire; the Norfolk Naval Shipyard, Portsmouth, Virginia; the Puget Sound Naval Shipyard, Bremerton, Washington; and the Pearl Harbor Naval Shipyard, Pearl Harbor, Hawaii. The shipyards are not directly funded, but are paid by their customers—primarily the Pacific and Atlantic Fleets.[1] The fleets are provided depot maintenance funds from the Navy's operations and maintenance appropriation. Funding for the Navy's

[1]The naval shipyards use the Working Capital Fund to finance the cost of producing goods and services ordered by its customers, primarily the fleets. Subsequently, the shipyards receive reimbursement by billing, much as a private business does.

depot-level ship maintenance and repair program in fiscal year 1998 is $2.1 billion.

The Navy schedules its planned ship repair work for a 7-year period and updates this schedule annually. In developing the schedule, the Navy considers various factors, including (1) its policy to perform work of 6 months or less in the ship's homeport, (2) statutory requirements regarding the public/private sector workload distribution,[2] (3) the capabilities and capacity of each shipyard, and (4) expected funding and personnel levels. The published schedule shows the depot-level ship repair work assigned to each naval shipyard and the workload to be performed by the private sector. The Navy also develops an historically derived estimate of the direct labor staff-days each naval shipyard will expend on unscheduled (emergent) ship repair work and adds it to the schedule to arrive at the planned shipyard workload. The final schedule includes both scheduled and unscheduled work that requires temporary duty (TDY) assignments. For fiscal years 1995-97, about 70 percent of the total work assigned to naval shipyards was for scheduled repair work.

The Navy uses TDY assignments primarily to perform work at homeports not located near a naval shipyard. The Navy considers shipyard personnel temporarily excess when they are required for planned future requirements and the time and cost of reducing and reacquiring needed personnel justifies retention. In some cases, personnel are considered temporarily excess for more than a year. Since private sector repair capabilities may be available at these locations, questions have been raised regarding the cost-effectiveness of sending naval shipyard personnel TDY to perform the work. During fiscal years 1995-97 naval shipyards spent an estimated 580,000 direct labor staff-days, valued at an estimated $134.1 million, on TDY assignments. TDY travel, per diem, and other related travel costs amounted to an additional $59 million. About 5.5 percent of the shipyards' total direct labor staff-days were spent on TDY assignments.

Results in Brief

The Navy's rationale for temporary duty assignments is twofold. First, such assignments are required to perform work at locations where no local public or private shipyards have the required depot-level maintenance capability. Most temporary duty assignments are for this reason. The Navy performs work at such locations to comply with its

[2]Until fiscal year 1998, the Navy was required by statute (10 USC 2466) to place no more than 40 percent of its depot-level ship repair work into private facilities. In the 1998 Defense Authorization Act, this was amended to 50 percent. During fiscal years 1992-96, the Navy placed an average of about 34 percent into private facilities.

policy to perform ship repairs of 6 months or less at the ship's homeport and when it is not practical to bring ships to the shipyard. Second, the Navy believes that using temporarily excess naval shipyard workers on temporary duty assignments is cost-effective, even when there is local private sector capability. The Navy states that using temporarily excess workers is efficient and cost-effective because these workers will be needed in the future to perform ship repair work.

The Navy's rationale for sending temporarily excess naval shipyard personnel on temporary duty assignments appears reasonable from a cost and operational standpoint. However, in some cases, other approaches may be more cost-effective. The Navy is currently retaining some temporarily excess shipyard personnel to ensure that it can handle the planned refuelings of nuclear attack submarines for fiscal years 1999 and beyond. Retaining the personnel for these purposes appears reasonable, since the Navy has a need for the personnel. It is following the same practice to perform nuclear ship repair work at San Diego because local private shipyards do not have nuclear capability. However, other practical approaches, such as making greater use of the private sector, may warrant consideration. For example, a major private sector shipyard with nuclear repair capabilities has established a presence in San Diego through its recent purchase of a small local shipyard.

Possible changes to future ship repair workloads could affect the requirement for future temporary duty assignments and retention of current naval shipyard personnel levels. For example, the Navy has canceled 17 planned nuclear attack submarine refuelings since fiscal year 1993. Further reductions in the number of planned refuelings would substantially decrease the on-site workloads planned for three naval shipyards, especially Portsmouth. Similarly, a proposal to homeport three nuclear aircraft carriers in San Diego, California, which does not have a local naval shipyard, could substantially increase temporary duty assignments. Other factors that could affect the amount of future temporary duty assignments include (1) further reductions in the number of Navy ships, (2) full implementation of the Navy's Regional Maintenance Program,[3] and (3) a new round of base closures.

[3]Under the program, the Navy plans to streamline and consolidate its maintenance functions. The program is designed to integrate depot-level and below-depot level maintenance activities, including ship repairs. We discuss the program's status in our report Navy Regional Maintenance: Substantial Opportunities Exist to Build on Infrastructure Streamlining Progress (GAO/NSIAD-98-4, Nov. 13, 1997).

The Navy's Rationale for TDY Assignments

The Navy cites two reasons for using TDY assignments. First, such assignments are required to perform work at locations where no local public or private sector shipyards have the required ship repair capabilities. Second, the Navy believes that using temporarily excess shipyard workers on temporary duty assignments is cost-effective, even when there is a local private sector capability. The Navy performs work at locations without a naval shipyard to comply with its homeporting policy and when it is not practical to perform the work at public or private shipyards. The amount of TDY assignments depends on several interrelated factors, including a shipyard's proximity to homeported ships, the number and types of ships assigned to each homeport, the type of repair or maintenance needed, the ability of private shipyards at or near the homeport to perform required repairs, and the number of temporarily excess naval shipyard personnel. The naval shipyards' financial and management information systems do not identify the purpose for specific TDY assignments, and the Navy could not provide the data needed to identify the exact number of TDY assignments for each reason.

Local Capability Rationale

The Navy performs ship repair TDY work at locations where it believes the necessary capability to perform the work is not locally available. The Navy performs work at these locations primarily to comply with its homeporting policy and also when it is not practical to bring ships to the shipyard. For example, a substantial amount of TDY has been for nuclear submarine repair work at San Diego, where there is no local naval shipyard or private sector nuclear repair capability. Also, local capability is usually not considered when naval shipyard warranty work is involved and for advanced planning prior to a ship going to a naval shipyard for repairs. Because of data limitations, we could not identify the exact number of TDY assignments, but available data supports Navy officials' judgments that most TDY assignments are performed because there is no local capability. For example, because San Diego does not have nuclear repair capability, all nuclear submarine repair work is performed by naval shipyard workers at San Diego. The total submarine work of 145,000 staff-days represents about 25 percent of the total TDY staff-days for fiscal years 1995-97.

Cost-Effectiveness Rationale

In some cases, the Navy believes it is cost-effective to send shipyard workers that are considered temporarily excess on TDY assignments to locations where there is a local private sector capability. The Navy reasons that the excess workers would have to be paid whether or not they are working and that the cost of travel and per diem is the only additional cost

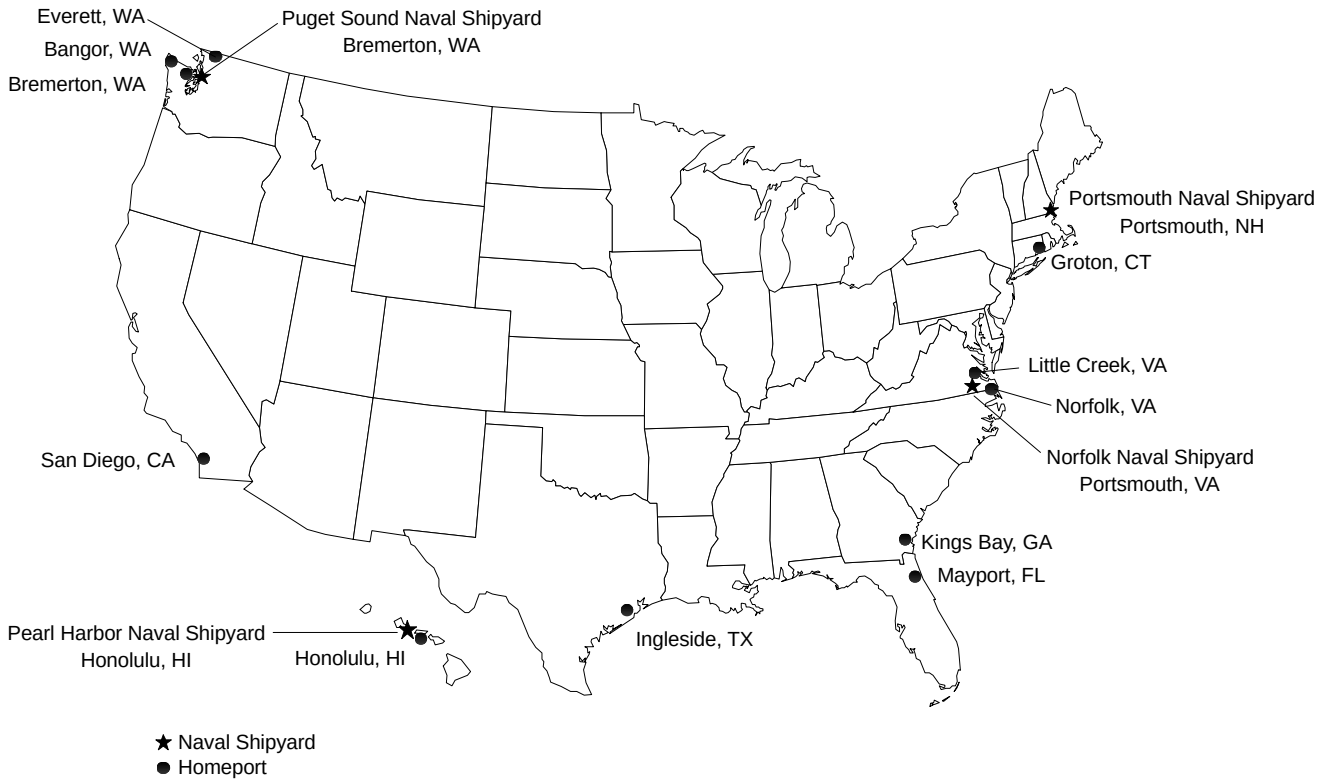
of using the excess workers. The travel and per diem costs are generally less than local private sector labor rates.

Shipyard workers become temporarily excess when there is a reduction in the naval shipyards' originally scheduled and budgeted workload for such reasons as ship deployment extensions, reductions in the scope of the projected ship repairs, force level changes, and funding reductions. In some cases, expected future workloads are used to justify retaining some excess shipyard personnel. Excess personnel are retained when the Navy determines that the excess is temporary and that the time and cost of reducing and reacquiring the needed personnel justifies retention. This is especially true when workload reductions take place during the fiscal year in which the work is scheduled to be performed. In such cases, naval shipyard personnel levels are set for the year, and according to the Navy, it is very difficult to make major adjustments to personnel levels due to Civil Service regulations. For example, during the latest reductions in force at the four naval shipyards, the reductions took about 12 months to complete, from initial planning to the time the employees were actually removed from the shipyards' payrolls.

Navy's Homeporting Policy Impacts TDY Assignments

The Navy's policy to perform all ship repair work of 6 months or less at the ship's homeport substantially increased the amount of TDY ship repair work performed in locations without a naval shipyard. Because crews remain with their ships when the ships need maintenance and repairs, the policy is to improve crew retention and the quality of life by reducing time away from homeports. Since many of the Navy's 23 ship homeports are not located near one of the four naval shipyards, the work is often performed by naval shipyard personnel on TDY assignments. Figure 1 shows the location of the four naval shipyards and some U.S. homeports. The number and type of ships located at each of the Navy's 23 homeports is shown in appendix I.

Figure 1: Naval Shipyards and U.S. Homeports



As shown in table 1, a large number of ships are homeported at or near the Norfolk and Pearl Harbor Naval Shipyards and provide each with a large potential workload for which temporarily excess shipyard personnel can be effectively used. The temporarily excess personnel can work on ships homeported in the area without being on TDY status. The two shipyards, however, also use the personnel to do some work that requires TDY assignments. On the other hand, relatively few ships are homeported near

the Portsmouth and Puget Sound Naval Shipyards. As a result, these shipyards perform more work that requires TDY.

Table 1: Naval Ships Homeported at or Near a Naval Shipyard

Shipyard	Carriers	Surface ships	Submarines	Total
Portsmouth	0	0	1	**1**
Norfolk	5	65	17	**87**
Pearl Harbor	0	17	23	**40**
Puget Sound	1	5	12	**18**

Table 2 shows, by shipyard, the percent of total direct labor staff-days each naval shipyard spent on TDY assignments during fiscal years 1995-97. As table 2 shows, Portsmouth and Puget Sound Naval Shipyards used about 480,000 direct labor staff-days, or about 83 percent of the estimated 580,000 direct labor staff-days naval shipyards used on TDY assignments during fiscal years 1995-97.

Table 2: Direct Labor Staff-Days Spent on TDY Assignments (fiscal years 1995-97)

Shipyard	Total staff-days	TDY staff-days	Percent of total staff-days
Portsmouth	1,540,000	320,000	20.8
Norfolk	3,270,000	90,000	2.8
Pearl Harbor	1,360,000	10,000	0.1
Puget Sound	4,330,000	160,000	3.7
Total	**10,500,000**	**580,000**	**5.5**

Note: All staff-days are rounded to the nearest ten thousand.

Table 3 shows, by shipyard, the reported direct labor costs of TDY assignments and the related travel costs for fiscal years 1995-97. Portsmouth and Puget Sound Naval Shipyards expended about $164.6 million of the $193.1 million, or about 85 percent of the total TDY costs (direct labor costs plus travel costs).

Table 3: Reported TDY Assignment Costs (fiscal years 1995-97)

Dollars in millions

Naval shipyard	Direct labor costs	Travel costs	Total
Portsmouth	$74.5	$26.3	**$100.8**
Norfolk	19.6	6.9	**26.5**
Pearl Harbor	1.3	0.7	**2.0**
Puget Sound	38.7	25.1	**63.8**
Total	**$134.1**	**$59.0**	**$193.1**

Cost-Effectiveness of TDY Assignments

As noted earlier, available data indicates that most TDY assignments are based on the rationale that no local capability exists. In those cases where there is a local private sector capability, the cost-effectiveness rationale for TDY assignments is valid to the extent that naval shipyard personnel are temporarily excess. There is excess capacity and personnel in some naval shipyards. The Navy is retaining the excess personnel to meet anticipated future requirements. Meanwhile, the Navy is using TDY assignments and is reallocating work from the private sector to the naval shipyards to make maximum use of the excess shipyard personnel.

TDY Assignments When There Is No Local Capability

The Navy states that most TDY assignments are made because the required ship repair capabilities do not exist locally. In these cases, the Navy reasons that cost-effectiveness is not an issue because there is no practical alternative. As noted earlier, the Navy cites the use of TDY assignments to perform nuclear submarine repairs at San Diego as an example where no local private shipyard has nuclear repair capability. We agree that there may not be a practical alternative to some TDY assignments, but the Navy does not identify the rationale for each of its TDY assignments or provide the basis for any determination that there is no other practical alternative. In the case of San Diego, we found no basis to question the Navy's statement that no local private shipyard has the necessary nuclear repair capabilities; however, there may be other practical alternatives that are not being considered. For example, Newport News Shipbuilding, a nuclear repair capable private shipyard in Virginia, has established a presence in San Diego through its recent purchase of Continental Marine Industries.

Cost-Effectiveness of TDY Assignments When Local Private Capability Exists

TDY assignments to locations with a private sector capability are likely to be cost-effective when shipyard personnel are temporarily excess. When naval shipyard personnel are temporarily excess, their cost is considered fixed and will be paid whether or not the personnel are performing repair work. We have reported that when labor costs are fixed, the only added costs to the government for the TDY assignments are travel, per diem, and other related costs.[4] To determine the cost-effectiveness of TDY assignments, these travel-related costs would have to be compared to the average private shipyard staff-day rate for performing ship repairs. We examined several private shipyard staff-day rates and naval shipyard TDY costs and found that when the private shipyards' staff-day rates were compared only to the naval shipyards' TDY costs, the private shipyards'

[4]Naval Shipyards: Management of Borrowed Labor Can Be Enhanced by Stronger Internal Controls (GAO/NSIAD 87-188, Sept. 23, 1987).

costs were always higher, usually substantially higher. For example, the Puget Sound Naval Shipyard estimated that its average daily travel cost per worker for scheduled TDY work in San Diego in 1997 was about $116, while the average daily rate per private shipyard worker in San Diego was about $330. Assuming the productivity of both the public and private sector personnel are fairly comparable, it would be cost-effective from a cost and operational standpoint to perform the work using temporarily excess personnel.

TDY assignments are not likely to be cost-effective when the naval shipyards' projected long-term workloads do not support existing personnel levels and local private shipyards are willing and capable of doing the work. In this case, both the naval shipyards' direct labor costs and travel costs should be considered in making cost-effectiveness determinations. To illustrate, in the earlier example, the Puget Sound Naval Shipyard's staff-day rate of $474 for fiscal year 1997 would have to be added to the $116 daily travel and per diem costs and the resulting $590 staff-day rate compared to the private sector's rate of about $330 per day. Clearly, it would not be cost-effective for TDY shipyard personnel to do the work. Navy officials commented that naval shipyards have reduced personnel levels when long-term workload projections indicated a need to do so.

Some Shipyard TDY Assignments Reflect Long-Term Excess Capacity

In its fiscal years 1996-2001 business plan, the Defense Depot Maintenance Council showed large amounts of excess capacity at some of the naval shipyards. Table 4 shows the percent of expected excess capacity[5] reported for each naval shipyard for fiscal years 1998-2001.

Table 4: Excess Capacity in Naval Shipyards

	Fiscal year			
Shipyard	1998 (percent)	1999 (percent)	2000 (percent)	2001 (percent)
Portsmouth	54	54	41	41
Norfolk	26	27	(6)[a]	23
Puget Sound	21	16	6	(10)[a]
Pearl Harbor	39	30	24	11

[a]Negative excess capacity means that a shipyard anticipates more workload than it has the capacity to accomplish.

[5]Excess capacity is constrained by the availability of trained personnel and the organization of work stations. It is the amount of additional workload, expressed in direct labor hours, that a facility like a shipyard can effectively produce annually on a single shift, 40-hour week basis while producing the product mix that the facility is designed to accommodate.

Included in the reported excess capacity calculations are workloads such as several major nuclear submarine refuelings that were later canceled. Such cancellations further increase excess capacity and personnel. Also, the calculations include shipyard workloads that require TDY assignments. Without these workloads, the reported excess capacity and the availability of shipyard personnel would be higher. Unless additional workloads are identified, the personnel will be excess to the shipyard.

Navy Management of Excess Capacity and Personnel

Excess naval shipyard capacity exists even though the Navy closed four naval shipyards through the Base Realignment and Closure process and reduced the personnel levels at the four remaining naval shipyards during fiscal years 1991-97 from about 36,000 to 22,000, a 38-percent reduction. The Navy believes that it needs to retain its current shipyard capacity and associated personnel levels to meet anticipated future requirements. Meanwhile, the Navy is using TDY assignments and is reallocating work from the private sector to more effectively use its excess capacity and personnel. For example, when three nuclear attack submarine refuelings scheduled for the Portsmouth Naval Shipyard were canceled, the Navy, rather than further reducing personnel, decided to provide the shipyard with ship repair workload either previously located in other naval shipyards or in the private sector. For fiscal years 1997-99, this workload included work associated with the repair of submarines homeported in Groton, Connecticut. In the past, part of this work was performed by Electric Boat, a private nuclear-capable shipyard located in Groton, and part was done by Portsmouth Naval Shipyard personnel on TDY assignments. However, for the last 3 years, the Portsmouth Naval Shipyard has been assigned all the depot-level workload at Groton. The Navy believes this assignment of TDY workload to Portsmouth is cost-effective because it needs to retain skilled personnel to perform planned submarine refuelings from fiscal year 1999 to 2005. Beginning in fiscal year 2000, the Navy plans to return part of the Groton workload to the private sector.

The Navy's plan to use TDY assignments and reallocate private sector workloads to the naval shipyards to make effective use of excess shipyard capacity and temporarily excess personnel appears reasonable. However, for TDY assignments to homeports without required ship repair capabilities, other practical alternatives may warrant consideration, such as making greater use of the private sector.

Factors Affecting the Future Use of TDY Assignments

A reduction in the number of planned labor-intensive refuelings of nuclear attack submarines and the homeporting of up to three nuclear aircraft carriers in San Diego could substantially increase future TDY assignments. Other factors that could affect the extent of future TDY assignments include potential reductions in the number of Navy ships, the regionalization of the Navy's ship maintenance, and another round of base closures.

Refueling of Nuclear Attack Submarines

The Navy has retained significant excess capacity at the Portsmouth Naval Shipyard to ensure that it, along with the Pearl Harbor and Norfolk Naval Shipyards, can handle the refueling of 11 nuclear attack submarines during fiscal years 1999-2005. Each refueling requires about 300,000 staff-days of work and costs about $215 million. If these refuelings are done as scheduled, the number of excess personnel available for TDY will be reduced. For example, at Portsmouth, about 32 percent of the fiscal year 1998 planned workload will require TDY assignments, but only 22 percent of the fiscal year 1999 planned workload will require TDY assignments because a nuclear attack submarine refueling is scheduled.

If the refuelings are not done and shipyard capacity and associated personnel reductions are not made, TDY assignments are likely to increase. Since fiscal year 1993, the Navy has reduced planned submarine refuelings. For example, although the Navy planned to refuel 32 nuclear attack submarines during fiscal years 1993-2005, it has canceled 17 refuelings. Of the remaining 15 refuelings, four have been completed and the remaining 11 have been scheduled. Because the Navy reduced the number of refuelings, Portsmouth Naval Shipyard personnel were assigned to perform submarine repair work at the Groton and San Diego homeports. As a result, the shipyard's TDY assignments increased substantially during this time. Further reductions in the number of planned refuelings would substantially decrease the on-site workloads planned for three naval shipyards, especially Portsmouth.

San Diego Nuclear Aircraft Carrier Work

By the end of fiscal year 2005, the Navy anticipates that as many as three nuclear aircraft carriers could be homeported at San Diego. The percentage of depot-level maintenance to be done by public and private shipyards was not settled at the time of our review; however, if the Navy does the work as planned, its use of TDY assignments will increase substantially.

Because no private shipyard in San Diego currently has nuclear repair capabilities, the Navy plans to use personnel on TDY from Puget Sound Naval Shipyard, starting in October 1998, to do the nuclear work on the U.S.S. Stennis, the first nuclear carrier scheduled to be homeported in San Diego. The work entails operating a nuclear repair facility currently under construction as well as performing depot-level nuclear propulsion plant work and integrating it with nonpropulsion plant work done by local private contractors and ship personnel. The Navy said that this work would enable the shipyard to maintain the skilled workforce required to support Pacific Fleet aircraft carrier maintenance and that the cyclical nature of the nuclear workload makes it uneconomical to maintain more than a skeletal workforce of skilled Puget Sound shipyard personnel needed for engineering and for quality and radiological controls in San Diego.

Under current Navy plans, Puget Sound personnel will use about 112,000 direct labor staff-days for nuclear work on the Stennis. Not all of the Navy's work would be done at San Diego: planning, some engineering work, and some assembly would be done at Puget Sound. San Diego private shipyards would use about 53,000 direct labor staff-days for nonnuclear work. Newport News Shipbuilding, a nuclear repair capable private shipyard in Virginia, expressed interest in doing work in San Diego by submitting to the Navy an unsolicited proposal to integrate the nonnuclear propulsion plant work into the nuclear propulsion plant work schedule.

The Navy's plan for accomplishing the nuclear aircraft carrier work in San Diego has not been finalized. On March 13, 1997, the Under Secretary of Defense for Acquisition and Technology signed a memorandum that requires the Navy to develop a clear statement of work for use in a competition between Puget Sound Naval Shipyard and qualified private sector sources[6] for the nuclear aircraft carrier work planned to be performed in San Diego. The statement is to be forwarded to the Deputy Under Secretary of Defense for Logistics by October 1998. If all the nuclear work is turned over to the private sector, the amount of TDY assignments would be substantially reduced, and excess capacity at the naval shipyards would increase unless personnel adjustments were made to reflect the workload reductions.

[6]Newport News Shipbuilding and Electric Boat are currently the only private shipyards qualified to do nuclear ship repair work.

Other Factors

TDY assignments could also be affected by (1) potential future reductions in the number of Navy ships, (2) the regionalization of Navy ship maintenance, and (3) another round of base closures.

Potential Force Structure Reductions

The Navy expects to reduce its fleet of ships from 354 in 1997 to 304 by 2006. Most recently, the Navy implemented a recommendation of the Quadrennial Defense Review that called for the inactivation of 2 nuclear attack submarines and 15 surface ships. As a consequence, the naval shipyards' planned workload will be reduced by about 825,000 direct labor staff-days. This reduction could affect TDY assignments, depending on how the Navy reallocates its remaining shipyard workload.

Navy Maintenance Regionalization

The Navy is streamlining and consolidating its maintenance functions in areas of fleet concentrations as part of its Regional Maintenance Program. Under this program, the Navy plans to ultimately integrate its intermediate- and depot-level maintenance and establish regional maintenance centers. A prototype center is under development in Pearl Harbor, Hawaii. According to Navy officials, the establishment of such centers will provide the Navy with greater flexibility for using excess ship repair personnel, without incurring TDY assignments. For example, as part of its Pearl Harbor Pilot Demonstration Project, the Navy is integrating its intermediate maintenance facility and the nearby naval shipyard. Personnel will be used interchangeably, provided they have the necessary skills.

Additional Base Closures

The Navy closed four naval shipyards and four major homeports during four rounds of base closures, which concluded in 1995. The Secretary of Defense requested an additional two rounds of base closures. If approved, TDY assignments could increase or decrease, depending on which (if any) homeports and shipyards would close.

Conclusions

The Navy's rationale for using temporarily excess naval shipyard personnel is generally sound from a cost and operational standpoint. However, in cases where shipyard personnel are sent on temporary duty because no local repair capabilities exist, there may be cost-effective private sector alternatives. Changes in naval shipyard personnel levels, workloads, and homeport locations could affect the use of TDY assignments. The planned nuclear attack submarine refuelings and the homeporting of up to three nuclear aircraft carriers in San Diego would likely have the most impact on TDY assignments in the near future.

Recommendations

To ensure that Navy resources are used in the most cost-effective manner, we recommend that the Secretary of Defense direct the Navy to consider using the private sector for workloads that are performed routinely by naval shipyard personnel on temporary duty. Further, when reductions in future workloads are significant, we recommend that the Navy determine the extent to which it could reduce its shipyard capacity and associated personnel. In making these determinations, the Navy needs to ensure that all applicable statutory requirements are met.

Agency Comments

The Department of Defense (DOD) provided written comments on the draft of this report, which are presented in appendix III. DOD concurred with both of our recommendations. DOD also suggested several minor technical and editorial changes, which we have made, as appropriate.

We conducted our review between July 1997 and February 1998 in accordance with generally accepted government auditing standards. The scope and methodology for our review are discussed in appendix II.

We are sending copies of this report to the Chairmen and Ranking Minority Members of the Subcommittee on Defense, Senate Committee on Appropriations, and the Subcommittee on National Security, House Committee on Appropriations. We are also sending copies of the report to the Secretaries of Defense and the Navy; the Chief of Naval Operations; and the Director, Office of Management and Budget. We will make copies available to others upon request.

If you or your staff have any questions concerning this report, please contact me on (202) 512-8412 or my Assistant Director, George A. Jahnigen, on (202) 512-8434. Major contributors to this report are listed in appendix IV.

David R. Warren, Director
Defense Management Issues

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Abbreviations

DOD	Department of Defense
TDY	temporary duty

Ship Homeports

As of September 1997, the Navy had ships homeported in 23 locations. The number and type of ships in the homeports range from 76 ships, including aircraft carriers, surface ships, and submarines, to one surface ship. These factors can influence the number of TDY assignments at each homeport. Table I.1 shows the Navy's homeports and the number and type of ships located at each one.

Table I.1: Navy Ship Homeports and Number of Ships in Each Homeport

Homeport	Carriers	Surface ships	Submarines	Total
Norfolk, Va.	5	54	17	**76**
Little Creek, Norfolk, Va.		11		**11**
Bath, Me.		1		**1**
Earle, N.J.		3		**3**
Groton, Conn.			23	**23**
Portsmouth, N.H.			1	**1**
Charleston, S.C.		1		**1**
Mayport, Fla.	1	25		**26**
Pascagoula, Miss.		4		**4**
Ingleside, Tex.		14		**14**
Kings Bay, Ga.			9	**9**
San Diego, Calif.	2	50	6	**58**
Pearl Harbor, Hawaii		17	23	**40**
Bremerton, Wash.	1	5	2	**8**
Everett, Wash.	1	6		**7**
Bangor, Wash.			10	**10**
Concord, Calif.		1		**1**
Newport News, Va.	1			**1**
Gaeta, Italy		1		**1**
La Maddalena, Italy		1		**1**
Sasebo, Japan		6		**6**
Yokosuka, Japan	1	9		**10**
Guam		1		**1**
No homeport assigned		41		**41**
Total	**12**	**251**	**91**	**354**

Objectives, Scope, and Methodology

As required by section 366 of the National Defense Authorization Act for Fiscal Year 1998, we reviewed the Department of the Navy's practice of using temporary duty (TDY) assignments of naval shipyard personnel to perform ship maintenance and repair work at homeports not having naval shipyards. Specifically, the act required us to review (1) the rationale supporting the Navy's practice, (2) the cost-effectiveness of these assignments, and (3) the factors affecting future requirements for the practice.

To determine the Navy's rationale for using TDY assignments of naval shipyard personnel, we interviewed officials and obtained pertinent studies, briefings, and other documents from the offices of the Deputy Under Secretary of Defense for Acquisition and Technology; the Deputy Chief of Naval Operations for Logistics; the Assistant Secretary of the Navy for Research, Development, and Acquisition; and the Naval Sea Systems Command. We also interviewed Atlantic and Pacific Fleet maintenance officials, visited the four naval shipyards, and interviewed shipyard officials to determine their views on TDY assignments and to obtain data on the extent of TDY assignments for fiscal years 1995-97.

To determine what methodology would be appropriate to measure the cost-effectiveness of TDY assignments, we interviewed Navy officials and defense consulting officials from the Center for Naval Analysis, the Logistics Management Institute, and the Institute for Defense Analysis. We obtained their opinions on the appropriate methodology to use when the naval shipyards do or do not have adequate time to adjust their personnel levels to match workload changes. We then compared this methodology to the one we had previously used in our 1987 report on the cost-effectiveness of naval shipyards' borrowing labor from one another to meet assigned workloads.[1] We found them to be essentially the same.

We then used the methodology to determine the cost-effectiveness of using TDY assignments for ship repairs. We assumed the average direct labor costs as fixed when a naval shipyard did not have adequate time to adjust its personnel to workload reductions. Consequently, we compared only the average additional cost to the government of travel-related expenses to the average private shipyard staff-day rate for performing ship repairs. If the shipyard's travel-related costs were less than the private shipyard staff-day rate, we considered the use of TDY assignments to be cost-effective. However, when the shipyards had sufficient time to make

[1]For our report Naval Shipyards: Management of Borrowed Labor Can Be Enhanced by Stronger Internal Controls (GAO/NSIAD-87-188, Sept. 23, 1987), we used the fixed cost concept to assess the cost-effectiveness of the borrowed labor practice.

needed personnel adjustments, we added the average naval shipyard direct labor costs to the average travel-related costs and compared this total amount to the average private shipyard staff-day rate. If a naval shipyard's total costs were more than the private shipyard's staff-day rate, we considered the use of TDY assignments not to be cost-effective.

To obtain information on the cost components, we reviewed information generated by the shipyards' management information and financial systems. To determine the average staff-day rate for private shipyards, we contacted the Office of the Supervisor for Shipbuilding at the Naval Sea Systems Command, which negotiates and administers ship repair contracts with the private sector. We found that the naval shipyards' systems did not specifically identify or summarize the amount of direct labor staff-days spent on TDY assignments, nor did they identify the reasons for the TDY assignments. We, therefore, developed a data collection instrument that would gather the desired information, using the best available shipyard data and estimates. While the data was not precise or verifiable, it represented the best information on the staff-days expended by naval shipyards on TDY and travel, per diem, and other related travel costs resulting from TDY assignments. We used the estimated data primarily to show the relative magnitude of TDY use.

To determine the factors affecting the future use of TDY assignments, we interviewed and obtained documents and other pertinent data from officials of the offices of the Deputy Under Secretary of Defense for Acquisition and Technology, the Deputy Chief of Naval Operations for Logistics, and the Naval Sea Systems Command. We also interviewed officials from the four naval shipyards, the consulting firms previously mentioned, and private shipyards in the San Diego area.

The results of our review are based on the assumption that the current naval shipyard infrastructure would remain in place.

Comments From the Department of Defense

OFFICE OF THE UNDER SECRETARY OF DEFENSE

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WASHINGTON, DC 20301-3000

ACQUISITION AND TECHNOLOGY

07 APR 1998

Mr. David R. Warren
Director, Defense Management Issues
National Security and International Affairs Division
U.S. General Accounting Office
Washington, DC 20548

Dear Mr. Warren:

This is the Department of Defense response to the General Accounting Office (GAO) draft report, "NAVY SHIP MAINTENANCE: Temporary Duty Assignments of Temporarily Excess Shipyard Personnel Are Reasonable" (GAO Code 709288/OSD Case 1568). The Department's response to the specific recommendations and technical comments are enclosed.

Roy R. Willis
Acting Deputy Under Secretary
of Defense (Logistics)

Enclosures:
As stated

**GAO DRAFT REPORT - DATED MARCH 1998
(GAO CODE 709288) OSD CASE 1568**

"NAVY SHIP MAINTENANCE: TEMPORARY DUTY ASSIGNMENTS OF TEMPORARILY EXCESS SHIPYARD PERSONNEL ARE REASONABLE"

RECOMMENDATIONS

Now on p. 14.

RECOMMENDATION 1: To ensure that the Navy resources are used in the most cost-effective manner, the GAO recommended that the Secretary of Defense direct the Navy to give consideration to the private sector for workloads that have been performed year after year by naval shipyard personnel on temporary duty. (p. 17/GAO Draft Report)

DOD RESPONSE TO THE DRAFT REPORT: Concur. The Navy is taking steps in their fleet schedules to assign submarine Docking Selected Restricted Availabilities to the private sector starting in FY 2000 and beyond, as was done prior to FY 1997.

Now on p. 14.

RECOMMENDATION 2: In cases where there are significant reductions in future workloads, the GAO recommended that the Secretary of Defense direct the Navy to determine the extent to which it could reduce its shipyard capacity and associated personnel. In making these determinations, the Navy needs to ensure all applicable statutory requirements are met. (p. 17/GAO Draft Report)

DOD RESPONSE TO THE DRAFT REPORT: Concur. The naval shipyards match manpower requirements to projected workload in every budget submission and will continue to adjust their work forces accordingly as they have done since FY 1990."

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