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

NATIONAL SECURITY AND  
INTERNATIONAL AFFAIRS DIVISION

DECEMBER 16, 1983

B-213648

Admiral Sylvester R. Foley, Jr.  
Commander-in-Chief, U.S. Pacific Fleet  
Honolulu, Hawaii



123350

Dear Admiral Foley:

Subject: Management of the Navy's Restricted and Technical Availability Program, Western Pacific (GAO/NSIAD-84-43)

We have reviewed selected aspects of the management of the Navy's Restricted Availability/Technical Availability (RA/TA) Program in the Western Pacific. Under this program, the Navy provides funds for selected repairs as well as essential routine depot maintenance to sustain combat ready ships. In the Western Pacific, RA/TA work is done at three ship repair facilities in Japan, the Philippines, and Guam. During fiscal year 1982, the Navy spent about \$110 million for the RA/TA program on emergent and voyage repairs on the approximately 60 ships assigned to the 7th Fleet.

Program management could be improved in the areas of (1) scheduling ships into repair facilities, (2) quality and timeliness of work packages submitted by ships to repair facilities, and (3) the ship repair facilities' maintenance management process.

These issues were addressed in a fact summary provided to the Navy and the Subcommittee on Readiness, House Committee on Armed Services, for its deliberations on the Navy's fiscal year 1984 budget request. The Navy responded to questions submitted by the Subcommittee concerning the issues in the fact summary. Whereas the responses indicate that the Navy has taken or is planning to take many actions to improve program management, we believe that the Navy's responses for the following issues did not address our concerns and should be further examined by Navy management to maximize the benefits which could be gained.

--Alternatives should be considered in scheduling ships into the repair facilities to enhance workload stability and minimize the amount of overtime hours and contracting

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services needed. The Navy believes that while logistics support costs are important to the fleet, they are subordinate to overall operational readiness. While we agree that operational readiness merits higher priority than logistics support costs, we are concerned about the apparent lack of emphasis on the latter. The operations side of the fleet is making very limited attempts to determine how many and what kind of ships have to be serviced during high port loading periods and what ships could arrive earlier or depart later to reduce the amount of overtime or contracting services needed. (See pp. 6 to 9.)

- The timeliness and accuracy of ship repair work packages needs to be improved. Although the Navy has taken steps to solve this problem, such as briefing ship personnel on the importance of following procedures, no formal actions are being considered which would hold a ship commander fully accountable for consistently submitting late or inaccurate work packages. (See pp. 9 to 10.)
  
- The current ship repair facilities' maintenance management process needs improvement. The Navy has efforts underway to make marked improvements in this process. However, the Navy's response to the Subcommittee noted that an inadequate automatic data processing (ADP) system would limit the amount of improvement which could be made. Our concern is that the current lack of management emphasis or an incentive for controlling program costs at the ship repair facilities would not be overcome solely through acquiring such a system. What is needed is a management commitment to operating an effective maintenance management system. This includes exercising greater discipline in the system's operations to ensure control over program costs. (See pp. 11 to 14.)

In view of the positive nature of most of the Navy's response, we are not making any formal recommendations at this time. However, we would be interested in your comments on the matters discussed in this report.

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Copies of this report will be sent to the Chairman of the Subcommittee and to the Secretaries of Defense and the Navy.

Sincerely yours,

  
John Landicho  
Senior Associate Director

Enclosure

MANAGEMENT IMPROVEMENTS ARE NEEDED  
IN THE RESTRICTED AVAILABILITY/TECNICAL  
AVAILABILITY PROGRAM, WESTERN PACIFIC

BACKGROUND

The objectives of the Navy's multi-billion-dollar ship maintenance and modernization program is to sustain enough ships in good condition to meet current requirements. The Navy uses a multilevel approach to ship maintenance which, depending on the type and complexity of work, places responsibility at three different levels. Organizational level maintenance is done by the ship's force. Intermediate level maintenance is done by shipboard and shore-based personnel. Depot level maintenance is done by shipyards and ship repair facilities (SRFs).

Depot level maintenance activities generally make major ship overhauls and repairs. The depot level work not centrally scheduled (emergent repairs) is funded under the Restricted Availability/Technical Availability (RA/TA) Program. The program's objective is to provide selected repairs as well as essential routine depot service to sustain combat ready ships. The maintenance strategy of these ships dictates that depot level maintenance be performed at specified intervals between regular overhauls.

The U.S. 7th Fleet supports U.S. interests in the Western Pacific (WESTPAC) with about 60 ships. These ships are maintained in combat ready condition by three SRFs in the Philippines, Japan, and Guam. Ship repair is also performed at contractor activities in Sasebo, Japan, and Singapore. During fiscal year 1982, the 3 SRFs employed about 7,000 people and spent about \$110 million in RA/TA funds to repair 7th Fleet ships deployed in WESTPAC.

The peacetime mission of these facilities is to

- provide logistic support, including drydocking, repair, and alteration and conversion of naval ships and service craft and ships of other government agencies as assigned;
- perform voyage repairs and emergency repairs and related work, including drydocking of naval ships; and
- perform such other functions as may be requested by competent authority.

During contingencies the ship repair facilities are expected to provide the needed capacity and capability to meet possible workload surges, although these surges have yet to be defined by the Navy.

To accomplish these objectives, the ship repair facilities maintain integrated industrial plants with a full range of shop facilities and engineering and ship personnel skills.

All maintenance in WESTPAC is under the management of the Commander, Naval Logistics Command, U.S. Pacific (COMNAVLOGPAC) who is the principal logistics agent for the Commander-in-Chief, U.S. Pacific Fleet (CINCPACFLT). COMNAVLOGPAC manages the three SRFs in WESTPAC and is also responsible for coordinating with the 7th Fleet as to when and how much repair work can be accomplished afloat or ashore. To do this, COMNAVLOGPAC is responsible for reviewing ship work requests, monitoring current and prospective WESTPAC repair facilities' workloads, and advising CINCPACFLT on the status of ships being repaired, especially when they are available for deployment. In scheduling ships for repair, foremost consideration is given to the operational requirements of the fleet. SRF workload levels are considered, but do not drive ship schedules. Funds for voyage and emergent repairs are centrally budgeted and managed by CINCPACFLT; RA/TA funds are provided directly to each individual repair facility for repairing 7th Fleet ships.

The SRFs work on a modified industrial fund basis<sup>1</sup> under which they receive payment for work done for customers, primarily CINCPACFLT and the Military Sealift Command. As under any industrial fund, this buyer-seller relationship is expected to generate management incentives to control and improve production performance. As a result, the SRFs are expected to use financial planning and cost controls comparable to those of their counterparts in the United States--the naval shipyards--and private industry.

#### OBJECTIVES, SCOPE, AND METHODOLOGY

Our objectives were to (1) identify the Navy's systems for managing the RA/TA program in the Western Pacific and (2) assess to what extent existing management practices at the 7th Fleet and SRFs enhance or detract from the facilities' efficiency and effectiveness. Problems resulting from operational inefficiencies at the SRFs had been identified by previous Naval Audit Service reports.

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<sup>1</sup>A modified industrial funds activity has an annual operating budget in lieu of an "open allotment."

To obtain information on what the Navy's systems are for managing the program in WESTPAC and assessing the operational efficiency of the SRFs, we

- interviewed CINCPACFLT, COMNAVLOGPAC, and SRF officials;
- reviewed Navy and fleet policies, regulations, and procedures governing the RA/TA program and SRF operations; and
- reviewed local implementation of the above policies at all SRFs.

In addition, our approach was to review RA/TA-funded repair work conducted on combatant ships at each overseas location and analyze the work requests at each of the major SRF organizational departments, i.e., planning, production, and supply. Our selective examination of ships was derived from Navy's operating schedule of ship availabilities in WESTPAC.

We conducted our work primarily at CINCPACFLT, Honolulu, Hawaii; the overseas SRFs at Subic Bay, the Philippines; Yokosuka, Japan; and Guam; the Navy Office in Singapore; and at the Sasebo Detachment in Japan. Our work was done between May 1982 and March 1983.

This review was made in accordance with generally accepted government audit standards.

#### SCHEDULING AT WESTPAC SHIP REPAIR FACILITIES

A key factor affecting the productivity of WESTPAC ship repair facilities is workload stability. Work overloads may tax their ability to do all assignment work in a timely and cost-effective manner and may adversely affect readiness. Lower than expected workloads may result in (1) underused staff, facilities, and equipment and (2) the accomplishment of low priority work which is the responsibility of the ship's force.

SRFs' workloads are fluctuating dramatically. To illustrate, in fiscal year 1982, ship availabilities at Subic Bay and Yokosuka varied 73 and 67 percent, respectively, from the original schedule. When expressed in terms of monthly productive staff-days used, the extreme range of the fluctuation becomes even more evident, as indicated below.

FY 1982 Monthly RA/TA Workload  
Fluctuation (in Staff-Days)

	<u>Low month</u>	<u>High month</u>
Subic	24,625	48,487
Yokosuka	2,238	11,006

The SRFs try to minimize the fluctuations in the RA/TA workload by decreasing other work during RA/TA peak periods and increasing it when RA/TA work is low. SRFs, however, still cannot eliminate fluctuations in the total productive workload. The scheduled workload at the SRFs (Subic/Yokosuka) frequently exceeds their staffing capacity. Therefore, they must rely on overtime and contracting to meet these fluctuations. Each SRF uses a substantial amount of overtime ranging from about 11 to 45 percent to meet peak workload demands. In contrast, the Navy's stated fiscal year 1984 overtime goal for naval shipyards is 4 percent. In addition, SRF Yokosuka uses contract services to assist during peak demand periods. In fiscal year 1982, 50 percent of all SRF Yokosuka's work was contracted out, primarily to its Sasebo Detachment. The value of the contract work at Sasebo totaled \$4.2 million.

Discussions with Navy officials and available statistics indicate that the large amounts of overtime and contractor services at the SRFs are caused by a combination of factors, including (1) CINCPACFLT's "rigid" adherence to a policy of the Chief of Naval Operations to maintain "battle group integrity" for a battle group of ships, (2) CINCPACFLT's apparent extension of this policy to include support ships--both naval and Military Sealift Command ships which accompany the battle group, (3) the routine accomplishment of a large amount of low priority work, and (4) inaccurate or late work package submissions to the SRFs by ship personnel.

Chief of Naval Operations policy dictates that a battle group deployed in WESTPAC must maintain battle group integrity. That is, a battle group composed of about 8 to 10 combatant

ships is to operate as a unit rather than as independent ships. The concept also applies to scheduled maintenance. While the converging of the ships in the battle group tends to temporarily increase SRF production workloads beyond available capacity, the situation is compounded by a fleet practice of assigning the same priority to maintenance to be performed on combatant and support ships--naval and Military Sealift Command ships--which may be in port at the same time. This practice is contrary to CINCPACFLT instructions, which assign higher priority to combatant ships.

Fleet operations officials, however, believe that all ships supporting the battle group should be given the same priority for maintenance, regardless of the official instructions because support ships are critical to fleet readiness.

The Navy's response to a series of questions about the scheduling issue states that the Navy's primary concern in WESTPAC is maintaining and enhancing the fleet's overall operational readiness. Logistics considerations and costs, while important, are viewed as subordinate to overall readiness. For example, the concept of maintaining battle group integrity, even though it causes uneven port loading, is considered desirable since it is viewed as enhancing operational readiness of ship forces because they can train as a cohesive team.

While we agree that operational considerations should take precedence over logistics costs, all possible options for minimizing logistics costs should nevertheless be explored by the Navy. Through discussions with Navy officials, however, we determined that only minimal effort had been directed toward such a goal. To illustrate, fleet operations personnel told us that, except for fleet exercises with foreign navies, other ship activity schedules were flexible enough to permit a certain amount of rescheduling. Under those circumstances the following questions, which, if adequately addressed, could result in logistics cost reductions, come to mind:

- How important is it to provide maintenance to support ships of the battle group at the same time the major combatant ships of the battle group are being serviced?
- How cost effective would it be to defer certain work being done on ships undergoing regular overhaul or other scheduled major maintenance work during periods of high port loading?



--Is there some flexibility in the arrival and/or departure dates of noncombatant ships associated with the battle groups?

In our opinion, such questions need to be addressed during fleet deliberations about possible 7th fleet ship schedules to minimize logistics costs without substantially degrading operational readiness.

#### TIMELINESS AND ACCURACY OF WORK PACKAGES

To ensure that an SRF can do the maximum amount of needed repair work in the 5 to 10 days a ship spends at the facility, WESTPAC ships need to (1) submit work packages which contain accurate information, (2) prioritize the specific work to be done, and (3) submit packages sufficiently in advance to allow the facilities to schedule the needed staffing skills and to obtain needed materials without relying extensively on overtime or contracting. CINCPACFLT instructions require that the ships report the needed information not later than 30 days before the ship's scheduled repair period.

Forty-two percent of the work packages submitted to SRFs Subic Bay and Yokosuka during May to September 1982 did not meet their required deadlines. This represented about 59 percent of the average monthly 7th Fleet workload for this period. Our work in Singapore resulted in similar statistics. For fiscal years 1981 and 1982, 27 percent and 41 percent of the work requests were submitted late, respectively.

In addition, work packages were often inaccurate. About 36 percent of the work packages submitted for 68 ship repairs at SRFs Subic and Yokosuka and the Navy Office at Singapore between May and October 1982 contained inaccurate/inappropriate information. The most common discrepancies noted included

- incomplete information to properly plan jobs;
- deferral of work requests because of low priority, request is for work the ship's force should perform, and items are not eligible for RA/TA funding; and
- work requests without any information.

CINCPACFLT officials admitted that work package accuracy has been a long-standing problem. CINCPACFLT efforts in this area before our review support our findings as to what are the most common discrepancies. CINCPACFLT maintenance officials instructed fleet personnel to emphasize the importance of work package accuracy; however, the condition still exists.

A further practice which affects the timeliness or accuracy of information in WESTPAC repair work packages is that the ship's force, on ships scheduled for more than one maintenance upkeep at a different SRF over a quarterly maintenance period, does not notify the second SRF of the repairs completed at the first SRF. Our review of the 7th Fleet's operating schedule (Oct. 1982 to Mar. 1983) revealed that 50 percent of the ships scheduled for maintenance in this period had repairs made in at least two SRFs within a quarterly maintenance period.

According to SRF officials, the ship's force is responsible for keeping the ship's maintenance records up to date, but this is done only infrequently. Therefore, the SRF may accept work requests already completed at the previous SRF and consequently plan the workforce and order material for the repair.

The Navy's response corroborated the deficiencies we observed and laid out some corrective actions being taken or considered. Our concern is that the actions are primarily administrative; i.e., the Navy provided training on the importance of submitting accurate work packages to ship commanding officers and guidance on what work should be included in the work package, etc. We believe that in view of the long-standing nature of the deficiencies, more forceful actions are required. The Navy should consider

- having SRFs formally identify ships which repeatedly submit inaccurate and/or untimely work packages,
- holding a ship commanding officer formally accountable for repeated work package deficiencies by making work package accuracy and timeliness an element in his efficiency rating, and
- using the ship's own budget to pay for the increased cost of repairs that result from a poor work package submission.

PEACETIME OPERATIONS AT SRFs

To be efficient and effective, SRFs need a sound maintenance management process which provides for efficient execution of workloads, analyzes the difference between actual results and established labor and material standards, and takes corrective action where appropriate.

Since 1976, the Naval Audit Service has continuously reported that the SRFs can improve their maintenance process. It identified the areas of work measurement, job performance measurement, funds control, and material management as those with the most potential. The Navy has actions underway to make marked improvements in these areas. While we agree with most of the actions taken, we believe that they will work effectively only if management at all levels is committed to make them work. In our opinion, that level of commitment does not now exist.

Work measurement system

Although the Navy has recognized the value of an effective work measurement system to measure and control labor resources, little management emphasis has been placed by the SRFs and CINCPACFLT on establishing or maintaining a viable system for RA/TA work. Evidence of this is the limited use of labor standards and the dated nature of available standards. SRFs Subic and Yokosuka do not keep historical files for standard job orders indicating the basis for calculating labor and material estimates. The available standards are used little in developing job orders and require revision.

We reviewed 42 job orders at SRF Subic to determine the frequency with which standards are used to develop them. Two job orders were based on standards, while the rest were not. For the 61 job orders reviewed at SRF Yokosuka, 30 were written without using standards and 31 were written using standards. SRF Subic's goal for standards is to revise 127 standards that were written in 1979 and to develop another 100 standards by mid-fiscal year 1983. At the end of fiscal year 1982, 30 had been revised and 100 had been developed, but together the 130 still awaited review by various SRF authorities before being released for use and the remaining 97 awaited revision. At Yokosuka, SRF officials said that standards are being prepared for five classes of homeported ships and they anticipate increasing use of labor standards for these classes of ships. However, visiting ships which do not fall under these classes do not have any standards.

### Job performance measurement

The SRFs do not measure job performance. Furthermore, they do not prepare variance reports on the RA/TA-funded repairs performed on 7th Fleet ships and do not use the current management information system which is the only source of information that reflects job order data, i.e., estimates and actual expenditures. This data analysis would help the SRFs evaluate the adequacy of their planning and estimating functions. In addition, it would identify whether they were using their labor force effectively and would pinpoint where expenditures are exceeding the estimates of how much labor or material should be used on a job.

We performed a variance analysis on job orders (labor/material) for repairs to 7th Fleet ships at SRFs Subic and Yokosuka. Our analysis revealed that there are significant<sup>2</sup> variances on job orders, for labor and material, between estimated and actual expenditures. Our examination of 149 job orders worked on during the third and fourth quarters of fiscal year 1982 revealed that 40 percent had significant variances in labor and 24 percent had significant variances in material. For example, the actual labor-hours were 172 percent greater than estimated for 29 job orders and, conversely for 30 job orders the actual labor-hours were 63 percent less than estimated.

Regarding the management information system, the current system for the SRFs is not used to measure job performance because of its report format and availability. The format does not include the variance between the estimated and actual expenditures and it does not report the variances which are significant. Such information would help SRFs evaluate their job performance. Further, the report is generated 2 to 3 weeks after the repair work is done. This is too late to permit management to analyze the reasons for the variances and to take corrective action. Information is needed on a real-time basis to be of use to management.

### Controls over RA/TA funds

The SRFs do not monitor RA/TA job order cost growth, since RA/TA funds are directly distributed to them by COMNAVLOGPAC and expenditures over estimates on individual jobs do not have to be justified to COMNAVLOGPAC, the ships, or ship type commanders.

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<sup>2</sup>We defined "significant" as over a 30-percent variance involving over 100 hours in labor and \$300,000 in material.

In lieu of individual job order, COMNAVLOGPAC relies on monthly cost and labor reports which are too general to be of much use in evaluating the SRFs on their cost effectiveness or their justification for additional RA/TA funds. Ships also do not monitor repair cost increases since they do not control RA/TA funds. In fact, ship personnel need to be more concerned with repair cost increases. Chief engineers on two ships at Subic Bay undergoing RA/TA repair told us that they were not interested in cost increases, but only in the quality and timeliness of repairs.

In contrast, RA/TA funds at every naval facility outside WESTPAC are controlled on a cost-reimbursable basis. That is, any cost growth must be approved by the customer before the repair is made. Even at SRF Subic, repair work on Military Sealift Command ships consists of "funds controlled" work orders with the command having the final say on cost increases for repairs. In our opinion, such funds controls are needed if the Navy is to effectively manage its RA/TA program funds.

#### Selective material ordering

The SRFs have taken steps to reduce the size of their excess material inventories by disposing of unneeded material. For example, SRF Subic has reduced the number of line items and their dollar value since 1980 by 45 and 65 percent, respectively. SRF Yokosuka is implementing the SRF instruction to turn in excess material that has been on hand for more than a year.

Though the SRFs have been implementing the instruction to reduce excess inventory, the causes of the problem which generates excesses remain. Work orders still are being placed for material that is not needed. Material that will arrive after a ship's availability is still being ordered, and duplicate orders for material are being placed. This lack of selective material ordering of parts still results in the generation excesses. For example, such material, valued at over \$1 million, entered the excess inventory at Subic and Yokosuka during fiscal year 1982. Through selective material ordering we would expect that only a minimum amount of excesses would be generated by doing a better job of ordering only the items needed.

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The Navy's response did not challenge our findings. However, it pointed to actions underway which, in the Navy's opinion, would improve the maintenance management process.

ENCLOSURE

ENCLOSURE

But the Navy noted that marked improvements to the process could be made only if, among other things, the current ADP system was upgraded.

While we believe actions taken by the Navy will improve the process, we are uncertain as to what extent acquiring a new ADP system, if needed, would overcome the lack of attention currently given to existing management information, performance, and expenditure of funds. In our opinion, what is needed is a management commitment at all levels--at CINCPACFLT, the ship repair facilities, and in the fleet--to report accurate and timely information and use it to improve SRF operations.

ERRATA

Please disregard and cross out the restricted stamp on the top of page 1 of the General Accounting Office report to Admiral Sylvester R. Foley, Jr., Commander-in-Chief, U.S. Pacific Fleet.

Subject: Management of the Navy's  
Restricted and Technical Availability  
Program, Western Pacific (GAO/NSIAD-84-43  
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