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Report to Congressional Requesters

MILITARY AFLOAT PREPOSITIONING

Wartime Use and Issues for the Future

GAO

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The Honorable Sam Nunn
Chairman, Committee on
Armed Services
United States Senate

The Honorable Charles E. Bennett
Chairman, Subcommittee on Seapower
and Strategic and Critical Materials
Committee on Armed Services
House of Representatives

This report provides information and issues related to your requests for a review of the Department of Defense's Mobility Requirements Study. This report addresses one part of mobility capability—the prepositioning of military equipment and supplies on ships near areas of potential conflict. Specifically, we discuss the use of afloat prepositioning during the Persian Gulf War and the Department's initiatives and plans to improve and expand afloat prepositioning.

As you requested, we plan no further distribution of this report until 3 days after its issue date. At that time, we will send copies to the Chairmen and Ranking Minority Members of the House Committee on Armed Services and the Senate and House Committees on Appropriations; the Secretaries of Defense, the Army, the Navy, and the Air Force; the Chairman, Joint Chiefs of Staff; the Commander, Military Sealift Command; and other interested parties. We will also make copies available to others on request.

Please contact me at (202) 275-6504 if you or your staffs have any questions concerning this report. Other major contributors are listed in appendix II.

for Richard Davis
Director, Navy Issues

Executive Summary

Purpose

Responding to changes in the military threat, the Department of Defense (DOD) is conducting a study for Congress of its future mobility requirements, including the use of prepositioning on ships. In connection with this study, DOD issued a report in January 1992 that included a plan for prepositioning Army combat equipment on ships for the first time at an estimated cost of about $3.5 billion through 1997. Congress has already appropriated $2.1 billion for increased sealift, and DOD has started designing additional ships.

The Chairmen, Senate Committee on Armed Services, and the Subcommittee on Seapower and Strategic and Critical Materials, House Committee on Armed Services, requested that GAO review DOD's Mobility Requirements Study. In partial response to these requests, this report discusses (1) how afloat prepositioning was used during the Persian Gulf War, (2) DOD's post-war initiatives to improve afloat prepositioning, and (3) issues related to DOD's expansion of afloat prepositioning, as planned for in its Mobility Requirements Study.

Background

A key part of U.S. mobility strategy, known as afloat prepositioning, is keeping ships continuously loaded with combat equipment and support items. These ships are located near potential trouble spots and are intended to respond more quickly than if they were deployed from the United States. All of DOD's afloat prepositioning ships were used during the recent Persian Gulf War.

Since the early 1980s, the military services and the Defense Logistics Agency have prepositioned equipment and supplies on ships, mostly at Diego Garcia in the Indian Ocean. DOD currently uses 25 ships for afloat prepositioning. The Marine Corps is the largest user, with 13 ships, and is the only component that prepositions combat weapon systems. The Army, Air Force, Navy, and Defense Logistics Agency use the 12 remaining ships to preposition ammunition, fuel, medical supplies, and other support items. The ships are commercially chartered by the Navy's Military Sealift Command and are kept fully loaded and have civilian crews.

The January 1992 Mobility Requirements Study report includes a plan for deployment by fiscal year 1997 of an additional 2 million square feet of Army combat equipment, combat support equipment, and supplies. The equipment and supplies would be prepositioned on nine large ships, which would be configured to allow vehicles to drive on and off. In addition, two large container ships would be chartered for prepositioning.

Results in Brief

During the Persian Gulf War, afloat prepositioning enabled DOD to begin delivering equipment and supplies to Saudi Arabia almost 2 weeks before they could have been sealifted from the continental United States. The afloat prepositioning ships began to arrive at Saudi ports 8 days after commencement of the operation, compared to 20 days for the fastest sealift ships from the United States.

The Marine Corps identified several problems with afloat prepositioning during the deployment. For example, some items prepositioned were not the ones most needed and automated asset tracking systems were inadequate. The Marine Corps is now responding to these problems with various initiatives, some of which are already complete. If fully implemented, these initiatives should help alleviate the problems experienced during the Persian Gulf War.

GAO found that DOD needs to more fully address several issues that could affect the costs and operational effectiveness of the planned expansion of Army prepositioning. These include the following:

- additional land prepositioning that DOD is seeking in southwest Asia could reduce the requirement for afloat prepositioning,
- the location of additional prepositioning sites for the planned ships,
- government ownership versus chartering of the ships, and
- the Army's ability to provide and maintain additional prepositioned equipment.

Principal Findings

Afloat Prepositioning Deployment Problems Are Being Addressed

The Persian Gulf War resulted in the first major challenge for DOD's afloat prepositioning because all of the ships were used during the deployment. The maritime prepositioning ships provided combat equipment and supplies for the 7th and 1st Marine Expeditionary Brigades deployment to southeast Asia within 30 days after the commencement of Desert Shield. The only other major combat unit to achieve full strength by that time was the Army's 82nd Airborne Division, which arrived by airlift from the United States.

However, the Marine Corps experienced several problems with the deployment of its maritime prepositioning ships. They include the items prepositioned were not necessarily the ones most needed, the ships were

not efficiently unloaded, and the tracking of assets was inadequate. The Marine Corps has initiatives underway to address these problems. Specifically, the Marine Corps has revised the inventory of items to be prepositioned, is revising doctrine and training for unloading, and is fielding two new automated tracking systems.

Four Issues on Expansion of Afloat Prepositioning Remain Unresolved

DOD has not resolved four issues related to its plan for expanding afloat prepositioning. First, the Mobility Requirements Study report did not assume additional Army land prepositioning in southwest Asia that could reduce the requirement for afloat prepositioning. DOD has security cooperation agreements with several friendly countries in southwest Asia and is continuing to explore similar arrangements with others. If land prepositioning could be substituted for some of the planned afloat prepositioning, money could be saved because DOD has estimated that the life-cycle costs are about one-fourth as much.

Second, the Mobility Requirements Study did not identify specific locations for the proposed additional prepositioning ships. Most of the ships have been located at Diego Garcia in the Indian Ocean, but additional space to anchor ships there is limited. If additional prepositioning locations are not identified, the responsiveness of the ships could be impaired since they are intended for use in contingencies worldwide.

Third, the study suggested the government buy most of the proposed prepositioning ships, rather than chartering them, without considering the advantages and disadvantages. An advantage of ownership is that it could provide greater stability because the Military Sealift Command has to periodically recharter afloat prepositioning ships. However, ownership provides less flexibility than charters to increase or decrease the number of prepositioning ships in response to changes in the military threat.

Fourth, although the Army expects to increase its use of afloat prepositioning, it is still planning for the resources needed. The Army has not yet determined where it will obtain the additional equipment for afloat prepositioning. Also, the Army would need a comprehensive maintenance program for the prepositioned combat equipment, similar to that of the Marine Corps.

Recommendation

GAO recommends that the Secretary of Defense resolve these issues as DOD continues to plan the expansion of afloat prepositioning. This recommendation appears in full in chapter 4.

Agency Comments

DOD generally agreed with GAO's findings concerning afloat prepositioning effectiveness in delivering Marine Corps equipment and supplies during the Persian Gulf War. Also, DOD concurred with GAO's findings on the changes in Marine Corps afloat prepositioning resulting from the war. However, DOD believed its Mobility Requirements Study fully addressed all the issues presented in GAO's recommendation. In particular, DOD did not agree that land prepositioning was an effective alternative to afloat prepositioning, citing afloat prepositioning's greater flexibility and responsiveness. DOD's detailed comments are included as appendix I.

GAO continues to believe that the Mobility Requirements Study report of January 1992 did not fully address the issues raised in chapter 4. GAO believes that the additional land prepositioning DOD is seeking in southwest Asia could offset some of the afloat prepositioning planned for in the Mobility Requirements Study. GAO incorporated many of DOD's comments in the appropriate sections of chapter 4.

Contents

Figures

Abbreviations

DOD	Department of Defense
GAO	General Accounting Office
MSC	Military Sealift Command

Chapter 1

Introduction

During the Carter administration, the Department of Defense (DOD) developed a strategy known as afloat prepositioning to support a southwest Asia deployment option. Afloat prepositioning involves storing military equipment and supplies on ships near areas of potential conflict so that they can deploy quickly. It is one aspect of U.S. mobility forces, which include airlift, sealift, and prepositioning. The Marine Corps is now by far the largest user of afloat prepositioning.

Afloat prepositioning ships are able to deploy quickly because they are kept fully loaded and have complete civilian crews while at their prepositioning sites. In contrast, the fast sealift ships are kept unloaded at U.S. ports and do not have complete crews until deployed. All of the prepositioning ships were deployed for the Persian Gulf War.

The Navy's Military Sealift Command (MSC) charters commercial ships for prepositioning, using the Defense Business Operations Fund. The DOD components using the ships reimburse the fund for normal operation of the ships, including paying crews, fuel costs, and port costs. In fiscal year 1991, it cost about $514 million to operate the ships. The users of the ships also provide the equipment and supplies for the ships and maintain the cargo while it is loaded on the ships.

Afloat prepositioning is made up of two parts. The first includes 13 ships in 3 squadrons used by the Marine Corps to deploy its expeditionary forces. The ships provide sets of unit equipment and sustainment supplies for deployed combat units. Unit equipment includes combat weapon systems, such as tanks and howitzers. Prepositioning ships allow deployment of a marine expeditionary brigade with only about 250 airlift sorties, compared to about 3,000 if the brigade and all its equipment had to be airlifted. The ships, which entered service between October 1984 and May 1986, were specially built or converted for prepositioning and are under 25-year charters from three private operators. Table 1.1 shows the major combat equipment and types of supplies in each maritime prepositioning squadron.

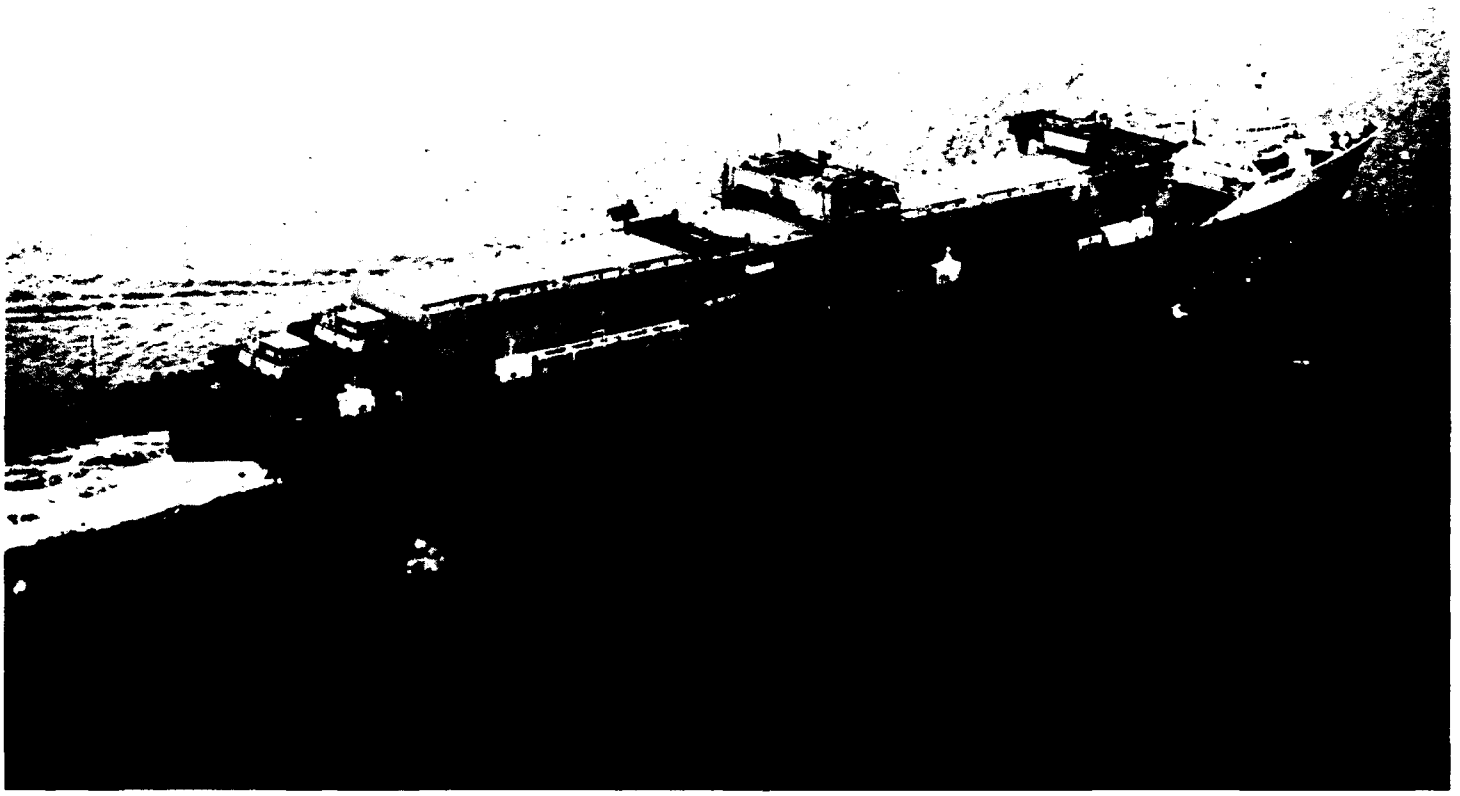
Table 1.1: Equipment and Supplies for Each Maritime Prepositioning Squadron

Combat equipment	Tanks
	Amphibious assault vehicles
	Howitzers
	Light armored vehicles
	Tracked recovery vehicles
	Missile launchers
Combat support equipment	Motor transport (various types of trucks)
	Engineer and material-handling equipment (such as forklifts, tractors, cranes, and water purification units)
	Fuel storage and distribution systems
	Medical facility (280 beds)
30 days of sustainment supplies	Subsistence (food and water)
	Petroleum, oil, and lubricants
	Construction materials (fortifications and barriers)
	Ammunition (aviation and ground)
	Medical supplies
	Repair parts for embarked equipment

The second part of afloat prepositioning is made up of 12 ships used by the Army, Air Force, Navy, and Defense Logistics Agency. These ships provide sustainment and support items. Unlike the ships used by the Marine Corps, they do not provide combat weapon systems. These ships are chartered periodically from commercial operators for 17 months, with two additional 17-month renewal options. Ships of both parts of the afloat prepositioning force are shown in figures 1.1 and 1.2.

Figure 1.1: Maritime Prepositioning Ship Cpl. Louis J. Hauge, Jr. (Marine Corps)

Figure 1.2: Afloat Prepositioning Ship Austral Rainbow (Army)



Marine Corps Maritime Prepositioning

The three maritime prepositioning squadrons are located at three sites around the world. Each squadron's ships provide enough ground combat equipment, combat support equipment, and supplies to sustain a marine expeditionary brigade of about 16,500 personnel for 30 days. The ships are configured to provide capability for driving vehicles on and off, storage for containerized and loose cargo, and tanks for fuel and water. Marine expeditionary brigades include command, ground combat, aviation combat, and combat service support elements. The brigade's personnel and selected equipment, such as helicopters, are airlifted to assemble with the equipment and supplies on the prepositioning ships unloading at the deployment location.

Each of the prepositioning squadrons contains essentially the same types and amounts of items. The first squadron of four ships is normally kept anchored off the U.S. east coast in the Atlantic Ocean. The second squadron of five smaller ships is located at Diego Garcia in the Indian Ocean, which is near southwest Asia. The third squadron of four ships is located at Guam and Tinian in the western Pacific Ocean. The locations of each of the squadrons are shown in figure 1.3.

Figure 1.3: Locations of Three Maritime Prepositioning Squadrons

1. 1st Maritime Prepositioning Squadron, anchored off U.S. east coast.
2. 2nd Maritime Prepositioning Squadron, located at Diego Garcia.
3. 3rd Maritime Prepositioning Squadron, located at Guam and Tinian.

The Marine Corps has a 30-month maintenance cycle for the equipment of its maritime prepositioning force. Except when participating in exercises, each ship is at its prepositioning site for most of this period, then it goes to

Blount Island, near Jacksonville, Florida, to unload all its equipment and supplies. After unloading, personnel perform required equipment maintenance, repair, and replacements. Also, inspection and maintenance on the ship is done at a shipyard in the United States while it is unloaded. The ship is then reloaded and returned to its prepositioning site. The entire maintenance process takes about 60 days.

Afloat Prepositioning by Other DOD Components

Before the Persian Gulf War, the Army had four ships in its afloat prepositioning program. The Army ships have all been based in Diego Garcia. Three ships carried cargo in barges that can be separated from the ship and towed to port and then unloaded. The fourth ship partially submerges to allow port handling equipment, such as barges and tugboats, to float on and off. The ships contain mostly ammunition, which the Army prepositions because it is heavy and dangerous to handle, but they also contain fuel, spare parts, rations, medicine, and other items.

The Air Force had three ships prior to the war: two in Diego Garcia and the other in the Mediterranean Sea. The Air Force's ships carried various items, such as ammunition, vehicles, spare parts, and rations. The Air Force also used its ships to provide some of its requirement for logistical support for establishing operational air bases, such as hangars, billets, kitchens, and latrines.

The Navy had one of its six fleet hospitals prepositioned on a ship at Diego Garcia. The ship contained a portable hospital unit that is unloaded and then assembled on shore. It is a 500-bed field hospital configured to provide a full range of medical care and has a staff of approximately 940 personnel, who are flown in to operate the hospital.

The Defense Fuel Supply Center, a part of the Defense Logistics Agency, prepositioned fuel in four tanker ships based in Diego Garcia. The fuel is provided by the Center for DOD users. The ships carried mostly jet propulsion fuel, which can be used for other purposes.

Mobility Study Plans Increased Army Afloat Prepositioning

A recent DOD study calls for a significant expansion of afloat prepositioning for the Army. This expansion would enable the Army to respond more quickly with combat forces. The Army would use the additional ships to preposition combat equipment, as does the Marine Corps.

Congress has appropriated $2.1 billion for increased sealift through fiscal year 1992. To help ensure these funds are wisely spent, Congress in 1990 tasked the Secretary of Defense, with the advice and assistance of the Chairman, Joint Chiefs of Staff, to determine mobility requirements for the armed forces and to develop an integrated plan to meet these requirements. As part of the study, DOD reviewed all its requirements for sealift through the year 1999. Volume I of the Mobility Requirements Study, issued in January 1992, covers mobility between theaters. Afloat prepositioning was chosen as a less costly alternative to airlift to resolve shortfalls in mobility capability in the early phase of a conflict.

The study included a plan to obtain additional afloat prepositioning of approximately 2 million square feet for Army combat and combat support equipment by fiscal year 1997. This equipment would require nine large, medium speed, "roll-on/roll-off" ships. (Roll-on/roll-off ships provide the ability to drive military vehicles directly on and off the ships.) These ships would be newly constructed or converted for prepositioning this equipment. The plan also calls for two large container ships to be chartered for prepositioning, beginning in fiscal year 1994. In the interim, chartered prepositioning ships will be used to supplement the constructed or converted ships.

Objectives, Scope, and Methodology

The Chairman, Senate Committee on Armed Services, and the Chairman, Subcommittee on Seapower and Strategic and Critical Materials, House Committee on Armed Services, asked us to review DOD's Mobility Requirements Study.[1] (We will report separately on the sealift and airlift aspects of the mobility study.) This report addresses afloat prepositioning forces. Our objectives were to (1) determine how afloat prepositioning was used during the Persian Gulf War, (2) evaluate initiatives to improve afloat prepositioning, and (3) identify issues related to DOD's plan for the expansion of afloat prepositioning.

To determine the use of afloat prepositioning during the Persian Gulf War, we visited the Office of the Secretary of Defense and the Joint Chiefs of Staff; the headquarters of each military service; the Navy Military Sealift Command; the U.S. Central Command, Tampa, Florida; and the Marine Corps Logistics Base, Albany, Georgia.

[1] In partial response to this request, we issued Shipbuilding: Navy's Plan to Acquire Additional Strategic Sealift (GAO/NSIAD-92-224, July 30, 1992) on the Navy's plans to acquire the additional sealift ships planned for in the Mobility Requirements Study.

To determine the status of improvement initiatives, we interviewed officials and obtained documents from Marine Corps headquarters and the other DOD users of afloat prepositioning ships. We focused primarily on the Marine Corps because it is the largest user of afloat prepositioning. Also, since the Marine Corps is the only user that prepositions combat weapon systems, its experience is most relevant to the planned expansion.

To identify issues related to DOD's planned expansion, we interviewed individuals and reviewed studies and reports issued by DOD and other organizations. In particular, we reviewed DOD's Mobility Requirements Study and interviewed DOD officials on the results of this study. However, our review was limited because DOD had not issued the detailed analysis to support its January 1992 volume at the time of our review.

We performed our work between June 1991 and May 1992 in accordance with generally accepted government auditing standards.

Use of Afloat Prepositioning During the Persian Gulf War

Iraq invaded Kuwait on August 2, 1990, and threatened neighboring Saudi Arabia. On August 7, the United States began Operation Desert Shield by deploying forces to the Persian Gulf theater. At the beginning of the Persian Gulf War deployment, prepositioned ships' equipment and supplies were provided to the theater more quickly than they could have been sealifted from the United States.

Use of Afloat Prepositioning

All of the prepositioning ships were deployed at the beginning of Desert Shield in August 1990, except for one maritime prepositioning squadron on the U.S. east coast that was not deployed until November 1990. By the end of the deployment, all of the ships had provided their equipment and supplies to the Persian Gulf area and then were used for additional tasks.

The Marine Corps maritime prepositioning ships began arriving in Saudi Arabia 8 days after the beginning of Desert Shield and the other prepositioned ships began arriving the next day. In comparison, it took 20 days for the first of the fast sealift ships to arrive from the continental United States. Other sealift assets, including ships of the Ready Reserve Force and chartered ships, began arriving about 30 days after the operation began.

Most of the equipment from the ships was ready to perform its mission, according to the U.S. Central Command. Other items, such as rations, vehicles, and ammunition, were available when needed and enhanced the combat readiness of the Marine Corps, according to the Command. However, the war did not fully test DOD's deployment capability because of the extended time period available to deploy and the excellent port facilities in Saudi Arabia.

Deployment of Maritime Prepositioning Squadrons

At the start of Desert Shield, DOD activated the 7th Marine Expeditionary Brigade in California (to assemble with prepositioning squadron 2 from Diego Garcia) and the 1st Marine Expeditionary Brigade in Hawaii (to assemble with squadron 3 from Guam). The 1st Marine Expeditionary Brigade had all its equipment and supplies unloaded in Al Jubail, along the eastern coast of Saudi Arabia, by September 6, 1990, while the 7th Marine Expeditionary Brigade completed its unloading there 2 days later. The only other major combat unit to achieve full strength at about the same time was the Army's 82nd Airborne Division, which arrived by airlift from the continental United States.

As shown in table 2.1, the deployment of all of the equipment and supplies for the first two Marine Corps brigades was delayed over 3 weeks because three of the ships were not at their prepositioning sites on August 7, 1990. For squadron 2, one ship was in its maintenance cycle and another was traveling around Africa towards Blount Island to start its maintenance cycle. In addition, one ship in squadron 3 was returning from an exercise on the Pacific coast of the United States.

By November 1990, the first phase of Desert Shield deployment was complete and the President ordered 200,000 more troops into the Persian Gulf. The 6th Marine Expeditionary Brigade on the east coast of the United States was activated to merge with squadron 1, the last of the squadrons. The ships were deployed from Morehead City, North Carolina, and then unloaded in Al Jubail by December 21. The deployment dates and transit times of the ships in the three maritime prepositioning squadrons are shown in table 2.1.

Table 2.1: Deployment of Maritime Prepositioning Ships

Ship	Deployment	Arrival	Transit time
Squadron 2 (Prepositioned in Diego Garcia)			
Anderson	August 8	August 15	7 days
Hauge	August 8	August 15	7 days
Bonnyman	August 8	August 15	7 days
Fisher[a]	August 4	August 24	20 days
Baugh[a]	August 5	September 4	30 days
Squadron 3 (Prepositioned in Guam/Tinian)			
Lummus	August 8	August 27	19 days
Button[b]	August 7	September 2	26 days
Lopez	August 8	August 28	20 days
Williams	August 8	August 28	20 days
Squadron 1 (Prepositioned on the U.S. East Coast)			
Obregon	November 14	December 13	29 days
Kocak	November 14	December 13	29 days
Pless	November 14	December 13	29 days
Bobo	November 14	December 13	29 days

[a]In Atlantic for maintenance cycle and reprovisioning. The Fisher has since been renamed the Phillips.

[b]Returning from exercise on U.S. Pacific coast.

The ships were used for several purposes after their equipment and supplies were unloaded. Eight of the ships were used to provide additional

sealift to the Persian Gulf. Four others were used as floating warehouses near Al Jubail to decrease storage on land. One was reloaded and put back under the control of the U.S. Pacific Command in case a crisis occurred in the Command's area of responsibility.

Deployment of Other Afloat Prepositioning Ships

All of the ships used by DOD components other than the Marine Corps were ordered to deploy by August 9, 1990. Because the Defense Logistics Agency had just discharged two of its four tankers, only 10 prepositioning ships were available. Nine of these ships were at Diego Garcia and one was in the Mediterranean Sea. Since the ships were at their prepositioning sites, they all arrived at ports in southwest Asia by August 21, 1990.

- The Army's ships arrived at Ad Dammam, along the eastern coast of Saudi Arabia. After unloading, they were used for sealift to transport other items. Since there was no logistical infrastructure in southwest Asia, the Army had to provide facilities and services for its incoming personnel. The Army provided some of these needs from its prepositioning ships, including cots, tents, and other life-support equipment.
- The Air Force's ships arrived at different ports in southwest Asia. In addition to the ships, about 30 percent of the Air Force's requirement for logistical support for air bases had been prepositioned on land in southwest Asia.
- The Navy's ship arrived in Al Jubail and its fleet hospital was set up and operated on shore nearby. During the war, the Navy brought in two more fleet hospitals and also used its two hospital ships, the USNS Mercy and USNS Comfort, to provide more intensive medical care.
- The two remaining prepositioned tankers used by the Defense Logistics Agency arrived in the area of southwest Asia. These ships provided fuel to oiler ships that were supporting military activities and were also used as floating fuel storage.

Table 2.2 shows the deployment dates and transit times of the other afloat prepositioning ships.

Table 2.2: Deployment of Other Afloat Prepositioning Ships

Users and ships (Arrival location)	Deployment	Arrival	Transit time
Army			
Green Harbour (Ad Dammam)	August 9	August 17	8 days
Green Island (Ad Dammam)	August 9	August 17	8 days
Austral Rainbow (Ad Dammam)	August 9	August 17	8 days
American Cormorant (Ad Dammam)	August 9	August 18	9 days
Air Force			
Santa Victoria (Ad Dammam)	August 9	August 18	9 days
Advantage[a] (Jiddah)	August 9	August 20	11 days
American Kestral (Dubai)	August 9	August 21	12 days
Navy			
Noble Star (Al Jubail)	August 9	August 21	12 days
Defense Logistics Agency			
Overseas Alice (Persian Gulf)	August 8	August 18	10 days
Sealift Pacific (Red Sea)	August 8	August 18	10 days

[a]Departed from the Mediterranean Sea. All other ships departed from Diego Garcia.

Changes in Afloat Prepositioning Resulting From War

Based on their experiences during the war, the users of afloat prepositioning have been returning their ships to prepositioning sites and solving problems identified during the war. The problems identified by the Marine Corps include (1) inadequacies in the prepositioned inventory, (2) inefficient unloading of ships, and (3) inadequate automated tracking of assets through the supply system and distribution to units. The Marine Corps is taking corrective actions that, if fully implemented, should help alleviate these problems.

Reloading and Returning Prepositioning Ships

The three Marine Corps maritime prepositioning squadrons were reloaded in theater by November 1991 and the ships returned to their prepositioning sites. The Marine Corps reloaded the items on its ships differently to increase the flexibility of the squadrons. This allows the deployment of only those ships that are needed for three different types of units: a full expeditionary brigade, a low-intensity conflict brigade with fewer major weapon systems, or a smaller expeditionary unit. In addition, each squadron is no longer designated to be used by a specific expeditionary brigade. Instead, the forces to deploy to the squadrons would be part of a marine expeditionary force.

During the reconstitution, some of the prepositioned equipment was upgraded or replaced. For example, the Marine Corps upgraded its older M-60 tanks with new M-1 tanks and amphibious assault vehicles were provided to replace those with damage or extremely high mileage. Some items were shipped from the United States for the reconstitution or were already in transit to the Persian Gulf at the end of the war.

As of August 1992, the other DOD users of afloat prepositioning have returned to their pre-war level of 12 ships.

- The Army brought the prepositioned stocks left over from the war back to the United States for refurbishing. The Army has four ships under charter by MSC and is sending them to Diego Garcia. Two of the ships have gone to Diego Garcia and the last one is planned to go by January 1993.
- The Air Force has expanded from three to four prepositioning ships. Two of these ships are at Diego Garcia and two are located in the Mediterranean Sea. The Air Force will use its ships to respond to contingencies worldwide and plans to expand its land prepositioning in southwest Asia.

- The ship used before the Persian Gulf War to preposition the Navy fleet hospital has been replaced by MSC with another ship. This ship will be reloaded with a fleet hospital and sent to Diego Garcia.
- The Defense Logistics Agency has three ships in Diego Garcia for prepositioning fuel for DOD users.

Marine Corps Better Matching Inventories to Needs

Based on its Persian Gulf War experience, the Marine Corps identified a need to better match the inventory of items on its prepositioning ships with the needs of the combat units they support. During our April 1991 visit to Saudi Arabia and Bahrain,[1] Marine Corps logisticians said they believed that the ships' inventories contained too few of the needed items and some items that were not needed. For example, the inventory did not have enough items needed for the desert, such as filters and supplies for water purification units, whereas map storage closets that were in the inventory were not needed.

The Marine Corps has since revised the prepositioning objectives for ground, aviation, and support items for loading on all three squadrons. The Marine Corps Commandant approved the objectives in October 1991. DOD officials noted that the Navy and Marine Corps are developing a directive to formalize these prepositioning objectives, which will be validated annually. DOD also noted that the first of the 13 maritime prepositioning ships had initiated reloading based on the new prepositioning objective during its maintenance cycle in November 1991.

Improved Training to Facilitate Ship Unloading

The Marine Corps' ships were unloaded inefficiently early in the deployment because combat service support personnel were not yet in theater and confusion existed on proper procedures. As a result, the equipment from the first of the ships to arrive was issued without an organized staging plan, which caused some delays. Based on the wartime experience, the Marine Corps is reinforcing its doctrine for unloading ships and further educating personnel in maritime prepositioning operations.

Maritime prepositioning operational doctrine, exercises, and training are based on combat service support personnel arriving first in the deployment sequence. However, the U.S. Central Command's deployment priority was to provide combat forces to the theater, which delayed the arrival of combat service support personnel. The Command believes the unloading

[1] Desert Shield/Storm Logistics: Observations by U.S. Military Personnel (GAO/NSIAD-92-26, Nov. 13, 1991).

process could have been enhanced by having support forces in place prior to unloading to help facilitate the movement of assets.

In the early part of the deployment, sufficient Marine Corps combat service support personnel did not arrive at the ports until after the first ships had been unloaded. Although an off-load preparation party from the deploying unit should have been used to help unload the ships, the preparation party for squadron 2 was not deployed in time to meet the ships before they arrived. Due to the shortage of combat service support personnel, available combat personnel had to randomly open and inspect containers to find the equipment that they needed.

Lack of familiarity with procedures caused some confusion during the initial unloadings that resulted in delays. For example, the prepositioning ships had some trucks onboard with equipment already loaded on them that were intended to be driven off and sent directly to receiving units. However, during the deployment, many personnel were unfamiliar with this procedure and unloaded almost half the trucks at the dock area. These trucks then had to be reloaded, which caused delays.

The Marine Corps is addressing the problems experienced during the war with revised training and doctrine. For example, at a January 1992 maritime prepositioning conference, the Marine Corps recognized the need to conduct training or formal exercises at the combat unit level on such procedures as packing and unpacking containers. In addition, the requirement for combat service support personnel to do the unloading will be re-emphasized in Marine Corps doctrine now being revised, according to the maritime prepositioning officer at Marine Corps headquarters.

Automated Systems to Track Assets More Accurately

During the initial deployment, prepositioned equipment was not tracked well through the supply system and during distribution to arriving units. The Marine Corps attributes this to a lack of adequate automated logistics systems in theater early in the deployment. Due to the U.S. Central Command's requirement, the Marine Corps deployed its weapons systems before its automated inventory support systems. As a result, the ships in the first prepositioning squadron were unloaded without automated systems to track the flow of equipment and supplies. The automated tracking of the second squadron occurred only after acquiring computer hardware in Saudi Arabia.

The Marine Corps believes that improvements are needed to the automated information systems it uses for its maritime prepositioning force. According to a Marine Corps examination, some data redundancy existed, some interfaces had to be done manually, and the mainframe computer systems were more difficult to deploy than personal computers. The Marine Corps is developing systems that are easier to use, particularly in the field.

Consequently, the Marine Corps is fielding improved automated inventory systems to support maritime prepositioning operations and logistics planning. Two new systems are called the Marine Air-Ground Task Force Deployed Support System II and the Computer-Aided Embarkation Manifest System. They are now being fielded at all of the major fleet marine force locations. Before the end of 1992, the Marine Corps will have tested its new systems during the maintenance cycle for three ships at Blount Island and during two maritime prepositioning exercises.

Issues to Resolve As Afloat Prepositioning Is Expanded

DOD continues planning for the expansion of its sealift capabilities as a result of its Mobility Requirements Study. DOD is also starting to implement this expansion by designing new prepositioning ships. If fully implemented, the expansion would increase the number of Army prepositioning ships from 4 to 15 and preposition Army combat unit equipment on ships for the first time. Because of these implications, four issues related to the planned expansion should be resolved before the total number of ships to be acquired is determined.

Prepositioning on Land Could Provide an Alternative

The Mobility Requirements Study report did not assume additional Army land prepositioning in southwest Asia in developing its sealift requirement, an assumption that could increase the requirement for ships. Although the study plans to meet an increased proportion of the Army's mobility needs with afloat prepositioning, land prepositioning near potential conflict sites provides a possible alternative at lower cost.

According to DOD, afloat prepositioning is about four times as expensive as land prepositioning. DOD estimated projected life-cycle costs for additional afloat prepositioning using the prepositioning ships planned for in the Mobility Requirements Study and land prepositioning. The estimates are $170,000 per ton for afloat prepositioning and $40,000 per ton for land prepositioning.

The potential exists to expand the use of land prepositioning in southwest Asia. Security cooperation agreements can include prepositioning of U.S. military equipment and supplies in other nations. In southwest Asia, DOD has recently signed such agreements with Kuwait and Bahrain. In addition, DOD has a longstanding cooperation agreement with Oman. DOD is continuing to explore similar arrangements with other friendly countries in southwest Asia.

Since the Mobility Requirements Study focused on requirements for 1999, future land prepositioning could be available in southwest Asia to reduce afloat prepositioning requirements. Part of the additional afloat prepositioning would be Army combat unit equipment, such as tanks and howitzers, and the remainder would include various support items, such as ammunition, tents, and rations, for the combat units. Although some potential prepositioning nations are reluctant to accept combat unit equipment, some nations have indicated more willingness to accept support items.

In commenting on this report, DOD stated that the Mobility Requirements Study considered land prepositioning but opted for the increased flexibility of afloat prepositioning for the Army unit equipment and combat service support. DOD also commented that the study demonstrated that the early arrival of mechanized forces enhanced the flexibility to respond in either southwest Asia or Pacific regions. An afloat prepositioning program gives the flexibility to respond in either location with one set of equipment, according to DOD. Appendix I contains the full text of DOD's comments.

We acknowledge the advantages of afloat prepositioning over land prepositioning. Afloat prepositioning can be more flexible for meeting early delivery requirements, assuming adequate ports are available to unload equipment and supplies. Also, prepositioning ships can move to different theaters for conflicts. In contrast, items prepositioned on land may not be located where they are needed and may be difficult to relocate. If items were prepositioned on land, some sealift ships may still be needed to move these items for contingencies in different theaters.

Nonetheless, DOD is pursuing opportunities to increase land prepositioning in southwest Asia. If DOD secures additional land prepositioning, we believe that it would warrant consideration as an alternative to more expensive afloat prepositioning, provided that combat responsiveness is not unduly compromised.

Additional Prepositioning Sites Have Not Been Identified

Additional sites would need to be identified as afloat prepositioning is expanded. Although the Mobility Requirements Study recognizes that negotiations for alternative sites may be required, it did not address where the sites would be located. If additional prepositioning locations are not identified, the responsiveness of the ships could be impaired since they are intended for use in contingencies worldwide.

The Marine Corps maritime prepositioning squadrons are located in Diego Garcia, Guam, and along the U.S. Atlantic coast to provide worldwide capability. As the squadrons demonstrated during the Persian Gulf War, afloat prepositioning can support contingencies from sites in any part of the world. However, because of the need to deploy quickly, prepositioning sites other than Diego Garcia may prove more responsive for contingencies other than in southwest Asia.

Up until now, Diego Garcia has also been the site for most of the other prepositioning ships, including the ships used by the Army. However,

space to anchor additional ships is limited at Diego Garcia. While DOD recognizes this, it commented that "drifting" the ships in the area of a prepositioning site, such as Diego Garcia, is a viable alternative. However, anchoring ships at prepositioning sites is less costly than drifting them and it allows personnel and supplies to go between ships and shore.

Owning Versus Chartering Ships

The Mobility Requirements Study report included no consideration of the advantages of owning rather than chartering prepositioning ships. The study plans government ownership of nine ships and the chartering of two additional ships. Government ownership and chartering of prepositioning ships each has some advantages.

All of the previous afloat prepositioning ships have been chartered from commercial operators. The maritime prepositioning ships used by the Marine Corps were obtained under a charter agreement for 25 years. Other than the ships used by the Marine Corps, the afloat prepositioning ships are now chartered for shorter terms. The DOD Appropriations Act of 1990, section 9081, (Nov. 21, 1989, P.L. 101-165) requires that DOD not charter ships for 18 months or more without a previous submission to the House and Senate Committees on Appropriations in the budget process. Because of this requirement, MSC is acquiring these ships using charters for 17 months.

Government ownership offers the potential of greater stability in the afloat prepositioning program because it precludes the need to periodically recharter ships. Ownership could also provide ships designed specifically for afloat prepositioning, which includes environmental controls desirable for long-term use. However, continuing to charter ships also has some advantages. Acquiring ships on short-term charters can provide flexibility to change the size of the afloat prepositioning forces to meet changes in the threat. It also allows the government to avoid the high initial costs necessary for acquisition.

In commenting on this report, DOD stated that the Mobility Requirements Study presents a balanced, cost-effective mix of ships for prepositioning by acquiring nine new roll-on/roll-off ships and leasing two container ships. DOD also commented that the Secretary of Defense has already made a determination of the best mix between ownership and chartering by approving the Mobility Requirements Study report.

We did not find DOD's comments convincing for two reasons. First, although DOD said the study did not recommend leasing roll-on/roll-off ships because of the unavailability of commercial ships with the speed and size desired, the study also includes a plan to spend about $290 million to charter smaller and slower roll-on/roll-off ships in the near term until the planned new ships are constructed or converted.

Second, in our July 1992 report, we concluded that significant time and cost savings can be realized if the Navy buys or leases existing ships to convert for prepositioning. We reported that if DOD lowered its speed requirement from 24 knots for a few of these ships, more ships would be eligible for conversion, possibly saving additional time and money. For example, we identified 15 ships with 22- and 23-knot speeds that seemed to meet the general cargo size desired by the Navy. We recommended that DOD consider converting a few ships with speeds slightly lower than 24 knots.

Equipment and Maintenance Plans and Resources Needed

The planned expansion of Army afloat prepositioning creates unique resource challenges for the Army. One challenge is identifying and providing the additional equipment for afloat prepositioning. Another one is meeting the unique requirements for maintaining the equipment because it is continuously prepositioned on ships. The experience of the Marine Corps in prepositioning combat weapon systems can provide an example of how to maintain its combat readiness.

The Army wants its newest equipment prepositioned afloat, and it is currently identifying types and sources of equipment to be put on the ships. The Mobility Requirements Study report indicates that acquisition costs for new unit equipment for prepositioning are not addressed in the program. Instead, additional equipment might become available as the Army reduces its force structure to 12 active divisions and decreases its strength in Europe. Also, the Army may have to delay modernization of its reserve component units to place newer equipment on prepositioning ships.

If the Army prepositions large amounts of unit combat equipment, a periodic program for maintenance, similar to that of the Marine Corps, would be necessary. The Marine Corps' continuous equipment inspections worked the best of the afloat forces, according to the U.S. Central Command. Maintaining prepositioned combat equipment has unique requirements. For example, prepositioning on ships makes it difficult to do

continuous modifications and upgrades, so they must all be done when the ships are unloaded. To accomplish this, the Marine Corps uses docks at its dedicated maintenance facility to unload and reload the ships to shorten the time necessary for equipment maintenance.

The Marine Corps spends much of its maritime prepositioning funding on maintaining the equipment and supplies that are prepositioned. In fiscal year 1991, the Marine Corps funded a total of about $77.6 million for operations and support, not including the cost of chartering the ships that is funded by the Navy. Some of the major costs include maintenance cycle operations support; leases for land and facilities at Blount Island, Florida; port operations costs at Blount Island; labor for loading and unloading the ships; and maintenance contractors. As of August 1992, the Army had not funded operations and support costs for sealift.

Conclusion

DOD has not adequately considered some of the implications of expanding afloat prepositioning, which could affect its cost and operational effectiveness. While DOD has begun to address these issues, we believe that continued attention to them is necessary so that they can be resolved before the total number of additional prepositioning ships to be acquired is determined.

Recommendation

We recommend that, as DOD continues planning for the expansion of afloat prepositioning, the Secretary of Defense determine whether (1) additional land prepositioning could reduce afloat prepositioning requirements, (2) prepositioning sites for the additional ships will be available, (3) the plan represents the best mix of owning and chartering the ships, and (4) the Army has plans and resources for providing and maintaining the additional prepositioned equipment.

Agency Comments and Our Evaluation

As discussed above, DOD disagrees with the need to continue to consider the impact of land prepositioning on afloat prepositioning requirements and ownership versus chartering of ships. We believe these issues warrant continued attention. DOD concurred with our recommendation regarding plans and resources for Army prepositioned equipment.

Concerning the need for additional prepositioning sites, DOD believes that Diego Garcia has sufficient space for the planned interim prepositioning program, so there is no reason to defer the ship acquisition process while the site issue is being resolved. We did not intend for DOD to defer the acquisition process to identify additional sites, but rather that DOD resolve this issue before it completes the acquisition process. We clarified the recommendation accordingly.

Comments From the Department of Defense

ACQUISITION

OFFICE OF THE UNDER SECRETARY OF DEFENSE

WASHINGTON, DC 20301-3000

04 AUG 1992

Mr. Frank C. Conahan
Assistant Comptroller General
National Security and International
Affairs Division
U.S. General Accounting Office
Washington, D.C. 20548

Dear Mr. Conahan:

This is the Department of Defense (DoD) response to the General Accounting Office (GAO) draft report, "MILITARY AFLOAT PREPOSITIONING: Wartime Use And Issues For The Future," Dated June 24, 1992 (GAO Code 394431), OSD Case 9116.

The DoD generally agrees with the GAO findings outlined in this draft report concerning Afloat Prepositioning effectiveness in delivering Marine Corps equipment and supplies to the theater during Operation Desert Storm. The DoD does not, however, agree with the recommendations concerning land prepositioning as a cost or operationally effective alternative to afloat prepositioning. Further, the Mobility Requirements Study fully addressed all issues presented in the GAO recommendations

Detailed DoD comments on the GAO findings and recommendation are provided in the attachment. The Department appreciates the opportunity to comment on the draft report.

Sincerely,

Frank Kendall
Director
Tactical Systems

Enclosure

GAO DRAFT REPORT - DATED JUNE 24, 1992
(GAO CODE 394431) OSD CASE 9116

"MILITARY AFLOAT PREPOSITIONING: WARTIME USE AND ISSUES FOR THE FUTURE"

FINDINGS AND RECOMMENDATIONS TO BE ADDRESSED IN THE DOD RESPONSE TO THE GAO DRAFT REPORT

* * * * *

FINDINGS

- FINDING A: Afloat Prepositioning. The GAO reported that, since the early 1980s, DoD components have prepositioned equipment and supplies on ships, mostly at Diego Garcia in the Indian Ocean. The GAO explained that afloat prepositioning currently includes 23 ships. The GAO found that the Marine Corps is the largest user, with 13 ships in three squadrons at three locations--and is the only component that prepositions weapon systems for combat units. The GAO noted that each squadron provides enough ground equipment and supplies to equip and sustain a marine expeditionary brigade for 30 days. The GAO also reported that the Marine Corps has a comprehensive 30-month maintenance cycle for the equipment, with ships unloading equipment for maintenance and replacement, and ship inspection and maintenance at a commercial shipyard. The GAO observed that the Army, the Navy, the Air Force, and the Defense Logistics Agency use the ten remaining ships to preposition ammunition, fuel, medical supplies, and other support items. The GAO further found that the afloat prepositioning forces are commercial ships, chartered by the Military Sealift Command, and are kept fully loaded and crewed by civilians.

  The GAO learned that, in FY 1991, afloat prepositioning ships cost the Defense Business Operations Fund about $514 million. The GAO noted that the prepositioned Marine Corps equipment and supplies are valued at about $2 billion.

  The GAO observed that, in addition, the January 1992 Mobility Requirements Study report includes a plan for deployment by FY 1997 of an additional 2 million square feet of Army combat equipment and supplies, which would be prepositioned on nine large ships. The GAO found that two container ships also would be chartered for prepositioning Army ammunition and other support items. (p. 3, pp. 10-20/ GAO Draft Report)

Now on pp. 2, 8-14.

See comment 1.

DoD Response. Concur. At various points throughout the report, the GAO refers to 10 and 11 prepositioning ships without specifying when these levels were extant. There were 11 ships at the start of Desert Storm/Desert Shield. The GAO also discusses the cost advantages of afloat prepositioning over airlift. There is, in addition a strategic value of afloat prepositioning beyond rapid crisis response, such as providing politico-military signal and commitment to the allies.

- FINDING B: Afloat Prepositioning Responsive During Deployment for War. The GAO reported that, at the beginning of the Persian Gulf War deployment, afloat prepositioning ships provided equipment and supplies to the theater more quickly than they could have been sealifted from the U.S. The GAO noted that, on August 7, the U.S. began Operation Desert Shield by deploying forces to the theater, and Marine Corps prepositioning ships began arriving in Saudi Arabia eight days later. The GAO found that prepositioning ships allowed deployment of a marine expeditionary brigade with only about 250 airlift sorties, as compared to about 3,000--if the brigade and all of its equipment had to be airlifted. The GAO noted that, according to the U.S. Central Command, most of the equipment from the ships was ready to perform its mission, and other items, such as rations, were available when needed. The GAO concluded that the afloat preposition was responsive during the Gulf War. The GAO further concluded, however, that the war did not fully test the DoD deployment capability because of the extended time period available to deploy and the excellent port facilities available in Saudi Arabia. (pp. 23-24/ GAO Draft Report)

Now on p. 16.

DoD Response. Concur

- FINDING C: Deployment Of Maritime Prepositioning Squadrons. The GAO reported that, at the start of Operation Desert Shield, the DoD activated the 7th Marine Expeditionary Brigade and the 1st Marine Expeditionary Brigade. The GAO found that the 1st Marine Expeditionary Brigade had all its equipment and supplies unloaded at Al Jubayl by September 6, 1990, and the 7th Marine Expeditionary Brigade 2 days later. The GAO noted that the deployment of some of the equipment was delayed by over 3 weeks because three of the ships were not at their prepositioning sites on August 7. The GAO also reported that, in November 1990, the 6th Marine Expeditionary Brigade was activated, and the unloading of its equipment was completed by December 21. (The GAO listed the deployment of maritime prepositioning ships in

Now on pp. 16-18.

report table 2.1.) The GAO noted that the ships were used for other purposes after unloading--including one that was subsequently reloaded and put back under the control of the U.S. Pacific Command. (pp. 24-27/ GAO Draft Report)

DoD Response. Concur

- FINDING D: Deployment Of Other Afloat Prepositioning Ships. The GAO reported that all 11 of the afloat prepositioning ships used by the other DoD components were deployed on August 9, 1990, and all arrived at ports in southwest Asia by August 21, 1990. The GAO found that the four Army ships at Diego Garcia arrived at Ad Dammam on August 17 and 18--and, after unloading, were used to transport other items. The GAO further found that the Air Force ships (two at Diego Garcia and one in the Mediterranean Sea) arrived in southwest Asia between August 18 and 21. (The GAO noted that about 30 percent of the Air Force requirement for logistical support for air bases had been prepositioned on land in southwest Asia.) The GAO also found that a Navy fleet hospital arrived aboard ship on August 21. Finally, the GAO found that the three Defense Logistics Agency tankers arrived between August 16 and 18. (pp. 27-28/ GAO Draft Report)

Now on pp. 18-19.

DoD Response. Concur. The GAO uses 11 ships in this section vice 10 ships used earlier.

- FINDING E: Reconstitution Of Afloat Prepositioning. The GAO reported that the three Marine Corps maritime prepositioning squadrons were reconstituted in theater and returned to their prepositioning sites by November 1991. The GAO noted that the Marine corps reloaded the ships differently to increase the flexibility of the squadrons, and during the reconstitution some of the equipment (such as M-60 tanks) was upgraded or replaced.

  The GAO also reported that, as of February 1992, the other DoD users of afloat prepositioning had not completely reconstituted. The GAO found that the Army brought prepositioned stocks back to the U.S. for refurbishing, with the last of the four ships to return to Diego Garcia by January 1993. In addition, the GAO found that the Air Force had expanded to four prepositioning ships. The GAO noted that the Air Force plans (1) to use its ships for contingencies worldwide and (2) to expand its land prepositioning in southwest Asia. The GAO concluded that, if the Air Force acquires more land sites, it may be able to reduce the number of ships. The GAO found the Military Sealift Command

See comment 2.

Now on pp. 20-21.

was deciding on a replacement for the ship that had held the Navy fleet hospital, as it was too small. Finally, the GAO found that the Defense Logistics Agency had three ships for prepositioning fuel for DoD users, two of which have off-shore petroleum discharge systems. (pp. 29-31/ GAO Draft Report)

DoD Response. Partially concur. An increase in land prepositioning sites in Southwest Asia would not reduce the size of the Air Force afloat prepositioning program. The Air Force prepositioning program is focused on a flexible worldwide capability. Land prepositioning as an alternative to ships disregards the fact that the Air Force prepositioning fleet is designed to provide a worldwide swing force capability that cannot be replaced without sacrificing mobility.

Now on p. 21.

- FINDING F: Improving Prepositioning Inventories. The GAO reported that the Marine Corps identified a need to do better at matching the types and numbers of items on the maritime prepositioning ships with the needs of its units--(1) by reducing the number of different items carried and (2) by increasing the quantities. The GAO noted that the Navy and Marine Corps are developing an instruction to formalize prepositioning objectives approved by the Commandant, and to validate them annually. (pp. 31-32/ GAO Draft Report)

  DoD Response. Concur

Now on pp. 21-22.

- FINDING G: Facilitating The Unloading of Ships. The GAO reported that, early in the deployment, the Marine Corps ships were not unloaded efficiently because (1) supply personnel were not yet in theater and (2) confusion existed on procedures. The GAO observed that equipment from the first ships to arrive was issued without an organized staging plan or full accountability. The GAO cited, as examples, trucks that were already loaded with equipment for units, which were inadvertently unloaded and then reloaded--and combat personnel having to open and inspect containers to find equipment they needed. The GAO found that, based on the Gulf War experience, the Marine Corps is revising training and doctrine for unloading ships. (pp. 32-34/ GAO Draft Report)

  DoD Response. Concur

- FINDING H: Tracking Assets More Accurately. The GAO reported that, during the initial deployment, the

Now on pp. 22-23.

distribution of prepositioned equipment was not tracked well and units did not always know what was prepositioned on the ships. The GAO noted that the Marine Corps attributes the problem to a lack of adequate automated logistics systems in theater early in the deployment. The GAO found that the Marine Corps is fielding improved automated information systems to support maritime prepositioning operations and logistics planning, and plans to test the systems before the end of 1992. (pp. 34-35/ GAO Draft Report)

DoD Response. Concur

- FINDING I: Prepositioning On Land Could Provide Alternative. The GAO observed that the Mobility Requirements Study report did not assume additional Army land prepositioning in southwest Asia--which could decrease the future requirement for ships. The GAO noted that, according to the DoD, afloat prepositioning is about four times as expensive as land prepositioning--with life-cycle costs of $170,000 versus $40,000 per ton. The GAO observed, however, that afloat prepositioning has some advantages over land prepositioning-(1) afloat prepositioning can be more flexible in meeting early requirements, assuming adequate ports are available, (2) prepositioning ships can move to different theaters for conflicts, and (3) even if items were prepositioned on land, some additional ships may be needed to move the items to different theaters. The GAO concluded that, if the DoD is able to preposition a significant amount of Army equipment in southwest Asia, it would reduce the amount of afloat prepositioning needed because the southwest Asia conflict scenario is the most demanding on sealift. The GAO noted that the DoD has recently signed cooperation agreements with Kuwait and Bahrain--in addition to having an agreement with Oman--and is exploring similar arrangements with other friendly countries in the area. The GAO observed that, although some countries are reluctant to accept combat unit equipment they have indicated more willingness to accept support items. (pp. 36-38/ GAO Draft Report)

Now on pp. 24-25.

DoD Response. Nonconcur. The GAO correctly states that the Mobility Requirements Study did not assume additional Army prepositioning ashore in Southwest Asia. The Mobility Requirements Study looked at ashore prepositioning but opted for the increased flexibility of afloat prepositioning because of its ability to "swing" to other areas in the same theater as well as other theaters. The GAO finding that savings could be realized by prepositioning ashore vice afloat is based on the assumption that the only theater of

Now on pp. 25-26.

See comment 3.

Now on pp. 26-27.

interest is Southwest Asia. The Mobility Requirement Study also factored in the contribution of responding to a contingency in Korea or elsewhere in making its afloat prepositioning decision.

- FINDING J: Additional Afloat Prepositioning Locations Are Needed.. The GAO concluded that, if afloat prepositioning for the Army is significantly expanded, additional prepositioning sites would be needed. The GAO found that space to anchor additional ships is limited at Diego Garcia. The GAO observed that prepositioning sites, other than Diego Garcia (such as Guam), may prove more responsive for contingencies other than southwest Asia and be more cost effective. (pp. 38-39/ GAO Draft Report)

  DoD Response. Partially concur. Depending on operation tempo maintained by the prepositioning ships, there may be sufficient anchorages available at Diego Garcia. The afloat prepositioning site at Guam is not a likely candidate. With a Maritime Prepositioning Ship squadron already there, and additional ships recently repositioned from Subic Bay, Philippines, ship space is at a premium. "Drifting" in the area of a prepositioning site, such as Diego Garcia, is a viable alternative.

- FINDING K: Ownership Versus Chartering Of Ships. The GAO observed that the Mobility Requirements Study included no consideration of the advantages of ownership versus chartering of prepositioning ships. The GAO further observed that each have some advantages. The GAO found that the Marine Corps maritime prepositioning ships were acquired under a "build-and-charter" agreement for a total of 25 years. The GAO further found that other prepositioning ships are chartered for shorter terms, and that the DoD Appropriations Act of 1990 (P.L. 101-165) requires that the DoD not charter ships for more than 18 months without a previous submission to the Committees on Appropriations in the budget process. The GAO recognized that Government ownership of nine ships, as planned by the study, has the advantages of greater stability in the program and of ships designed specifically for afloat prepositioning (including environmental controls). The GAO concluded that, on the other hand, chartering can provide flexibility to change the size of the afloat prepositioning forces to meet changes in the threat, and allows the Government to avoid the high initial costs necessary for acquisition. (pp. 39-40/ GAO Draft Report.

DoD Response. Partially concur. The Mobility Requirements Study considered chartering of prepositioning ships and recommended leasing 2 container ships for prepositioning. The Mobility Requirements Study did not recommend leasing Roll-on/Roll-off ships for prepositioning because of the unavailability of commercial ships with sufficient speed and size.

- FINDING L: Additional Equipment and Maintenance Needed For Army Prepositioning. The GAO reported that the Army wants its newest equipment prepositioned afloat, but has not yet determined how it will provide the equipment. The GAO concluded that additional equipment might become available as the Army reduces its force structure to 12 active divisions, and reduces its strength in Europe. The GAO also concluded that the Army may have to delay the modernization of its reserve components to place its newer equipment on ships. The GAO found that, if the Army prepositions large amounts of combat equipment, a periodic program of maintenance would be necessary--similar to that of the Marine Corps. The GAO also found that prepositioning on ships has unique requirements. (The GAO noted that, in FY 1991, the Marine Corps funded about $77.6 million for operation and maintenance of the equipment on its ships.) (pp. 40-41/ GAO Draft Report)

Now on pp. 27-28.

DoD Response. Concur

* * * * *

RECOMMENDATIONS

See comment 4.

- RECOMMENDATION 1: The GAO recommended that, before the DoD finalizes its plans to expand afloat prepositioning, the Secretary of Defense determine whether additional land prepositioning could reduce afloat prepositioning requirements. (p. 42/ GAO Draft report)

Now on p. 28.

DoD Response. Nonconcur. The Secretary, through the Mobility Requirements Study, has determined that the Army

unit equipment and combat service support should be prepositioned afloat rather than ashore. The study demonstrated that the early arrival of mechanized forces enhanced flexibility to respond to contingencies in either Southwest Asia or Pacific regions. An afloat prepositioning program gives the flexibility to respond in either location with one set of equipment. Implementation of the Mobility Requirements Study recommended afloat prepositioning package does not preclude adding land based prepositioning, if conditions warrant.

Even with land-based prepositioning, additional ships would be required to move prepositioned equipment to other theaters and would delay response. During Desert Storm/Desert Shield, the Marine Corps Maritime Prepositioning Ships program provided rapid response. Had the contingency been in another region, the Maritime Prepositioning Ships could have responded in a similar fashion. Afloat prepositioning for the Army provides that same responsiveness.

- RECOMMENDATION 2: The GAO recommended that, before the DoD finalizes its plans to expand afloat prepositioning, the Secretary of Defense determine whether prepositioning sites for the additional ships will be available. (p. 42/ GAO Draft Report)

Now on p. 28.

DoD Response. Nonconcur. Although the Transportation Command has been tasked, as part of the Improving Force Closures Working Group, to identify additional afloat prepositioning locations, the site issue does not require an immediate resolution, as there is sufficient space in Diego Garcia for the recommended Interim Prepositioning program. If Diego Garcia cannot accommodate the additional prepositioning ships, then an alternative siting plan can be developed while the acquisition process for the ships is underway. There is no reason to defer the acquisition process while the site issue is being resolved.

- RECOMMENDATION 3: The GAO recommended that, before the DoD finalizes its plans to expand afloat prepositioning, the Secretary of Defense determine whether the plan represents the best mix of ownership and chartering of the ships. (p. 42/ GAO Draft Report)

Now on p. 28.

DoD Response. Nonconcur. The Mobility Requirements Study presents a balanced, cost-effective mix of ships for prepositioning with the nine new Roll-on/Roll-off ships and two leased container ships taking into account the reality

of the market place to meet mobility requirements. By approving the Mobility Requirements Study, Vol I, the Secretary of Defense has already made a determination of the best mix between ownership and chartering. The mix of Roll-on/Roll-offs and container ships to be used for sealift and afloat prepositioning will be designed to carry unit equipment and containers. Roll-on/Roll-off ships of the size and speed needed for the program are not available on the charter market. Owning the ships does not restrict U.S. flexibility. If prepositioning is not required in the future, the ships and prepositioned equipment can be returned to the Continental United States, where the ships would be put in Reduced Operating Status.

- RECOMMENDATION 4: The GAO recommended that, before the DoD finalizes its plans to expand afloat prepositioning, the Secretary of Defense determine whether the Army has plans and resources for providing and maintaining the additional prepositioned equipment. (p. 42/ GAO Draft Report)

Now on p. 28.

DoD Response. Concur. The Army is currently identifying types and sources of equipment to be placed in the afloat prepositioning ships and is studying alternatives for maintenance of the Army afloat prepositioning fleet. The resource question refers to Fiscal Discipline in programs reviewed by the Defense Acquisition Board. The Army is addressing the cost of two funding requirements, including the operation and support costs of the Army afloat prepositioning ships and a new ammunition facility.

The following are GAO's comments on the letter dated August 4, 1992, from the Department of Defense.

GAO Comments

1. Our report was revised and updated to reflect the correct numbers of prepositioning ships. According to MSC, 10 afloat prepositioning ships were available at the start of the deployment to the Persian Gulf, not including those used by the Marine Corps. In August 1992, MSC officials told us there were 12 prepositioning ships under charter then for the Army, Air Force, Navy, and Defense Logistics Agency.

2. We removed the sentence contained in the draft report because it was not our intent to imply that the Air Force may be able to reduce the number of its existing prepositioning ships.

3. We removed the reference to Guam as a possible alternative to Diego Garcia as a prepositioning site based on DOD's comment that space for ships there is at a premium.

4. We changed the first part of the recommendation to clarify our intent that DOD's acquisition program not be delayed to resolve the issues in our report. The recommendation now indicates that our issues be resolved as DOD continues to plan the expansion of afloat prepositioning.

Major Contributors to This Report

National Security and International Affairs Division, Washington, D.C.	Norman J. Rabkin, Associate Director Robert B. Eurich, Assistant Director Alan M. Byroade, Evaluator-in-Charge Ricardo A. Aguilera, Evaluator