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# REPORT TO THE CONGRESS



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## Economies Available Through Improved Management Of Navy Shipboard Inventories

B-125057

**BY THE COMPTROLLER GENERAL  
OF THE UNITED STATES**

701486

096409

OSD Case # 3433

APRIL 9, 1973



COMPTROLLER GENERAL OF THE UNITED STATES  
WASHINGTON, D.C. 20548

B-125057

April 9, 1973

Dear Mr. Secretary:

Enclosed are 30 copies of our report to the Congress on economies available through improved management of Navy shipboard inventories (OSD Case No. 3433). The significant contents of the report are summarized in the digest.

We are recommending that you insure that:

- 11 ships scheduled for delivery after September 1, 1973, be outfitted with revised, rather than conventional, allowances of hull, mechanical, and electrical repair parts.
- Inventories taken off ships undergoing shipyard work be used where possible to resupply the same ships or ships undergoing concurrent work at the same shipyard.
- A system is established to provide for prompt identification and redistribution of inventory excesses on board active ships.
- The need for strict compliance with prescribed shipboard procedures for recordkeeping and requisitioning material is emphasized.
- The Navy's policy concerning the use of inventories on inactive ships be further revised.

Sincerely yours,

A handwritten signature in cursive script, appearing to read "James B. Attest".

Comptroller General  
of the United States

Enclosures - 30

The Honorable  
The Secretary of the Navy



COMPTROLLER GENERAL OF THE UNITED STATES  
WASHINGTON, D.C. 20548

B-125057

To the President of the Senate and the  
Speaker of the House of Representatives

This is our report on economies available through improved  
management of Navy shipboard inventories.

We made our review pursuant to the Budget and Accounting  
Act, 1921 (31 U.S.C. 53), and the Accounting and Auditing Act of  
1950 (31 U.S.C. 67).

Copies of this report are being sent to the Director, Office  
of Management and Budget; the Secretary of Defense; and the  
Secretary of the Navy.

A handwritten signature in cursive script, reading "James B. Axtell".

Comptroller General  
of the United States

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#### ABBREVIATIONS

DOD	Department of Defense
GAO	General Accounting Office

D I G E S T

WHY THE REVIEW WAS MADE

1 The Navy in fiscal year 1970 asked  
the Congress for \$740 million to buy  
repair parts and supplies needed to  
fill the operation requirements of  
its 700 active ships and 600 inactive  
ships. The Defense Subcommittee,  
61 House Committee on Appropriations,  
expressed concern over this request  
in view of the estimated \$1 billion  
inventory of such items already on  
board the ships. We made this  
review to determine if the Navy was  
making maximum use of available  
repair parts and supplies and to  
evaluate the adequacy of its system  
for managing shipboard inventories.

FINDINGS AND CONCLUSIONS

GAO's findings and the improvements  
needed relate to the three major  
phases in the lives of Navy ships.

During initial outfitting

An estimated \$5.8 million worth of  
excess inventories were loaded on  
57 new ships because of delays in  
applying an improved supply support  
concept to these ships. If the Navy  
immediately applies this concept in  
outfitting ships currently being  
built, it can substantially reduce  
the inventories to be loaded on  
these ships. (See p. 8.)

Excess ship repair parts valued at  
\$2.3 million were accumulated at two  
private shipyards because outfitting  
inventories for 14 ships were pur-  
chased before firm requirements were

established. A Navy shipyard, on  
the other hand, was able to hold  
excesses to a minimum by waiting  
until firm requirements were estab-  
lished before buying outfitting  
inventories. (See p. 10.)

Millions of dollars worth of excess  
outfitting inventories were held at  
private shipyards for periods of up  
to 5 years. Thus, these inventories  
were not available to the supply  
system if needed to fill the opera-  
tional requirements of ships. (See  
p. 11.)

At one Navy shipyard over a thousand  
usable items were removed from ships  
being modernized and were unneces-  
sarily disposed of and replaced with  
new items. (See pp. 11 to 13.)

While in the operating fleets

An estimated \$59 million worth of  
excess inventories are accumulated  
aboard Navy ships during the 3-year  
period between supply overhauls.  
Between \$11 million worth and  
\$29 million worth could be used to  
support other ships. The Navy  
does not have an adequate system  
for promptly identifying and redis-  
tributing some ships' excesses which  
are needed by other ships. As a re-  
sult, inventory excesses are held on  
board ships for periods of up to  
3 years. (See pp. 18 and 19.)

Inaccurate recordkeeping and improper  
requisitioning practices contribute  
to the accumulation of shipboard  
excesses. (See p. 19.)

After being deactivated

There is an estimated \$100 million worth of idle inventories on inactive ships and at inactive ship maintenance facilities. Although the Navy is using some of these inventories to support active ships, possibly as much as \$20 million worth could be used--without impairing the mobilization readiness of inactive ships. (See pp. 24 to 26.)

RECOMMENDATIONS

GAO recommends that the Secretary of the Navy insure that:

- 11 ships scheduled for delivery after September 1, 1973, be outfitted with revised, rather than conventional, allowances of hull, mechanical, and electrical repair parts. (See p. 17.)
- Inventories taken off ships undergoing shipyard work be used where possible to resupply the same ships or ships undergoing concurrent work at the same shipyard. (See p. 17.)
- A system is established to provide for prompt identification and redistribution of inventory excesses on board active ships. (See p. 23.)

--The need for strict compliance with prescribed shipboard procedures for recordkeeping and requisitioning material is emphasized. (See p. 23.)

--The Navy's policy concerning the use of inventories on inactive ships is further revised. (See p. 29.)

AGENCY ACTIONS AND UNRESOLVED ISSUES

The Navy generally concurred with the intent of GAO's recommendations but did not, in some cases, agree with the method of implementation. (See p. 35 .) The Navy cited a number of actions which had been taken, or which were being taken, that should, if properly carried out, bring about many of the needed improvements. The Navy's comments and GAO's evaluation of such comments are included in each chapter. (See pp. 14, 21, and 27.)

MATTERS FOR CONSIDERATION  
BY THE CONGRESS

The Appropriations Committees of the Congress and other committees may wish to consider the matters discussed in this report in connection with future Navy requests for funds to buy repair parts and supplies for Navy ships.

## CHAPTER 1

### INTRODUCTION

A ship, during its life cycle, normally undergoes several inventory phases. When ships are built or converted, they are outfitted with material necessary to operate. These inventories are maintained and replenished during day-to-day operations. Ships undergo a maintenance overhaul about every 3 years, at which time they normally receive supply overhauls to update the inventories on board. Finally, when ships are removed from active service, authorized inventories are retained aboard for possible use in the event of reactivation.

### OUTFITTING NEW AND CONVERTED SHIPS

Outfitting starts during the early stages of ship construction or modernization. As new equipment is purchased for installation, repair parts are also procured to support the equipment. As the parts are received, they are placed in mockup bins, similar to the planned storeroom layout aboard ship, where they remain until they are loaded on the ship. Loading begins about 4 months before the ship is delivered to the Navy. The types and quantities of outfitting material to be loaded are set forth in the Coordinated Shipboard Allowance List established for each ship. This allowance list is tailored to the individual ship on the basis of the type of hull, specific configuration of installed equipment, and crew composition and size.

A major objective of the allowance list is to provide balanced repair part support for 3 months. Equipment wear-out rates, repair time, and order and shipping times are some of the factors considered in computing requirements. The allowance list also includes "insurance" items, repair parts for which demand cannot be predicted but without which the ship's mission could be impaired. As of April 1971 there were 126 ships in the Navy's construction and modernization program; 49 additional ships were scheduled for fiscal years 1972-73.



## MAINTAINING AND REPLENISHING SHIPBOARD INVENTORIES

Once a ship is in operation, onboard inventories must be maintained in accordance with the ship's allowance list. Ships are required to carry a full allowance and ordinarily are not to exceed it. As repair parts and other material are used, replacements are ordered.

The ship's supply officer is responsible for the functions necessary to maintain and replenish stocks. These include purchasing, receiving, storing, and issuing material. Stock records, maintained for each item stocked, provide information on material ordered, a history of all receipts and expenditures, and other information required for managing shipboard stocks.

As of May 1971, the Navy had 700 active ships. Authorized repair part inventories aboard these ships were valued at about \$900 million.

## UPDATING SHIPBOARD INVENTORIES

After a ship has been in operation for about 3 years, repair part inventories are updated through a Supply Operations Assistance Program. This program was initiated in 1958 to improve the material and combat readiness of the fleets by providing supply overhauls to active ships concurrently with the regularly scheduled maintenance overhauls. Fleet commanders conduct the program for their respective ships on the basis of supply guidance and support from the Naval Supply Systems Command. During the overhaul, the total inventory is removed from the ship, excesses are redistributed, authorized material is restored on board, and items for which there are shortages are requisitioned.

## INVENTORIES ON INACTIVE SHIPS

When a ship is deactivated, it receives a supply overhaul similar to that provided active ships. The supply overhaul program for inactive ships began in 1968 and has been applied to about 50 ships since that time. Under this process inventory shortages are identified and recorded. Unauthorized items are removed and returned to the supply system or sent to disposal. The remaining items are retained on

the ship in the event of possible reactivation. As of April 1971 the Navy had 600 inactive ships; an additional 59 were scheduled for deactivation through fiscal year 1972.

#### RESPONSIBILITIES AND ORGANIZATIONS

The Chief of Naval Operations has responsibility for the construction, operation, and deactivation of Navy ships.

Responsibility for outfitting new and modernized ships with material has been delegated to the Chief of Naval Material and is exercised principally through the Commanders, Naval Ship Systems Command and Naval Supply Systems Command. Fleet commanders are responsible to the Chief of Naval Operations for maintaining and replenishing shipboard stocks for active vessels. Ships of a fleet are grouped by ship types, such as destroyers or submarines, and are assigned to type commanders for administration purposes. The Commander, Naval Ship Systems Command, is responsible for the custody, maintenance, and security of the Navy's inactive ships and the inventories on these ships.

The scope of our review is discussed in chapter 5.

## CHAPTER 2

### NEED FOR IMPROVEMENTS IN

#### SUPPLY OUTFITTING OF NAVY SHIPS

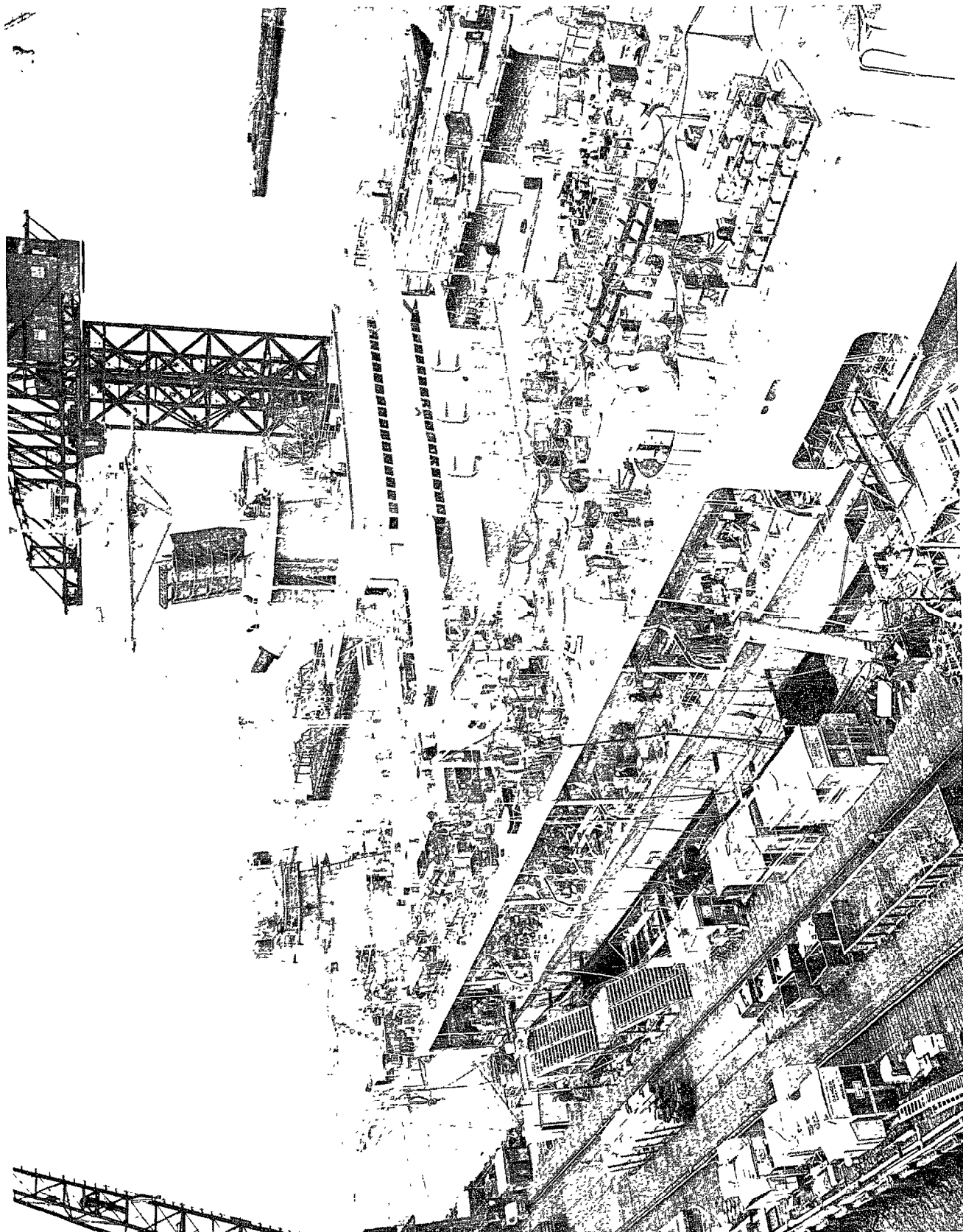
Excess inventories estimated at \$8.1 million were accumulated during the initial supply outfitting of 71 new Navy ships built at private shipyards over the past 4 years. These excesses were retained aboard or at the shipbuilding sites for extensive periods. In addition, thousands of dollars worth of new material was purchased unnecessarily to resupply ships modernized in a naval shipyard.

Factors contributing to these conditions include (1) delayed implementation of an improved ship supply support program (\$5.8 million), (2) premature purchase of outfitting material (\$2.3 million), (3) lack of appropriate action by the Navy to insure that excess material was promptly returned to the supply system, and (4) failure to use available inventories. The photograph on page 7 shows a typical example of initial supply outfitting of a newly constructed ship.

#### DELAYED IMPLEMENTATION OF IMPROVED SHIP SUPPLY SUPPORT PROGRAM

In August 1964 the Chief of Naval Operations issued a new policy and criteria for supply support of the Navy operating forces. To implement this policy the Navy established the Fleet Logistic Support Improvement Program. Under this program the operating stocks of repair parts and supplies to be carried by ships were to be reduced from a 1-year to a 90-day supply. Also, the number and types of insurance items carried by ships were to be significantly reduced.

In August 1966 the Navy began applying the improved supply support program to active ships at the time of supply overhaul (updating of a ship's inventory allowance which occurs every 3 years), which reduced inventories by millions of dollars. In September 1969 the new program was applied to ships being modernized at naval shipyards but not to newly constructed ships at private shipyards.



OFFICAL NAVY PHOTOGRAPH

**Initial supply outfitting of a newly constructed ship at the Newport News Shipbuilding and Dry Dock Company, Newport News, Virginia**

Navy officials advised us that the necessary tools (i.e., microfilm data banks of allowance parts lists) were not available to fully apply the improved program to newly constructed ships until September 1969. Also, according to these officials, the improved program was not applied to ships being constructed in private shipyards before September 1969 because of the risk of costly contract change orders. The Navy has, however, applied the improved program to ships for which contracts were awarded during or after September 1969.

In December 1970 and May 1971, we discussed with Navy officials the feasibility of retroactively applying the improved supply program to ships recently constructed in private shipyards but not yet loaded. We informed these officials that by so doing, outfitting inventories already purchased under the old supply program but which exceeded requirements under the new program could be promptly identified and returned to the supply system.

We further informed the Navy officials that an estimated \$5.8 million worth of outfitting inventories excess to those required by the revised supply program had been or were being loaded on board 57 new ships. These ships were delivered or scheduled for delivery from July 1970 through February 1972. We pointed out that the excess would probably remain on these ships for 3 or more years because the Navy identifies and removes excesses only when ships receive supply overhauls. (This problem is described in detail in ch. 3.)

Also, we pointed out that the Navy could avoid loading an estimated \$3.7 million worth of excess outfitting inventories on board 36 new ships scheduled for delivery after March 1, 1972, by promptly applying the improved program to determine inventory loading requirements for these ships. Navy officials acknowledged the feasibility and economy of applying the improved supply support program to the 36 ships. However, they thought that such action would result in requirements for numerous items not authorized under the old program and that the shortage of these items would seriously impair the material readiness of these ships.

We pointed out that a 1968 study made by the Naval Supply Systems Command disclosed that application of the improved program to a newly constructed ship would result in minor shortages for only four items. We also said that, by applying the program to newly constructed ships, the Navy could improve the long-range material readiness of these ships by earlier identification and acquisition of the additional items required by the improved program.

ACCUMULATION AND PROLONGED RETENTION  
OF EXCESS OUTFITTING INVENTORIES

Excess ship repair parts estimated to be worth \$2.3 million were accumulated at two private shipyards because outfitting material for 14 Navy ships constructed there was purchased before firm requirements were established. Although this material was known to be excess, the shipbuilders held it up to 28 months after the ships were delivered primarily because the Navy did not promptly recover it.

Accumulation

The Navy computes requirements for repair parts needed for initial support of equipment installed on newly constructed ships at two intervals--about 14 months and then 8 months before completion of construction. The first computation consists of estimates based on the known equipment configuration at that time, whereas the second represents final requirements based on more refined factors. The second computation generally results in lower requirements because such factors as application of parts to more than one piece of equipment are taken into account.

Nevertheless, at private shipyards, most of the repair parts needed for newly constructed ships are purchased on the basis of the initial computation. Substantial quantities become excess when the computations are refined. According to personnel at the private shipyards we reviewed, this is done to insure that long production leadtime items are ordered in sufficient time to permit delivery before completion of ship construction.

In contrast, the practices we observed at one Navy shipyard had much better results. No repair parts were ordered for support of a newly constructed ship until firm requirements were established. At the completion of construction, the ship's initial inventory allowance of repair parts was 96.6 percent filled with only \$1,000 in excesses accumulated. A similar ship constructed in a private yard was 92 percent filled while accumulating over \$121,000 in excess repair parts.

### Prolonged retention

At one private shipyard about \$2.1 million worth of excess repair parts for 11 new ships had been purchased. These parts were retained from 10 to 28 months after delivery of the ships to the Navy. Shipyard officials advised us that there was no contractual provision which required the prompt return of excess outfitting inventories to the Navy and that the Navy had not requested return of these excesses.

Similar conditions also exist at other private shipyards. In May 1971 the Naval Ship Systems Command reported that inspections of private shipyards revealed that considerable excess material had been warehoused from 1 to several years. For example, excess repair parts for a ship commissioned in May 1965 were still being warehoused at a private shipyard in September 1970.

By promptly recovering excess repair parts accumulated at private shipyards, the Navy can avoid purchases of identical items needed to fill operational requirements.

### FAILURE TO USE AVAILABLE INVENTORIES

When ships arrive at naval shipyards for modernization, their inventories are removed and stored at the shipyards pending completion of modernization and determination of new inventory allowances. The Navy is not making maximum use of these inventories in filling the initial supply requirements of modernized ships.

### Excess repair parts not used to fill shortages

Navy policy does not require the exchange of inventory data between ships undergoing concurrent modernization to determine whether one ship's excesses could be applied against another's shortages.

At one naval shipyard, we compared inventories of repair parts removed from two ships undergoing modernization from January 1969 to June 1970 with the new inventory allowances for these ships. We repeated this process for two ships which underwent similar work from February 1970 to April 1971.



As shown below this comparison revealed that a substantial number of the repair part excesses removed from each ship could be used to fill identical shortages on the ship undergoing concurrent modernization. For example, 434 of the repair part excesses removed from the U.S.S. Preble could have been used to fill identical shortages on the U.S.S. Blandy. Conversely, the Preble could have used 689 of the Blandy's excesses.

<u>Ship</u>	<u>Number of items</u>	<u>Value</u>
<u>Preble</u>	434	\$ 5,609
<u>Blandy</u>	689	18,489
<u>Dewey</u>	481	11,665
<u>Manley</u>	237	6,885
	<u>1,841</u>	<u>\$42,648</u>

Of the 1,841 excess repair parts, 1,084 were disposed of because they had a value of \$25 or less. The Navy does not consider it economical to return such quantities to the supply system. The remainder of these repair parts were returned. When these excess repair parts were being disposed of or returned to the supply system, the shipyard was ordering a like number of identical items for the other ships.

#### Usable operating space items sent to disposal

Portable and noninstalled items aboard ships are known as operating space items; e.g., handtools, office furniture, typewriters, galley utensils, and binoculars. Although few such items held at shipyards are new, many are usable and are needed upon completion of modernization by the ships from which they were removed. The Navy Ship Systems Command has not published any criteria for the shipyards to follow in determining the extent to which used operating space items are to be applied against the inventory requirements of modernized ships.

As a result, many of these items are being arbitrarily disposed of and replaced with new items. For example, our review of operating space items removed from two ships being modernized at a naval shipyard disclosed that 517 items,

valued at about \$68,400, were usable, as determined by shipyard technicians, and were needed to fill the new inventory allowances of these ships after modernization. However, 371 of these items, valued at about \$15,000, were arbitrarily disposed of and replaced with new items. These included handtools, office furniture, and galley utensils.

There were two basic reasons for the failure to use all the needed items.

- The new crews assigned to modernized ships in many instances routinely refused to accept certain used items, such as furniture, handtools, and galley utensils.
- Shipyard personnel arbitrarily ignored the inventory on hand for some items if only part of the quantity required was available.

In the absence of specific guidance from higher command levels, shipyard personnel felt that the ships' crews had the right to refuse used items except for certain costly equipment. Shipyard personnel were unable to satisfactorily explain why they ignored partial quantities of an item's required inventory allowance.

## AGENCY COMMENTS AND OUR EVALUATION

The Assistant Secretary of the Navy (Financial Management) commented on our findings in a letter dated June 14, 1972. (See app. I.) He stated that the Navy generally agreed with our recommendation that its new improved ship supply support program be applied in the initial supply outfitting of all newly constructed ships. He also stated that the improved program would be applied to ships currently being constructed when contractually feasible and time permits. The Navy did not agree that it could avoid loading an estimated \$3.7 million worth of repair parts on board 36 new ships by promptly applying the improved program to revise the inventory loading requirements for these ships. These ships, the Navy said, will be equipped with revised allowances of electronic repair parts and the cited cost savings are therefore overstated if not limited to repair parts for hull, mechanical, and electrical equipment. The Navy commented further that it had already equipped or planned to equip 34 of these ships with conventional allowances of hull, mechanical, and electrical repair parts.

The reason the Navy gave for not equipping these ships with the revised repair part allowances was that additional costs would be incurred to (1) reconfigure the inventory storage space layouts for these ships, if the storage space had already been designed (about 4 months prior to completion of ship construction), to accommodate a revised inventory load and (2) redistribute the excesses and purchase the shortages which would result from a change in the mix of items included in a revised allowance. The Navy said that our report was in error concerning the number of additional items that would have to be purchased to equip these ships with a revised load of hull, mechanical, and electrical repair parts. (See p. 8.) According to the Navy, its 1969 study of the application of the improved supply program to the conventional repair part allowances carried by a guided-missile destroyer showed that about 2,100 additional repair parts would be needed.

We are aware that the Navy is equipping the 36 ships with revised repair part allowances for electronic equipment. Accordingly, our estimate of outfitting excesses for these ships is limited to hull, mechanical, and electrical repair parts. The reasons the Navy gave do not justify its decision to equip 34 of these ships with conventional repair part allowances for support of hull, mechanical, and electrical equipment. In May 1971 when we advised the Navy that

it could avoid loading an estimated \$3.7 million worth of repair part excesses on the 36 ships; the Navy had 9 to 35 months leadtime before the scheduled completion of these ships to recompute inventory loading requirements on the basis of the improved support program. The Navy considers 6 months leadtime sufficient for this.

Had the Navy taken timely action to revise the loading requirements for these ships, no additional costs would have been incurred to redesign the inventory storage space layouts for these ships. The additional costs cited by the Navy to redistribute repair part excesses and to order shortages will be incurred regardless of whether newly constructed ships are equipped initially with the revised repair part allowances or at the time of supply overhaul. (See p. 9.)

We do not agree that our report is in error concerning the number of additional repair parts that would have to be obtained for the 36 ships prior to completion of construction if the inventory loading requirements for these ships had been changed to accommodate a revised repair parts allowance for hull, mechanical, and electrical equipment. The Navy study we cited (see p. 9), as being representative of the changes that would occur in the conventional repair part allowances planned for these ships involved the full conventional allowance (over 20,000 items) of hull, mechanical, and electrical repair parts for a destroyer escort.

We consider the above study more representative than the guided-missile destroyer study cited by the Navy because 15 of the 36 ships involved are of the destroyer escort class, whereas none are of the guided-missile destroyer class. Moreover, all the additional repair part requirements revealed by the guided-missile destroyer study pertain to electronic equipment. This is not pertinent because the Navy is already equipping the 36 ships with revised electronic repair part allowances.

The Navy still has sufficient time to recompute inventory loading requirements for 11 of these ships. (See app. II.) By so doing, it can avoid outfitting these ships with an estimated \$1.1 million worth of excess repair parts.

The Navy concurred in general with our recommendation that outfitting inventories not be purchased until firm

requirements are established. The Navy said it recognizes that excesses are created by the shipbuilders' practice of buying these inventories before firm requirements are known but that it has only recently become able to remedy this situation. According to the Navy, beginning in October 1972 it would have computerized capability for determining cumulative outfitting requirements for individual items at various points throughout the ship's construction cycle. The cumulative requirements will be furnished to shipbuilders for purchase of parts on mutually accepted schedules consistent with item procurement leadtimes and ship construction schedules.

The action planned, if properly implemented, will minimize future accumulation of outfitting excesses. We will examine the effectiveness of the Navy's action in future reviews of this area.

The Navy agreed with our recommendation that outfitting excesses accumulated at private shipyards be promptly returned to the supply system. The Navy said that the prolonged retention of these excesses at private shipyards occurred in part as a result of dispute as to who owned the excesses. According to the Navy, its ownership of outfitting excesses would be more clearly specified in future shipbuilding contracts. The Navy further advised that it is currently screening outfitting excesses for 2,000 items held at private shipyards for possible return to the supply system.

The action taken and planned by the Navy will minimize the prolonged retention of excesses at private shipyards.

The Navy generally concurred with our recommendation that inventories removed from ships being modernized be used to the maximum extent possible to resupply the same ships or ships undergoing concurrent modernization. However, the Navy stated that the savings cited in our example would be significantly offset by keypunch costs and shipyard labor and overhead charges associated with (1) establishing and comparing inventory asset balance data for ships undergoing concurrent modernization and (2) locating repair part excesses which matched repair part shortages. Also, the Navy cited several programs which it felt provided for maximum use of excess items removed from ships undergoing shipyard work, such as modernization or supply overhauls.

According to the Navy, our observations concerning operating space items were essentially accurate, except that

it is doubtful that the usable items went directly to disposal. The Navy stated that the operating space items not selected for reuse by the ships from which they were removed were supposed to be made available for free distribution to other ships. The Navy also cited the reissue of firefighting suits having missing thumb and finger protection as an example of the questionable value of reusing operating space items.

The offsetting costs cited by the Navy will be incurred anyway to identify and locate inventories held in shipyard storage needed to resupply the ships from which they were removed upon completion of modernization. Further, the programs cited by the Navy for maximum use of excesses removed from ships undergoing shipyard work provide only for returning to the supply system excesses valued at more than \$25 per item which are needed by operational ships. Excesses valued at \$25 or less are disposed of at the shipyard because the Navy does not consider it economical to return such quantities to the supply system. As shown in our example on page 12, a majority of the excess parts removed from one ship and needed by another ship in the same shipyard were disposed of because they were valued at \$25 or less. This could have been prevented by a program requiring the use of excesses removed from ships undergoing shipyard work to fill identical item shortages of ships undergoing concurrent work in the same shipyard.

Moreover, the ships' crews did not refuse reusable operating space items cited in our example because of safety or morale reasons, such as in the firefighting suit example. Instead they were ignored, in part, because the inventory on hand was not sufficient to fill the total requirement. Further, we can find no support for the Navy's belief that the usable operating space items cited in our report were made available to the fleet rather than disposed of.

#### RECOMMENDATIONS

We recommend that the Secretary of the Navy reconsider his position and promptly insure that (1) the 11 ships shown in appendix II are outfitted with revised, rather than conventional, allowances of hull, mechanical, and electrical repair parts and (2) inventories removed from ships undergoing shipyard work be used where possible to resupply the same ships or ships undergoing concurrent work at the same shipyard.

## CHAPTER 3

### NEED FOR IMPROVED VISIBILITY

#### AND CONTROL OVER ACTIVE SHIP INVENTORIES

An estimated \$59 million worth of excess inventories are accumulated aboard active Navy ships during the 3-year periods between supply overhauls. From \$11 million worth to \$29 million worth of these excesses could be used to meet the needs of other ships. However, the Navy does not have a system for promptly identifying and redistributing such excesses. Excesses generally are retained for periods of up to 3 years.

We did not attempt to determine all the major problems contributing to shipboard excesses. However, our review of supply practices aboard three ships indicated that stock record inaccuracies and poor requisitioning practices were contributory factors.

#### INADEQUATE VISIBILITY OVER SHIPBOARD STOCKS

The Navy's primary management tool for control of shipboard inventories is a standardized information-reporting system for ships known as the Afloat Consumption Cost and Effectiveness Surveillance System. It was initiated in 1966 and is supposed to provide facts on how much material is on board ships, how much has been used, and what items are needed. The Navy, in support of its fiscal year 1970 budget request, stated that this system insured maximum use of ship inventory resources by promptly identifying excesses on ships which could be applied against shortages on other ships. The system as presently configured does not provide this type of data.

The system shows the total number and value of items which a ship is authorized to carry and the total number and dollar value of line item shortages. It does not show the actual quantities and value of inventories on hand for a particular item which are excess. Therefore, management is not apprised of the availability of item excesses on board some ships which could be applied against shortages on other ships.

At present, excesses are generally identified and redistributed only when the ships are overhauled, generally

every 3 years. Inventories are removed from ships, physically counted, and compared against existing authorized allowances. Excesses are redistributed or disposed of.

We examined the results of the supply overhauls made in fiscal years 1970 and 1971 for 72 ships. A comparison of inventories removed from these ships with inventory allowances at the start of the overhauls revealed excesses valued at \$6.1 million, or about \$84,700 per ship. On the basis of these results, we estimate that excesses valued at about \$59 million will be accumulated on a recurring basis on board the Navy's 700 active ships during the 3-year periods between supply overhauls. On the basis of ship inventory commonality studies made by the Navy and the Department of Defense (DOD), we believe that from \$11 million to \$29 million worth of the estimated excesses can be used to satisfy the needs of other ships.

Excesses should not remain on board for up to 3 years before they can be redistributed. A more effective system is needed to monitor shipboard inventories to insure maximum use.

FACTORS CONTRIBUTING TO SHIPBOARD EXCESSES

Our review of supply procedures and practices aboard three ships disclosed numerous instances of stock record inaccuracies and poor requisitioning practices which contributed to the accumulation of excesses.

Inaccurate stock records

Our physical inventory of 404 items randomly selected from the three ships disclosed that the stock records for 116 items, or about 29 percent, did not agree with the quantities on hand, as shown below.

<u>Ship</u>	<u>Line items counted</u>	<u>Errors</u>	<u>Error rate</u>
1	111	31	28 percent
2	180	52	29 percent
3	<u>113</u>	<u>33</u>	<u>29 percent</u>
	<u>404</u>	<u>116</u>	29 percent



In a majority of instances, our physical counts showed more inventory on hand than that shown by the stock records.

Poor requisitioning practices

In 103 cases material was requisitioned in excess of allowed quantities or requisitions were not canceled for material no longer needed, and in 148 cases requisitions for material were not properly posted in the stock records.

Examples of the improper requisitioning practices follow.

Electron tube (FSN 5960-262-0210)

In May 1968, 205 tubes were on hand when only 16 were authorized. Between May 1968 and January 1971, seven requisitions were submitted for additional tubes. Quantities on hand when the requisitions were submitted ranged from 189 to 411 items.

Electron tube (FSN 5960-702-0430)

On October 22, 1969, a requisition for six tubes was submitted to replenish shipboard stock. At that date the stock records showed a balance of zero when the ship was allowed six. Five days after the requisition was submitted, a physical inventory revealed 21 items on hand. But no action was taken to cancel the outstanding order.

Transformer (FSN 5950-708-2380)

On October 18, 1970, six transformers were ordered to bring this item up to its authorized level of eight. But this requisition was not recorded and 6 days later eight more transformers were ordered. At the time of our review, 14 were on hand.

Supply officials attributed poor shipboard supply performance to (1) young and inexperienced supply officers, (2) lack of qualified and conscientious supply personnel, and (3) lack of management emphasis on importance of supply functions to successful ship operation. We were informed that supply was considered a secondary job to the assigned

personnel, while the primary emphasis was on training and other duties which took up most of their time.

#### AGENCY COMMENTS AND OUR EVALUATION

The Navy concurred with the intent of our recommendation that inventory excesses on active ships be promptly identified and redistributed to fill shortages elsewhere. However, the Navy felt that implementation would require maintaining a perpetual inventory system aboard ships. It stated that to do so would be so cost prohibitive as to negate any potential savings. The Navy cited several programs which it felt provided for maximum use of shipboard assets. The Navy contended our projection of \$59 million of excess inventories on board ships is grossly overstated since it is based on supply overhaul data for ships. According to the Navy, 75 percent of the dollar excesses included in our projection base were not true excesses but abnormal one-time conditions generated during supply overhaul as a result of equipment changes and conversion from conventional to improved revised inventory allowances of repair parts.

We do not agree that it is necessary to maintain a perpetual inventory system aboard ships to promptly identify and redistribute excesses needed elsewhere. Only about 3 percent of the items (about 200 items on the average) on board ships are used twice or more in 6 months. Because of this these are the items most susceptible to excess accumulation. For example, a recent Navy study revealed that 64 percent of the dollar inventories of selected active items on Atlantic Fleet Amphibious Force ships were excess.

The Navy already can identify and redistribute selected active item excesses accumulated on board ships. Shipboard personnel physically inventory and update the stock record balances for these items semiannually. All ships report quarterly the quantities and dollar assets, including excesses and shortages, for each item to the shore headquarters of the applicable fleet-type commands. The type commands use these reports to identify item dollar shortages for inclusion in budget requests. The type commands or higher levels could, but do not, use these reports to identify shipboard excesses and insure that these excesses are redistributed when the ships return to their home ports after operational deployments of about 6 months. The ships generally remain

in port for 6 months, except for training exercises of limited durations, before being redeployed.

The Navy erroneously assumes that our projection base for the \$59 million estimate of excess inventories included unavoidable one-time excesses generated during supply overhauls of ships. As stated in our report, the value of the excesses included in our projection base involved shipboard excesses existing just prior to the start of overhauls. Our projection base would have included an average dollar excess of \$270,000 per ship, instead of \$84,700, had we considered unavoidable excesses generated during overhauls. Accordingly, we feel that our projection represents recurring excesses accumulated aboard ships during normal supply operations.

The programs cited by the Navy for maximum use of shipboard assets are programs for identification and redistribution of excesses during overhauls which occur every 3 years. Excesses should not remain on board ships for up to 3 years before they can be redistributed.

The Navy did not agree, on the basis of the facts presented in this report, that it is necessary to reemphasize to ship supply personnel the need for strict compliance with prescribed procedures for recordkeeping and requisitioning. It said that our statements regarding poor supply performance aboard ships are only partially true. According to the Navy, it had not observed any general lack of conscientious performance by supply personnel and did not concur that there is a lack of management emphasis on the importance of supply functions in successful ship operation. The Navy commented further that the stock record accuracy results of our sample tests on three ships are not indicative of Navy-wide performance. A 99-percent accuracy rate, the Navy said, was revealed for Atlantic Fleet ships upon completion of recent supply overhauls. Also, the Navy said that the latest annual supply inspections of the three ships disclosed stock record accuracy rates ranging from 91 to 99 percent as compared with the 72-percent rate disclosed by our tests.

We do not agree that there is a high degree of continuing stock record accuracy and adequate supply discipline aboard ships. Supply personnel on board those ships verified the results of our tests. The high degree of stock record

accuracy cited by the Navy as being representative of its ships at all times is misleading. Ships are expected to have a high stock record accuracy rate after supply overhauls because during these overhauls a complete physical inventory is taken and stock record balances are adjusted to agree with the physical counts. However, as time passes between overhauls, a ship's stock record accuracy diminishes. For example, the 99-percent accuracy rate cited for the U.S.S. LaSALLE in the Navy reply was found to exist only 3 months subsequent to a supply overhaul. When we found a 72-percent accuracy rate for this ship, it had not been overhauled for about 2 years.

In our opinion, the examples of poor supply performance we cited contributed to the large buildup of excesses on board active Navy ships and indicate the need for increased management emphasis on strict enforcement of supply discipline.

#### RECOMMENDATIONS

We recommend that the Secretary of Defense direct the Secretary of the Navy to establish a system providing for promptly identifying and redistributing inventory excesses on board active ships. Also, we recommend that the Secretary of the Navy reconsider his position and reemphasize the need for strict compliance with prescribed shipboard procedures for recordkeeping and requisitioning of material.

## CHAPTER 4

### NEED FOR INCREASED USE OF INACTIVE

#### SHIP INVENTORIES TO SUPPORT ACTIVE SHIPS

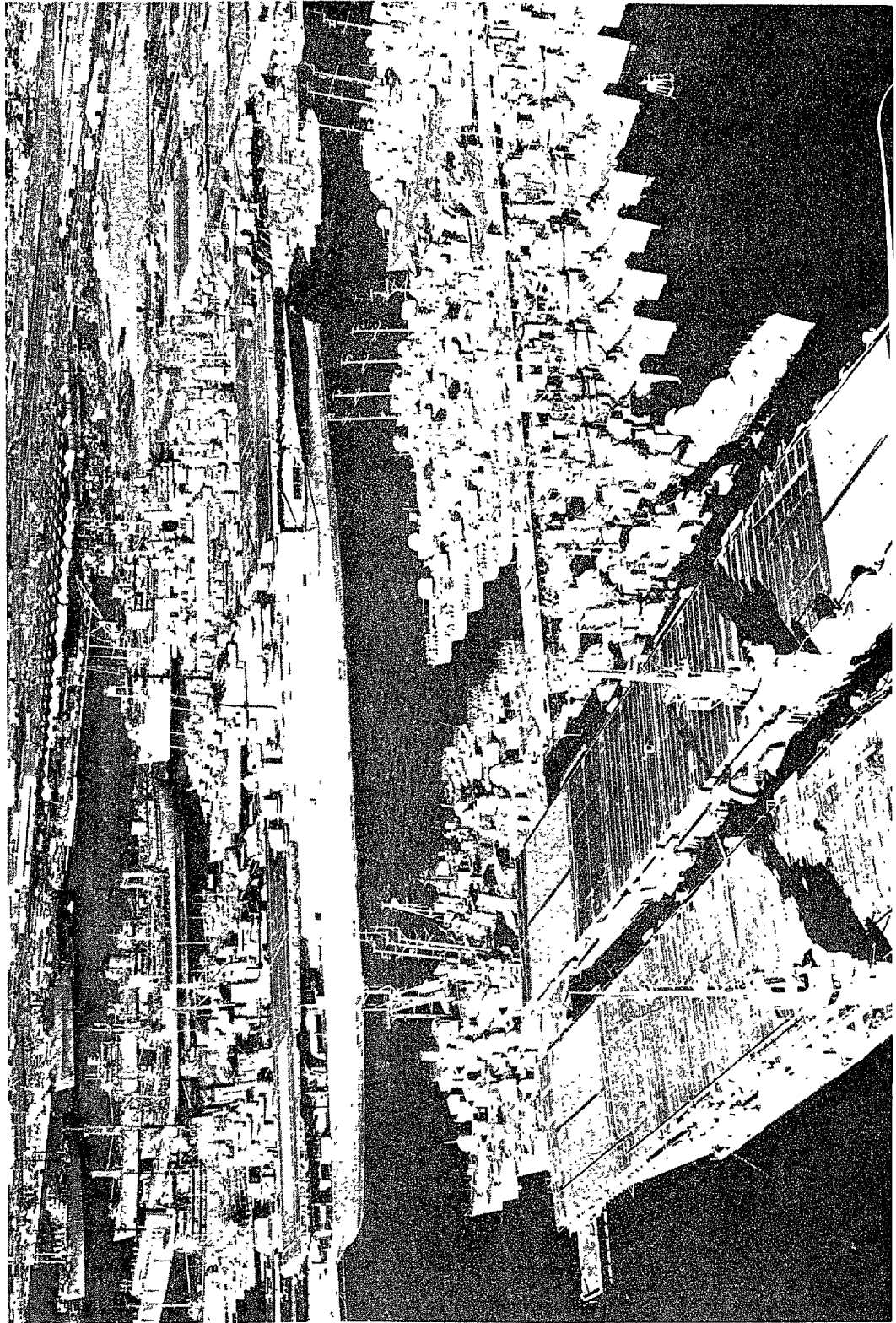
We estimate that there are \$100 million worth of idle inventories on inactive ships and at inactive ship maintenance facilities. Although the Navy is using some of these inventories to support active ships, possibly as much as \$20 million worth could be used without seriously impairing the mobilization readiness of inactive ships.

#### AVAILABILITY OF AND NEED FOR INACTIVE SHIP INVENTORIES

The actual quantity and dollar value of inventories retained on board inactive ships and at inactive ship maintenance facilities is not known because no records were maintained for ships inactivated prior to August 1967. According to Navy records, on 50 ships inactivated since then, repair parts worth about \$7.9 million--about \$158,000 per ship--were on board. In addition, Navy auditors reported in November 1970 that equipment such as binoculars, telescopes, etc., worth about \$1.1 million, or \$9,700 per ship, were being retained for mobilization support of 114 inactive ships.

We believe the inventories retained for support of the above inactive ships, \$167,700 per ship (\$158,000 plus \$9,700), are representative of inventories being held in reserve for the inactive fleet. In fiscal year 1970, DOD withheld \$8.4 million from the Navy's allocation of ship supply and equipage funds on the basis that 50 percent of the \$16.8 million worth of repair parts and equipment inventories on board 65 ships (\$258,000 per ship) scheduled for inactivation that year could be used to supply active ships. The Navy agreed some of these inventories could be used to support the active fleet, but it estimated that the amount available was less and that it ranged from 20 to 50 percent.

Using the Navy's figure of \$167,700 worth of inventory per inactive ship, we believe there is about \$100 million worth of inventory held for the Navy's 600 inactive ships and, on the basis of the Navy's most conservative estimate



OFFICAL NAVY PHOTOGRAPH

Inactive ships berthed at an inactive ship maintenance facility.

that 20 percent of the inventory held in reserve for the inactive fleet could be used in support of the active fleet, we estimate this amount to be at least \$20 million.

In a number of instances inactive ship inventories were needed to support active ships. For example, active ships critically needed \$300,000 worth of binoculars held at one inactive ship facility reviewed. Also 48 percent of the 967 inventory items for which shortages were reported by an active ship were available on one of the inactive ships reviewed.

#### MOBILIZATION READINESS NOT IMPAIRED BY INCREASED USE OF INACTIVE SHIP INVENTORIES

During the past 10 years, 27 ships have been reactivated. The time required to reactivate these ships ranged from 8 to 25 months. We believe that, in view of the time required to reactivate ships, the Navy supply system could adequately respond to the mobilization needs of these ships before completion of reactivation.

Further, it appears that a large percentage of repair parts retained on inactive ships would not be needed in the event of mobilization because of extensive equipment changes made during reactivation. For example, we were informed at one naval shipyard that only 10 to 15 percent of the repair parts retained on three inactive ships could be used to fill the inventory allowance requirements of these ships following reactivation.

#### PRESENT POLICY RESTRICTS USE OF INACTIVE SHIP INVENTORIES

For ships inactivated prior to August 1967, Navy policy generally limited removal and redistribution of inventories to consumable or deteriorative items (paint, office supplies, etc.). Inventories of repair parts and equipage were retained on board the ships or offloaded and stored at inactive ship maintenance facilities. Inventories on board these ships at the time of inactivation were not physically counted, and no records were kept showing the actual inventories retained.

In August 1967 the Navy initiated the Inactive Ship Supply Overhaul Program. Under this program, repair parts on

ships being inactivated are physically counted, inventory allowances are updated, and repair parts in excess of updated allowances are returned to the supply system. Equipment was not covered under this program.

We discussed with Navy officials the feasibility of expanding the use of inactive ship inventories to support active ships. We were told policies were being revised to provide that all items (repair parts and equipment) critically needed elsewhere be removed from ships being deactivated whether or not they were excess. This approach would also be applied to ships previously inactivated.

#### AGENCY COMMENTS AND OUR EVALUATION

The Navy agreed with the intent, but not the proposed method of implementation, of our recommendation that more of the usable inventory on board inactive ships and at inactive ship facilities be made available to meet the needs of active ships. The Navy stated that it had approved the proposed policy revision mentioned in our report concerning the use of inactive ship inventories.

According to the Navy, implementation of its new policy will result in a 5- to 10-percent reduction of the dollar investment in inactive ship inventories. The Navy commented further that binoculars and navigational equipment held at inactive ship facilities (see p. 26) had been made available to satisfy critical active fleet needs.

According to the Navy, our conclusion that a reduction of 20 percent of the dollar investment in inactive ship inventories could be accomplished without seriously impairing the mobilization readiness of inactive ships is subjective. The Navy stated that several statistics cited in our report on which this conclusion is based are in error or are questionable. Its records, the Navy said, showed that 42 ships were reactivated during the past 10 years versus the 27 ships we cited. Also, the Navy stated that the time required to reactivate these ships ranged from 4 to 10.5 months versus the 8 to 25 months we stated. Moreover, the Navy commented that, as the Inactive Ship Supply Overhaul Program expands the number of inactive ships overhauled, it is estimated that more than 50 percent of the repair parts retained on inactive ships will be needed in the event of reactivation versus the 10 to 15 percent we reported.



The Navy questioned the validity of our \$20 million estimate of inactive ship inventories that can be used by active ships. It replied that, while there is commonality of some electronics, equipage, and operating space items between inactive and active ships, there is much less commonality in the hull, mechanical, and electrical inventories. According to the Navy, the \$20 million figure would be offset somewhat by location, identification, removal, packaging, and preservation costs.

Contrary to the Navy's contention, GAO's conclusions concerning the amount of inactive ship inventories that can be used to support active ships without compromising mobilization readiness needs were not based on erroneous statistics and were not made without consideration of likely trade-off costs. The number of inactive ships reactivated during the past 10 years and the time frames required for reactivation as cited in our report are based on official information supplied by the Naval Ships Systems Command. The additional ships cited in the Navy reply as being reactivated during the past 10 years were noncombatant (barracks ships) and special-mission-oriented (intelligence gathering) ships. We do not consider these ships representative because there is little commonality between their inventories and those of combatant ships, which make up the bulk of the Navy's active fleet.

The reactivation time frames cited in the Navy reply include only the minimum time necessary to prepare an inactive ship for essential structural alterations and equipment modernization. They do not include the time (several months) necessary to accomplish these actions. We could find no support for the Navy's conclusions that more than 50 percent of the repair parts retained on inactive ships after inactive supply overhauls would be needed in the event of reactivation. Inactive ship supply overhauls do not result in equipment changes and therefore do not result in changes in the type of items carried by inactive ships, as implied by the Navy. Instead, these overhauls identify and remove excess repair parts.

Our \$20 million estimate of inactive ship inventories that could be used to support active ships was based on a 1969 Navy ship commonality study, which showed that 20 percent of inventories on inactive ships could be used to support active ship requirements. The costs cited by the Navy

for location, identification, removal, packaging, and preservation of inactive ship inventories are costs that will be substantially incurred anyway when the inactive ships undergo supply overhauls and, therefore, will not significantly offset the potential \$20 million savings we estimated.

In view of the number of ships reactivated by the Navy in the last 10 years and its current plans for reactivation in the event of an emergency, there is little likelihood that the vast majority of the Navy's inactive fleet will ever be reactivated. Moreover, the 8 to 25 months required to reactivate ships would be more than sufficient for the supply system to respond to the supply needs of the reactivated ships. The actions taken and planned by the Navy will provide for increased use of inactive ship inventories. But these inventories can be used even more.

#### RECOMMENDATIONS

We recommend that the Secretary of the Navy require that the Navy's policy on use of inactive ship inventories be further revised to provide that (1) all inventories needed by active ships, regardless of criticality of need, be removed from ships being deactivated and returned to the supply system and (2) information on material held at inactive ship facilities be periodically furnished to Navy inventory managers so that they can redistribute this material to support active ships.

## CHAPTER 5

### SCOPE OF REVIEW

We examined selected aspects of the Navy's system for managing shipboard inventories. Our review included Navy policies, procedures, and practices in outfitting new or modernized ships with initial inventories, maintaining and replenishing inventories aboard active ships, and disposition of material from deactivated ships. To the extent deemed appropriate, we tested the procedures and practices at selected activities. We also observed supply practices aboard one ship at sea.

We did not appraise overall the Navy's programs for establishing and managing shipboard inventories. Our examination was directed primarily to those aspects of the inventory management system which appeared to warrant particular attention.

Our fieldwork included visits to the following locations.

#### Naval Operating Commands:

Headquarters, Commander-in-Chief, Atlantic Fleet,  
Norfolk, Virginia

Commander, Service Force, Atlantic, Norfolk, Vir-  
ginia

Commander, Cruiser-Destroyer Force, Atlantic, New-  
port, Rhode Island

Commander, Amphibious Force, Atlantic, Norfolk, Vir-  
ginia

#### Inventory control point:

Ships Parts Control Center, Mechanicsburg, Pennsyl-  
vania

#### Inactive ship maintenance facility:

Naval Inactive Ship Maintenance Facility, Ports-  
mouth, Virginia

#### Shipyards:

Norfolk Naval Shipyard, Portsmouth, Virginia

Philadelphia Naval Shipyard, Philadelphia, Pennsyl-  
vania

Newport News Shipbuilding and Drydock Company, New-  
port News, Virginia

Supervisors of Shipbuilding:

Portsmouth, Virginia  
Newport News, Virginia  
Bath, Maine  
Pascagoula, Mississippi

Ships:

U.S.S. Josephus Daniels, Norfolk, Virginia  
U.S.S. Blandy, Norfolk, Virginia  
U.S.S. La Salle, Norfolk, Virginia

We held several meetings and discussions with Washington officials from the Office of the Chief of Naval Operations, Comptroller of the Navy, Chief of Naval Material, Naval Ship Systems Command, and Naval Supply Systems Command. These meetings were held to clarify and attempt to resolve issues raised during our review.



DEPARTMENT OF THE NAVY  
OFFICE OF THE SECRETARY  
WASHINGTON, D. C. 20350

14 JUN 1972

Mr. Henry W. Connor  
Associate Director, Logistics and  
Communications Division  
U. S. General Accounting Office  
Washington, D. C. 20548

Dear Mr. Connor:

The Secretary of Defense has asked me to reply to your letter of 27 March 1972 which forwarded the GAO draft report on economies available through improved management of shipboard inventories.

I am enclosing the Department of the Navy reply to the report.

Sincerely yours,

A handwritten signature in cursive script, reading "R. D. Neesen".

ROBERT D. NESEN  
ASSISTANT SECRETARY OF THE NAVY,  
(FINANCIAL MANAGEMENT)

Encl:

- (1) Department of the Navy Reply to GAO Draft Report of 27 Mar 1972 on Economies Available Through Improved Management of Shipboard Inventories (OSD Case #3433)

GAO note: Tabs A, B, and C referred to in the Navy's reply have been excluded because they are long and because, for the most part, they merely augment the general comments in enclosure 1. In those instances where the tabs contained additional pertinent information, however, they have been considered and, where appropriate, incorporated in our evaluation of agency comments.

DEPARTMENT OF NAVY REPLY

TO

GAO DRAFT REPORT OF 27 MARCH 1972

ON

ECONOMIES AVAILABLE THROUGH IMPROVED MANAGEMENT

OF SHIPBOARD INVENTORIES

(OSD CASE # 3433)

I. Summary of GAO Findings and Recommendations

The Navy in fiscal year 1970 asked Congress for one billion dollars to buy repair parts and supplies needed to fill the immediate operational requirements of its ships. The House Subcommittee on Department of Defense Appropriations expressed concern over this request and sought assurances that the Navy was making maximum use of all available ship repair parts and supplies. Accordingly, this review was made to evaluate the adequacy of the Navy's system for managing shipboard inventories.

GAO estimates that there is \$159 million of excess and idle ship repair parts and supplies currently on board some of the Navy's active and inactive ships. This materiel is not available if needed by other ships. The Navy can improve the supply readiness of its ships and avoid an estimated \$31-49 million in future inventory investment by better management of shipboard inventories. GAO's findings and the improvements needed relate to the three major phases in the life of Navy ships which are: (a) during initial outfitting of ships, (b) while ships are in the operating fleets, and (c) after ships have been deactivated.

GAO recommends that SECNAV take action to ensure that:

1. The Navy's improved supply support concept is applied as soon as possible in the outfitting of all new ships.

2. Initial outfitting inventories are not purchased until firm requirements are established.

Enclosure (1)

3. Outfitting excesses accumulated at private shipyards are promptly returned to the supply system.

4. Supplies taken off ships being modernized are utilized to the maximum extent possible to resupply other ships upon completion of shipyard work.

5. Inventory excesses on active ships are promptly identified and redistributed to fill shortages elsewhere.

6. Ship supply personnel comply with prescribed procedures for recordkeeping and requisitioning.

7. More of the usable inventory on board inactive ships is made available to meet current needs.

## II. Summary of the Department of the Navy Position

The Navy concurs with recommendations 1, 3, 4, and 6 and with the intent, but not the method of implementation, of recommendations 2, 5, and 7. Detailed comments with respect to each recommendation are contained in section III below.

## APPENDIX I

### III. Statement With Respect to Specific Recommendations

#### A. Recommendation #1 - To ensure that:

...The Navy's improved supply support concept is applied as soon as possible in the outfitting of all new ships.

Comment: Concur that the improved supply support concept, represented by the FLSIP (Fleet Logistic Support Improvement Program) COSAL (Coordinated Shipboard Allowance List) effort, should be applied to: (1) All future NC/CONV (New Construction/Conversion) ships and (2) those ships currently under construction where the change is both contractually feasible and time permits the orderly outfitting of the ship to the new allowance requirement. (Note: All new construction contracts placed in effect subsequent to September 1969 currently direct production of FLSIP COSALS). Do not concur that the Navy unduly delayed the application of the new program to new construction ships or that the new program should automatically be applied to all ships delivering after 1 March 1972 (Appendix 1 of the GAO Report). TAB A contains the factors which influenced the Navy's decisions in this area and have not, in our opinion, been given adequate recognition in the Draft Report.

The one exception to full utilization of FLSIP involves the question of backfitting to FLSIP, HME (Hull/Mechanical/Electrical) COSALS on twenty-two ships which have not received final load COSALS and are scheduled to receive conventional HME COSALS. Contract award for these ships was prior to September 1969. The latest estimated delivery is April 1974. Twelve ships listed in Appendix I to the GAO report have now received final COSALS and two of the remaining twenty-four (SSN 685 and LHA-1) are receiving backfitted FLSIP HME COSALS. All thirty-six ships will receive FLSIP Electronic COSALS which constitutes approximately 60% of total COSAL value for repair parts.

It is not apparent from the audit report that GAO representatives were advised of the fact that all electronic COSALS have been FLSIP since May of 1968. This point is significant since it means that two-thirds of FLSIP improvements are being achieved on all of the new construction ships in question. Electronic FLSIP improvements were implemented early in the program because the equipments and associated repair parts were under government control. The opposite is true for the HME segment which covers approximately 90% contractor furnished equipment.



Based on consideration of all factors, the Navy's decision in September 1969 was as follows:

a. All ship's then undergoing construction, conversion and modernization in both Naval and private shipyards would be outfitted with FLSIP COSALS for electronics equipments.

b. Backfitting in the HME equipment area would be on a selective basis only.

c. All future NC contracts would be outfitting with FLSIP COSALS in all equipment areas.

Summary. The Navy decision to backfit FLSIP to an existing program is, therefore, based on the extent of OBRP (Onboard Repair Parts) procurement already initiated by the shipbuilder, the potential for increased cost Change Orders and the degree to which the increase can be offset by subsequent reductions in contractor procurements and, whether time permits the orderly re-outfitting of the ship without delaying delivery. These considerations dictate the adoption of a selective backfitting procedure. The current policy is considered to be correct and backfitting has been undertaken, where feasible. The potential cost savings cited in the GAO Report is but one element in this evaluation process and may be considerably overstated if not limited to the HME segment only.

B. Recommendation #2 - To ensure that:

...Initial outfitting inventories are not purchased until firm requirements are known.

Comment: Concur with the objective but not with the proposed method of implementation.

The report does not take into account the differences in the types of ships construction programs, (e.g., the building of a single ship, a few ships by several different shipyards, or the "total package" procurement of a whole class of ships under contracts containing standardization clauses). In the latter situation, the application of the GAO recommendation of "waiting until final repair part requirements are established before ordering parts" is simplified for follow-on ships by virtue of the identification and procurement effort applied to preceding ships in the class.

The recommendation that OBRPs not be procured until firm requirements are known, and then on the basis of a single

## APPENDIX I

computation at some point in the construction cycle, reflects several serious erroneous assumptions. First, the recommendation assumes that repair parts/spares are not required in the ships construction program prior to the loading process which occur late in the building cycle (usually end-of-construction minus 4 months). Secondly, it assumes that complete equipment configuration data and technical documentation is available sufficiently early in the construction cycle to (1) permit the Navy to process the hundreds of provisioning projects, (2) catalog thousands of individual repair parts, (3) load all required data into computer records and (4) produce a COSAL a "procurement lead time" away from the loading date. These assumptions are not valid.

Regarding each of the above misassumptions, the report fails to recognize that (1) repair parts are utilized throughout the construction cycle incident to installation and test/check-out of equipments which is most extensive during the fourteen (14) months prior to delivery and (2) it is impossible for the repair parts for all ships being newly constructed to be totally identified by an estimated EOC (End of Construction) minus 10 or 11 months. (Note: This time frame comprises the EOC-4 loading date, 4 to 5 months procurement lead time, plus 2 months COSAL (requirements document) preparation time).

If OBRPs were not readily available at the construction site until late in the construction cycle, the shipbuilder would be faced with two options - either to buy test and checkout spares separately to avoid critical engineering delays or to tap the Navy Supply System on an emergency basis for possible relief. If the first option is selected, the cost would be reflected in the shipbuilder's initial bid price, and it is doubtful that any savings would be realized. If the second option is selected and the Supply System is unable to provide the part immediately, the Navy would be subject to possible delay claims resulting from the shipbuilder's inability to meet erection schedules. Since the total value of OBRPs represent only 3.5% of the total cost of the average ship, even relatively minor delay claims would more than offset any potential savings.

Since delays can be extremely costly, the shipbuilder requires some assurance that construction will not be held up for lack of parts to insure equipment operability. Accordingly, and because it is administratively more convenient,

the Navy has authorized the shipbuilder to procure repair parts in conjunction with equipment acquisition, and store the parts pending need and/or commencement of binning mock-up. The Navy has long recognized this method of repair part acquisition to be a major factor in creating excesses, but only recently, has achieved the capability to effect a satisfactory (for both Navy and shipbuilder) remedy. The Navy is in the process of installing extremely high speed, random access computer hardware that will significantly increase the ICP capacity for COSAL computation/production. Coincident with the hardware capability, scheduled for October 1972, software programs are under development with a concurrent target completion date. These computer programs will enable the incremental computation of cumulative requirements at various points throughout the construction cycle. It is planned to furnish these incremental requirements lists to the shipbuilder based on a mutually accepted schedule for procurement of parts. Each successive list will represent only net increases, thus obviating redundancy and including only that which will be reflected in the final COSAL. In this manner, it is felt that the builders requirements for test/checkout spares will be satisfied; procurement lead time for the vast bulk of items will be satisfactory and the binning operation will be enhanced by precluding the pre-binning of parts that would otherwise have been excess. Most importantly, the problem of procuring excesses will be significantly reduced.

The above concept is scheduled for incorporation in major (DD-963, CVAN, DLGN and SSN ship types) new construction programs now under way, and it is planned for incorporation in all new ships construction contracts. Limited backfitting may also be possible in contracts where procurement of repair parts has not commenced.

Summary. The Navy concurs that excesses in new construction programs should be eliminated wherever possible. However, a Naval ship is the only weapon acquired by the Defense Department where the "prototype" is the production model. For this reason, the Navy has not been able to completely defer the procurement of all logistic support until the total requirement is known. The availability of new

## APPENDIX I

random access computer equipments appears to finally offer a workable solution whereby excesses can be avoided and repair parts still bought incrementally during the construction cycle. This approach is believed to be responsive to the objective of recommendation #2.

### C. Recommendation #3 - To ensure that:

...Outfitting excesses accumulated at private shipyards are promptly returned to the supply system.

Comment: Concur with the recommendation. Accumulation of excesses has occurred as a result of dispute as to ownership, lack of visibility to the Naval Supervisors of Shipbuilding and the Project Manager and a desire to utilize early ship excesses on later ships of a class to be built in the same yard. To correct this, NAVSUP and NAVSHIPS have already agreed to utilize ISSOP (Inactive Ship Supply Overhaul Program) procedures to bring outside contractor expertise to bear. NAVSUP has been authorized to proceed on one multi-ship contract (LST 1179-1198 Program). Approximately 2000 line items are being screened for possible return to the supply system. In addition, action has been initiated through six (6) Naval Supervisors of Shipbuilding to determine availability of other government owned assets in private shipyards for screening and return to stock.

While implementation of incremental requirements computation will largely eliminate accumulation of excesses, particular attention will be paid to identify both the loading requirement (COSAL) and Navy ownership of all repair parts in future detailed shipbuilding specifications.

### D. Recommendation #4 - To ensure that:

...Supplies taken off ships being modernized are utilized to the maximum extent possible to resupply other ships upon completion of shipyard work.

Comment: Concur with the recommendation. While the redistribution of Storeroom Items (SRI) and Operating Space Items (ORI) can be utilized in many instances to meet other requirements, the desirability of such action must be weighed

against the overall cost. Since the decision as to whether a used item is really satisfactory or not is judgemental in nature, implementation of this recommendation may be most difficult. There is little to be gained in the long run if a ship is re-loaded with used materiel with questionable functional/lasting capability. The dichotomy is that we are asked to consider for operational use materiel which we would reject outright if received on a procurement contract. TAB B contains additional information concerning excesses generated at time of overhaul and Navy actions to minimize future generation and maximize utilization thereof. [See GAO note.]

E. Recommendation #5 - To ensure that:

...Inventory excesses on active ships are promptly identified and redistributed to fill shortages elsewhere.

Comment: Concur with the intent of the recommendation. However, the cost to implement and maintain the type of shipboard program required to satisfy this recommendation makes adoption impractical. It is believed that TAB B clarifies the causes of excesses, when they occur and are identified, and describes various Navy programs designed and used to maximize shipboard asset utilization.

Summary. The Navy recognizes that excesses do exist aboard ship and many programs have been established to better utilize shipboard assets. However, the GAO recommendation cannot be practically implemented aboard ship with the tools, personnel and facilities available. Further the cost of maintaining a perpetual inventory system aboard 700 retail outlets operating worldwide would be so prohibitive as to negate any potential savings.

F. Recommendation #6 - To ensure that:

...Ship supply personnel comply with prescribed procedures for recordkeeping and requisitioning.

Comment: Concur. It is toward this goal that the Navy Supply Corps School training/curriculum is oriented. In addition many officers on FLEET, Type Command, Squadron and Flotilla staffs devote their efforts to this end. Supply inspections and supply assistance visits have long emphasized the importance of complying with prescribed procedures.

GAO note: Also Tab C contains additional information concerning costs which the navy claims will offset the savings obtainable from implementation of this recommendation.

APPENDIX I

Exception must be taken with the GAO Draft Report comments concerning stock record accuracy. The results of the GAO sample are not indicative of Navy-wide performance.

In the Atlantic Fleet for example, at conclusion of SOAP, a quality assurance check on stock record validity indicates a 99% accuracy rate. Between overhauls this 99% accuracy rate diminishes, and an analysis of 181 annual supply inspection (ASI) reports of destroyer and amphibious ships revealed an average of 90% accuracy. The latest ASIs for the three ships sampled by GAO disclosed the following stock record validity rates:

<u>Report ASI Date</u>	<u>Ship</u>	<u>Stock Record Validity Rate</u>
25 Mar 1971	USS JOSEPHUS DANIELS (DLG 27)	91%
13 Jan 1972	USS LA SALLE (LPD 3)	99%
14 Mar 1972	USS BLANDY (DD 943)	91%

Additional information pertaining to Pacific Fleet, FY 71 ASI records of shipboard inventory management indicate a much higher degree of accuracy than that portrayed in the GAO Draft Report and is included in TAB C.

Summary. The general statements made on pages 28 and 29 of the GAO Draft Report regarding poor shipboard supply performance attributed to young and inexperienced supply officers, lack of qualified and conscientious supply personnel, and lack of management emphasis on importance of supply functions are only partially true. It is acknowledged that many supply officers afloat are young and inexperienced; however, all have received intensive training at the Navy Supply Corps School.

Only those students who have excelled academically, and display the motivation and attitude characteristics well above the average, are recommended for independent, or fleet-up duty assignments. Generally only the best qualified are ordered to the independent/fleet-up billets. For an Ensign this will be his first operational tour; for

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a line transferee, the first operational billet as a Supply Officer. These officers are in fact qualified and do perform extremely well, given the complexities and rigors of the independent/fleet-up afloat community.

With regard to enlisted men, the current overall Atlantic Fleet supply rate manning is 96%; however, manning is only 83% for E-5 through E-9 level. The current shortage of more senior petty officers does adversely impact upon performance. In addition; a 1971 Navy study on the Storekeeper Rating (SK) did reveal a training problem. Since then, training corrections have been made to help alleviate the problem but it is too early to evaluate effectiveness. Basically those changes involve the Class "A" School and are in accordance with the recommendation in the study. It is noted that the FY 73 Training Plan provides for Class "A" Schooling for 61% of the SK input.

Summary. Navy has (1) not observed any general lack of conscientious performance by supply personnel and (2) does not concur with the auditors' judgment that there is a lack of management emphasis on the importance of supply functions in the successful operation of a ship. At all levels of command the importance of supply is recognized and emphasized.

The general consensus among personnel of the Naval Establishment is one of high regard for the dedication and exceptional degree of professionalism found in the ranks of commissioned and non-commissioned supply personnel. Accordingly, it is considered that the combination of training and experience, dedication and leadership displayed by the many such personnel contacted, tends to refute the deprecatory findings quoted in the auditors report.

G. Recommendation #7 - To ensure that:

...More of the usable inventory onboard inactive ships is made available to meet current needs.

GAO views repair parts on ships of the inactive fleet as idle inventory. This is an over simplified view. The initial allowance of shipboard repair parts, retained by the ship from cradle to grave, is treated as part of the total initial investment in the ship. This initial inventory is as much a part of the total integrated weapon system as

APPENDIX I

are its guns, radars, and power plants. Although a ship might be steamed with empty repair part storerooms, its ability to be an effective fighting unit would be as degraded as it would without the guns or radars. GAO states that as much as a fifth of the repair part inventories of the Navy's inactive ships could be removed and diverted to active fleet requirements "without seriously impairing the mobilization readiness of inactive ships." This is a subjective judgement which cannot be substantiated by those responsible for the mobilization of these ships.

The statement on page 33 of the GAO Draft Report concerning the reactivation of 27 ships in the past 10 years is in error. Navy records indicate that 42 ships were reactivated as follows:

4	in	FY	65
26	in	FY	66
3	in	FY	67
9	in	FY	68
<hr/>			
TOTAL	42	in	4 Years

In addition, the duration of the reactivation period for these ships ranged from 4 to 10.5 months versus the 8 to 25 months stated in the report. Furthermore, these were reactivations plus extensive modernizations. Reactivation time used is a variable of ship size, material condition of ship, other workload of the reactivating yard, and most importantly the degree of urgency of returning the ship to the operating fleet. Defense mobilization requirements are much shorter than the time frames cited by GAO, and in an extreme emergency inactive ships could be made ready for duty in a much shorter time than cited. Should such an emergency arise, empty or near empty repair part storerooms would seriously impair our inactive fleet mobilization readiness. GAO further states that only 10 to 15 percent of repair parts retained on three inactive amphibious ships could be used to fill allowance requirements following reactivation. This GAO finding does not reveal the full picture. It is believed that these figures applied to ships which had not received an Inactive Ship Supply Overhaul in which repair parts excess to updated allowance lists are returned to the supply system. Current experience at the Philadelphia Naval Shipyard with the reactivation of a destroyer minelayer to its original primary mission role indicates that 70 to 80 percent of repair parts on board will

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remain with the ship. It should be noted that this high percentage is attributable to the fact that minimum equipment/configuration changes were made in this specific ship being readied for transfer to another country. As the Inactive Ship Supply Overhaul Program expands the number of inactive ships overhauled, it is estimated that higher than 50 percent of the repair parts will be retained vice the 10 to 15 percent reported by GAO.

It is recommended that GAO delete the sentence on page 33: "An official of the Office of the Chief of Naval Operations, responsible for monitoring and coordinating Navy policy on the use of inactive ship inventories, concurred with our opinion." Officials responsible for policy have not addressed this subject with GAO prior to this time.

The GAO estimate that as much as \$20 million of inactive ship inventories can be used to satisfy active fleet requirements is subjective. There is commonality of some electronics, equipment and operating space items between inactive and active ships. There is much less commonality in the hull, mechanical and electrical (HME) inventories. HME equipment applications tend to be one of a kind. 25 percent of all HME equipments have only one ship application; 57 percent have 4 or less applications. Furthermore, the book value of the repair part is not the actual value to the Navy if it has to be removed from an inactive ship and redirected to an active fleet requirement. Fairly substantial location, identification, removal, packaging and preservation costs are involved. Based on the above, the validity of the \$20 million figure is seriously questioned.

Notwithstanding the above comments, the Navy has recognized that inactive ship inventories do offer a source of assets for possible active fleet requirements and is taking steps to make cost-practical and acceptable trade-offs between current resources management and mobilization needs and readiness posture. A test is being conducted by the Naval Material Command in which 111 items of controlled equipment, pilferable items, and operating space items held at the Norfolk Inactive Ships Maintenance Facility are being screened by the inventory manager to determine if a critical

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need exists. If this test is promising it will be expanded. Binoculars and navigational equipment which was in critical supply during the past year has been made available to satisfy active fleet needs. The policy changes cited by GAO at the bottom of page 34 of the draft report have been approved for implementation. This change accepts the price of limited degradation to inactive fleet mobilization readiness for the immediate gain of critically needed repair parts which are not available in the supply system. It is estimated that the new policy will result in a 5 to 10 percent drawdown of current inactive ship inventory levels.

Summary: Navy agrees that more use can be made of inactive fleet inventories and is taking positive steps in that direction. Navy does not agree with all of the GAO findings and therefore does not agree that all inactive fleet inventories can be diverted to active fleet needs, regardless of criticality, without seriously degrading the inactive fleet's mobilization readiness to an unacceptable degree.

IV. TAB C contains additional information pertinent to specific topics in the study and recommended changes to several portions of the GAO Draft Report.

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SHIPS SCHEDULED FOR DELIVERY AFTER SEPTEMBER 1, 1973  
ON WHICH OUTFITTING INVENTORIES COULD BE REDUCED

Ship type ( <u>hull number</u> )	Date contract <u>awarded</u>	Estimated delivery <u>date</u>
Nuclear submarine (SSN-682)	6-68	9-73
Nuclear attack aircraft carrier (CVAN-68)	5-68	9-73
Destroyer escort (DE-1094)	8-66	9-73
Nuclear guided-missile frigate (DLGN-36)	6-68	10-73
Destroyer escort (DE-1095)	8-66	11-73
Nuclear submarine (SSN-686)	7-69	12-73
Destroyer escort (DE-1096)	8-66	2-74
Nuclear submarine (SSN-683)	6-68	3-74
Destroyer escort (DE-1097)	8-66	4-74
Nuclear submarine (SSN-687)	7-69	4-74
Nuclear guided-missile frigate (DLGN-37)	6-68	5-74

APPENDIX III

PRINCIPAL OFFICIALS OF  
THE DEPARTMENTS OF DEFENSE AND THE NAVY  
RESPONSIBLE FOR ADMINISTRATION OF ACTIVITIES  
DISCUSSED IN THIS REPORT

<u>Tenure of office</u>	
<u>From</u>	<u>To</u>

DEPARTMENT OF DEFENSE

SECRETARY OF DEFENSE:

Elliot L. Richardson	Jan. 1973	Present
Melvin R. Laird	Jan. 1969	Jan. 1973
Clark M. Clifford	Mar. 1968	Jan. 1969

DEPUTY SECRETARY OF DEFENSE:

William P. Clements	Jan. 1973	Present
Kenneth Rush	Feb. 1972	Jan. 1973
Vacant	Jan. 1972	Feb. 1972
David Packard	Jan. 1969	Dec. 1971
Paul H. Nitze	July 1967	Jan. 1969

ASSISTANT SECRETARY OF DEFENSE  
(INSTALLATIONS AND LOGISTICS):

Hugh McCullough (acting)	Feb. 1973	Present
Barry J. Shillito	Jan. 1969	Feb. 1973
Thomas D. Morris	Sept. 1967	Jan. 1969

DEPARTMENT OF THE NAVY

SECRETARY OF THE NAVY:

John W. Warner	Apr. 1972	Present
John H. Chafee	Jan. 1969	Apr. 1972
Paul R. Ignatius	Sept. 1967	Jan. 1969

UNDER SECRETARY OF THE NAVY:

Frank Sanders	Apr. 1972	Present
John W. Warner	Feb. 1969	Apr. 1972
Charles F. Baird	Aug. 1967	Jan. 1969

Tenure of office	
<u>From</u>	<u>To</u>

DEPARTMENT OF THE NAVY (continued)

ASSISTANT SECRETARY OF THE NAVY  
(INSTALLATIONS AND LOGISTICS):

Charles L. Ill	July 1971	Present
Frank Sanders	Feb. 1969	Jan. 1971
Barry J. Shillito	Apr. 1968	Jan. 1969

## CHIEF OF NAVAL OPERATIONS:

Adm. Elmo R. Zumwalt, Jr.	July 1970	Present
Adm. Thomas H. Moorer	Aug. 1967	June 1970

## COMMANDER, NAVAL SHIPS SYSTEMS

## COMMAND:

Rear Adm. Robert C. Gooding	Aug. 1972	Present
Rear Adm. Nathan Sonenshein	Aug. 1969	July 1972
Rear Adm. E. J. Fahy	Feb. 1966	July 1969

## COMMANDER, NAVAL SUPPLY SYSTEMS

## COMMAND:

Rear Adm. W. R. Dowd, Jr.	Jan. 1973	Present
Rear Adm. K. R. Wheeler	July 1970	Jan. 1973
Rear Adm. Bernhard H. Bieri, Jr.	Aug. 1967	June 1970

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