

GAO

Report to the Chairman, Subcommittee
on Readiness, Committee on Armed
Services, House of Representatives

November 1994

READY RESERVE FORCE

Ship Readiness Has Improved, but Other Concerns Remain





United States
General Accounting Office
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**National Security and
International Affairs Division**

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The Honorable Earl Hutto
Chairman, Subcommittee on Readiness
Committee on Armed Services
House of Representatives

Dear Mr. Chairman:

As requested, we reviewed the Ready Reserve Force program. Our analysis included the ships' overall readiness, the required readiness level for the highest priority ships, and the long-term effect of the decline in the number of available U.S. merchant mariners to crew the Ready Reserve Force ships. This report contains recommendations to the Secretaries of Defense and Transportation.

As agreed with your office, unless you publicly announce its contents earlier, we plan no further distribution of this report until 30 days from the date of this letter. At that time, we will send copies to interested parties and make copies available to others upon request.

Please contact me on (202) 512-5140 if you or your staff have any questions regarding this report. Other major contributors are listed in appendix III.

Sincerely yours,

A handwritten signature in black ink that reads 'Mark E. Gebicke'.

Mark E. Gebicke
Director, Military Operations and
Capabilities Issues

Executive Summary

Purpose

Ships move about 90 percent of all dry cargo needed to deploy, sustain, and resupply U.S. forces. The Ready Reserve Force (RRF)—a government-owned, inactive fleet of former commercial ships of various configurations and capabilities—is the government’s largest source of strategic sealift capability. During the Persian Gulf War, 75 percent of the RRF ships could not be made ready within their specified time frames principally because of the ships’ poor condition and problems crewing the ships. In 1992, the Department of Defense (DOD) recommended spending almost \$4 billion over the next 7 years to purchase more ships for the RRF and improve their readiness. However, the pool of U.S. merchant mariners available to crew RRF ships has been steadily declining for several decades.

The Chairman, Subcommittee on Readiness, House Committee on Armed Services, asked GAO to evaluate whether RRF ships would be ready within specified time frames in the event of a large-scale contingency. Specifically, GAO determined whether (1) program changes implemented to address problems encountered during the Persian Gulf War have improved the ships’ overall readiness, (2) the readiness level of the highest priority ships exceeds that of other strategic mobility components, and (3) a further decline in the number of available U.S. merchant mariners would have a long-term effect on crewing RRF ships.

Background

RRF ships are maintained in a readiness status such that they can be activated for service within 4, 5, 10, or 20 days after DOD requests them. The Department of Transportation, through the Maritime Administration (MarAd), manages and maintains the RRF ships, and DOD directs and controls operations once the ships have been activated. DOD’s Transportation Command is responsible for DOD’s RRF oversight and operational control.

In August 1990, the RRF consisted of 96 ships, 78 of which were activated to support the Persian Gulf War. The problems encountered while activating the ships for the war included numerous equipment deficiencies caused by improper deactivations when the ships were acquired into the RRF, inconsistent preservation techniques, weak ship manager controls, and the lack of detailed records to track maintenance activities within the fleet.

DOD’s 1992 Mobility Requirements Study recommended that by 1999 the RRF consist of 142 ships, 63 of which would be kept in a high-priority readiness status. Of these 63 ships, 36 would need to be able to activate in 4 days and 27 would have to be ready in 5 days.

Results in Brief

MarAd has made significant progress addressing problems it encountered while activating RRF ships for the Persian Gulf War. It has identified and corrected equipment deficiencies, instituted more uniform and comprehensive specifications for the deactivation and preservation of RRF ships, strengthened ship manager controls by expanding and clarifying the manager's contractual responsibilities, and developed and implemented automated information systems for tracking maintenance repairs. MarAd has also implemented new strategies for maintaining high-priority ships. Recent testing has indicated that RRF ships can be made ready to sail within specified time frames. However, the success of these activations has resulted largely from maintenance and repairs performed during and after the war.

MarAd's ability to activate ships within 4 or 5 days exceeds the current readiness level of other strategic mobility components. The Army's ability to get unit equipment (e.g., tanks and helicopters) from key Army installations to seaports is still constrained by deteriorated facilities. Although the Army plans to increase its capability to reach seaports more quickly, most projects will not be completed by the 1999 time frame set in DOD's mobility study, when 63 RRF ships will be expected to be ready to activate within 4 or 5 days. Further, the study's recommendation to maintain 63 ships in this high state of readiness is not justified by DOD's model.

The decline in the number of available mariners should not immediately affect MarAd's ability to crew RRF ships. However, if the decline continues, MarAd's future ability to adequately crew these ships is questionable. Alternatives to resolve this situation, such as a civilian reserve program, have been proposed, but none have been adopted.

Principal Findings

RRF Readiness Has Improved

MarAd's changes to the RRF program have addressed problems identified during the Persian Gulf War. In 1993, DOD requested, without prior notice, that MarAd activate six RRF ships to verify their readiness. The ships performed excellently: all six were activated either on time or earlier and experienced fewer equipment failures than during their activations for the war. However, the activations were requested, on average, only 7 months

after the ships had been deactivated from their service in the war and after almost \$30 million had been spent on them.

MarAd has initiated several strategies to maintain the current readiness levels of the RRF's high-priority ships. For example, in 1993, MarAd began assigning permanent, nucleus crews to the highest priority ships and planned to activate them every year for testing. Also, MarAd began assigning two-person crews to the other high-priority ships and planned to activate them biennially for testing. The cost to sustain this high readiness status is much greater than the amount spent before the war—\$3 million per ship annually compared with about \$800,000 per ship annually. MarAd's ability to continue the RRF's current high readiness status depends largely on future maintenance and repair funding levels.

**RRF Readiness Level
Exceeds Other
Deployment Components**

Maintaining today's RRF ships in a relatively high readiness status, as recommended by DOD's 1992 mobility study report, is not consistent with the current readiness level of other strategic deployment components. For example, the Army's ability to move unit equipment from key installations to seaports is currently hampered because of deteriorated rail facilities. The Army has identified an estimated \$550 million in military construction and operations and maintenance funding through fiscal year 2001 for various projects that are expected to increase its capability to transport equipment to ports more quickly. However, at current funding levels, some of these projects will take 15 to 20 years to complete and therefore do not yet provide the rapid deployment capability assumed in DOD's mobility study.

The mobility study's specific recommendation to maintain 63 RRF ships in a 4- or 5-day, high-readiness status was not supported by DOD's detailed analysis. For example, in the specific scenario used to justify the overall study's recommendations, the computer model assumed that only 14 RRF ships would need to be ready to load cargo by the 5th day. DOD officials could not explain the large discrepancy between the number of ships used in its model and the number it recommended be kept in a high readiness status in the study's final report. However, they did state that the overall requirement to maintain 63 RRF ships in a high-priority readiness status was still valid. Transportation Command officials are currently reviewing the RRF's size, composition, and readiness status to meet surge sealift requirements in the year 2001 as part of a new DOD mobility study, which is expected to be released in January 1995.

Long-Term Crewing Initiatives Need to Be Developed Further

The continuing declining pool of available, qualified U.S. mariners may affect MarAd's future ability to adequately crew RRF ships. DOD and MarAd have conducted numerous studies on this issue and have proposed alternative ways to improve the likelihood that RRF ships will be adequately crewed. These alternatives include the creation of a civilian merchant marine reserve and the expansion of the existing Naval Merchant Marine Reserve. However, DOD, MarAd, and others involved in this issue have thus far been unable to reach consensus on a crewing alternative.

Recommendations

GAO recommends that the Secretary of Defense direct the Commander in Chief, Transportation Command, to annually review RRF ship readiness requirements provided to MarAd and ensure that they are in line with current military deployment capabilities.

GAO also recommends that the Secretary of Transportation direct the Maritime Administrator to annually assess whether an adequate number of experienced U.S. merchant mariners would be available to crew RRF ships within DOD's specified time frames. If these assessments indicate that the number of qualified mariners may not be sufficient, the Secretary should propose a specific merchant marine crewing alternative to the Congress.

Agencies Comments

Both DOD and the Department of Transportation commented on GAO's draft report (see apps. I and II). DOD concurred with the recommendation to the Secretary of Defense and stated that RRF readiness requirements are being reviewed annually in cooperation with MarAd as part of the budget review. DOD noted that readiness levels are also being examined as part of the ongoing Mobility Requirements Study Bottom-Up Review.

Transportation partially concurred with the recommendation to annually assess the number of qualified U.S. mariners available to crew RRF ships and, if necessary, report crewing options. Transportation stated that it maintains maritime workforce statistics on the size and the composition of U.S. merchant mariners. It does not report this information to the Congress in conjunction with defense requirements. GAO believes that MarAd's assessment would be an appropriate first step to define the effect that the declining U.S. merchant marine pool has on national security.

Transportation said that the recommendation should focus on the need for reemployment rights legislation for U.S. merchant mariners if called upon

to serve during a war or national emergency. It pointed out that reemployment rights were discussed in GAO's report.¹ GAO disagrees with Transportation. GAO has advised the Congress that the passage of reemployment rights for mariners equivalent to the rights and benefits provided any member of a reserve component of the Armed Forces is a fair and equitable measure.² GAO continues to believe that the primary focus should be on the continuing decline in the pool of experienced U.S. mariners and having an adequate number available to crew RRF ships. Although reemployment rights could be a positive influence, this incentive's impact cannot yet be determined. GAO believes that an annual assessment of the crewing issues could clearly identify specific actions needed to meet defense objectives.

¹Strategic Sealift: Summary of Workshop on Crewing the Ready Reserve Force (NSIAD-94-177, June 6, 1994).

²Management Reform: GAO's Comments on the National Performance Review's Recommendations (GAO/OCG-94-1, Dec. 3, 1993).

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Abbreviations

DOD	Department of Defense
GAO	General Accounting Office
MarAd	Maritime Administration
ROS	reduced operating status
RRF	Ready Reserve Force

Introduction

The Ready Reserve Force (RRF) is a government-owned, inactive fleet of former commercial ships of various configurations and capabilities that should be ready to sail within 4, 5, 10, or 20 days in response to national emergency sealift requirements. The RRF was organized in 1976 with 30 ships drawn from the 360 ships in the National Defense Reserve Fleet, which was created in 1946 to be able to respond to national emergencies.¹ During fiscal year 1994, the RRF consisted of 108 ships. The fleet is expected to increase to 142 ships by 1999 in accordance with the Department of Defense's (DOD) Mobility Requirements Study and defense plans.

Organization and Management of the RRF

The Department of Transportation, through the Maritime Administration (MarAd), manages and maintains RRF ships, and DOD directs and controls operations once the ships have been activated. The Military Sealift Command, under the Transportation Command, carries out DOD's oversight and operational control responsibilities.

RRF ships are berthed at Reserve Fleet sites located in James River, Virginia; Beaumont, Texas; Suisun Bay, California; and other locations in the United States and overseas. MarAd contracts with ship managers, who are responsible for activating, maintaining, crewing, operating, and deactivating the ships as directed. The American Bureau of Shipping and the U.S. Coast Guard conduct periodic limited inspections of the ships for compliance with marine safety regulations.² The ship managers are required to ensure that the ships are fully operational once MarAd notifies them to activate the ships. The Military Sealift Command designates a ship as being fully operational when, among other things, a complete crew has been provided, all required regulatory certificates have been obtained, and sea trials have been performed.

RRF Use During the Persian Gulf War

Of the 96 ships that were in the RRF in August 1990, 78 were called upon to support the Persian Gulf War. This was the first large-scale activation and employment of the RRF since it was separated from the National Defense Reserve Fleet. These ships transported nearly one-fifth of the dry cargo

¹The RRF was initially called the Ready Reserve Fleet and was renamed the Ready Reserve Force in 1982.

²American Bureau of Shipping surveyors periodically inspect merchant vessels and certify that ships are structurally sound and mechanically fit.

deployed.³ However, ship activations were not as timely as planned—only 25 percent of the activated ships met their assigned readiness goals. Although insufficient fiscal year 1990 maintenance funding has been cited as a major reason for many late activations, a Department of Transportation Inspector General report attributed ships' mechanical and crewing problems as the primary reasons the RRF ships were not able to meet specified activation times.

Mechanical problems were attributed to (1) the poor condition of the ships when they were purchased for the RRF, (2) the age of the ships' equipment, (3) improper steps taken to deactivate the ships, (4) the ships' lack of use, (5) shipyard repairs and upgrades not being tested upon completion, and (6) uncorrected deficiencies identified during the periodic Coast Guard inspections and during specified fleet maintenance procedures. The Transportation Inspector General reported that 45 of the 79 ships activated for the Persian Gulf War had not been operated since their acquisition and acceptance into the RRF.

The Transportation Inspector General also reported that mariners must be onboard the activating ships at specified times and should be knowledgeable of the ships and their operating systems. They are responsible for testing and operating all components and systems required to make the ships operational. Crewing problems during the war were caused by crew members that arrived late, lacked knowledge of the specific ship and operating systems, or had to be replaced because of crew turnover.

Objectives, Scope, and Methodology

The Chairman, Subcommittee on Readiness, House Committee on Armed Services, asked us to evaluate whether RRF ships would be ready within specified time frames in the event of a large-scale contingency. Specifically, we determined whether (1) the changes implemented to address problems encountered during war activations have improved the ships' overall readiness, (2) the readiness level of the highest priority ships exceeds that of other strategic mobility components, and (3) a further decline in the number of available U.S. merchant mariners would have a long-term effect on crewing the force.

To determine whether the overall readiness of the RRF had improved since the Persian Gulf War, we compared selected ships' 1990 and 1993

³The remainder of U.S. sealift was provided by DOD-controlled ships, including fast sealift ships, preposition force ships, and commercial U.S.-flag ships.

activation performance. The selected ships included those activated in 1993 for purposes other than testing post-war repairs. We reviewed MarAd, Military Sealift Command, Coast Guard, and American Bureau of Shipping records, as well as related external studies, to determine the length of activation, significant machinery failures, and costs.

We identified and reviewed program modifications initiated since the war. We visited ships on the East, Gulf, and West Coasts; interviewed officials from the Military Sealift Command, the U.S. Coast Guard, the American Bureau of Shipping, MarAd, the Merchant Marine Academy, and unions, as well as RRF crew members and ship managers; and reviewed studies and documents to assess the relative benefits of these program changes. We examined the status and effect of post-war repair expenditures, changes in MarAd's policies for maintaining and preserving the ships, changes to MarAd's contractual agreement with ship manager companies, and new automated maintenance management systems. We also assessed MarAd's plans for maintaining the readiness of the RRF and the consequences of reduced funding.

To determine the appropriate readiness status for the RRF, we obtained and analyzed data on several strategic mobility factors that may diminish the need for RRF ships to be maintained in a high-priority status. We analyzed the Mobility Requirements Study's volume I and II reports, using the Middle East scenario, to determine the times specific types of ships first loaded, the ports that were assumed to be loading cargo within the first 30 days, and the locations and readiness goals set in the study. We discussed our analysis with Joint Chiefs of Staff officials.

We reviewed the Army's Strategic Mobility Program's Management Plan to identify funding and plans for improvement to the continental United States infrastructure that would increase the mobility of selected military units to their seaports of embarkation. We discussed the status of these improvements with Army headquarters, Forces Command, Transportation Command, and Military Traffic Management Command officials.

To determine the current and future availability of crews, we reviewed Persian Gulf War RRF activation data, RRF crewing requirements, and labor availability estimates. We sponsored a workshop on April 5, 1994, to discuss the impact of the declining merchant marine pool on U.S. sealift capability, identify impediments in crewing RRF ships, and reach consensus

among the participants on how to address the issues discussed. We issued a report,⁴ that provided a summary of views expressed at the workshop.

We have issued several other products on issues related to the RRF. In our testimony,⁵ we discussed several issues related to U.S. mobility capabilities that need to be resolved, including the Army's current ability to get cargo to the ports. In our letter to the Maritime Administrator (GAO/NSIAD-94-96R, Jan. 7, 1994), we provided information on the latest selection of 12 roll-on/roll-off ships for the RRF.⁶ We stated that these ships would provide 1.6 million square feet of additional deck space for surge requirements, thereby increasing the fleet's roll-on/roll-off cargo capacity by 40 percent. Three of the ships have been upgraded to U.S. specifications, and the other nine ships are expected to be completed by November 1994. Two of these ships are serving as Army prepositioning ships. A complete list of related GAO products appears on the last page of this report.

We conducted our review between August 1993 and June 1994 in accordance with generally accepted government auditing standards.

⁴Strategic Sealift: Summary of Workshop on Crewing the Ready Reserve Force (GAO/NSIAD-94-177, June 6, 1994).

⁵Strategic Mobility: Serious Problems Remain in U.S. Deployment Capabilities (GAO/T-NSIAD-94-165, Apr. 26, 1994).

⁶Roll-on/roll-off ships are important to the RRF because they can quickly load and unload track and wheeled vehicles such as tanks and trucks. The mobility study recommended that 19 more roll-on/roll-off ships be added to the RRF.

RRF Readiness Has Improved Since the Persian Gulf War

MarAd has made significant progress in implementing changes to address problems encountered while activating RRF ships for the Persian Gulf War. It identified and corrected equipment deficiencies, instituted more uniform and comprehensive specifications for the deactivation and preservation of RRF ships, strengthened ship manager controls by expanding and clarifying the manager's contractual responsibilities, and developed and implemented automated information systems for tracking maintenance repairs. MarAd also initiated programs, such as assigning permanent, nucleus crews onboard high-priority ships to help maintain the RRF's material condition achieved after the war and alleviate crewing concerns. Total RRF program expenditures between fiscal years 1990 and 1993 were more than \$1 billion when Persian Gulf War activation and deactivation costs are included.¹

Recent activations of the RRF have demonstrated the ships' ability to meet readiness requirements and operate with fewer mechanical failures. These successful activations resulted largely from maintenance and repairs made during and after the war. In fact, activations without prior notice occurred an average of only 7 months after the ships had been deactivated from the war. However, continuing the present high readiness status of the RRF ships depends on MarAd's future budgets and maintenance strategies.

MarAd Has Addressed Wartime Problems

MarAd spent more than \$1 billion to resolve mechanical, management, and crewing problems encountered during Persian Gulf War activations. Problems targeted were the poor condition of the ships upon entry to the force; improper deactivation, as well as insufficient preservation and maintenance techniques; insufficient monitoring of ship manager companies; unknown, deferred, or unreported equipment deficiencies; and inadequate crewing. MarAd has made significant progress toward solving those problems.

Equipment Deficiencies Were Identified and Corrected

The war experience enabled MarAd to identify and repair equipment deficiencies at an average cost of \$5.5 million per ship. These repairs had been deferred because many of the ships had been laid up since being acquired for the RRF.² Many ships had been added to the RRF with many

¹This figure includes \$139 million to activate and \$296 million to deactivate the RRF during the war. In addition, MarAd was funded \$615 million during fiscal years 1990 through 1993 for RRF maintenance and operations.

²Before the war, RRF ships were maintained in an inactive status (known as lay-up) with all systems down, ship openings sealed, and interiors dehumidified. The ships received limited inspections and maintenance due to the inactive status of the machinery.

known and unknown machinery deficiencies, and MarAd lacked the funding at that time to activate, fully inspect, and repair many of the ships. In fact, prior to the war, only 34 ships had been activated since entering the RRF.

Preservation and Maintenance Techniques Were Improved

Improper deactivation and inconsistent preservation maintenance techniques for RRF ships contributed to mechanical problems encountered during war activations. Inadequate lay-up and maintenance techniques contributed to boiler problems, clogged pipe systems, freeze damage, and impurities in lubrication systems. After the war, MarAd instituted more uniform and comprehensive specifications for the deactivation and preservation of RRF ships. For example, to reduce corrosion in boiler tubes—a problem for steam-powered ships laid up in colder climates—some boiler panels are now left uncovered, and fans and heaters are installed to improve the circulation of dehumidified air to prevent freezing. These new techniques, however, have raised the cost of standard maintenance procedures.

Ship Manager Controls Were Strengthened

Some ship managers contributed to activation delays during the war because of their lack of capability. For example, two ship managers were unable to activate their ships due to their lack of knowledge. (These managers' contracts were subsequently canceled.) As a result of this and other contract management difficulties during the war, MarAd expanded and clarified ship managers' contractual responsibilities at an estimated annual cost increase of \$18,000 per ship. The new contracts raise the standards of technical competence, increase the number of technical employees per ship, clarify penalties, and emphasize monitoring ship manager performance.

Automated Maintenance Information Systems Were Developed

Before the war, RRF ship logs and machinery history records appear to have been randomly kept by the chief and port engineers. For example, according to MarAd officials during the war activation, one of five similar ships had recently had an engine overhaul, but MarAd personnel and ship managers were unsure which ship had been repaired. Up-to-date inventories of vital components and spare parts were also not available for the aging machinery on the RRF ships, which caused activation delays while some parts had to be manufactured and shipped to the activation sites.

After the war, MarAd implemented automated systems for tracking maintenance, repairs, and spare parts inventories. A Maintenance and Repair Tracking System has been developed by MarAd officials and contractors, and all repair funding requests must now be supported by deficiencies recorded in this system. Contractors have also developed an automated system for maintaining spare parts records and are completing inventories of shipboard spares to update the system's records. As of April 1994, MarAd had invested \$26 million in its new logistics program, and annual spare parts costs are estimated to be \$70,000 to \$80,000 per ship.

Ship Outporting Was Improved

The location of the RRF ships at the time of the war degraded the ships' ability to be activated within planned time frames. Every ship required some maintenance at a shipyard before reaching its designated loading seaport. Although half the RRF ships were outported—berthed at locations other than the three MarAd reserve fleet sites—they were not necessarily located near a shipyard. During activation for the war, the number of ships requiring simultaneous activation in a given location sometimes exceeded the capacity of the local shipyards. As a result, queuing occurred, and some ship activations were delayed.

When reassigning ships to a particular location, MarAd officials considered factors such as towing time; likely congestion in shipyards; and, for high-priority ships, transit times to likely seaports of embarkation. By fiscal year 1994, MarAd had reassigned most RRF ships accordingly. For example, 5- and 10-day ships have been better distributed according to shipyard facilities for activation, and the high-priority 4-day ships have been positioned closer to their ports of embarkation because they do not require shipyard services to be activated.

Key Personnel Are Being Assigned to Ships in Reduced Operating Status

To address the problems of identifying crews and transporting them to the ships in a timely manner, MarAd placed the highest priority ships in reduced operating status (ROS) with permanent, nucleus crews onboard.³ These crews form the core of the required operating crew, which ensures that key personnel needed for swift activation are onboard ships. According to MarAd, about 50 percent of the senior engineers and 34 percent of the junior engineers required by the RRF are already serving onboard ROS ships.

³The highest priority ships are roll-on/roll-off ships that are required to be ready to load military cargo at the seaport by day 4 of an activation.

The current crew structure on a ROS ship consists of a Chief Engineer; 1st, 2nd, and 3rd assistant engineers; a qualified member of the Engineering Department; an electrician; a chief mate; a bosun; a steward/cook; and a steward/utility. The crew's familiarity with the ship's particular operating systems and characteristics can avoid costly and time-consuming activation delays. For example, during the war, one newly assigned crew could not keep the steam propulsion system operating shortly after the ship had been loaded and left the port. The ship had to be towed back to port, where shipyard personnel that assisted in the ship's activation restored the system within 30 minutes. ROS crews could also help newly arriving crew members make the transition to a level of full competence on an unfamiliar ship.

Recent Activations Show That RRF Readiness Has Improved

Comparisons of recent activations to those during the war demonstrate that MarAd's efforts to improve readiness have been successful. Sixteen of the 20 ships we reviewed had been activated for the war and were an average of 11.6 days late. In 1993, some of those 20 RRF ships were activated earlier than Military Sealift Command or MarAd criteria; they were activated more quickly with fewer, less significant equipment failures and at less cost. Military Sealift Command, American Bureau of Shipping, and MarAd officials agree that the improved readiness of RRF ships is largely due to the extensive repairs made during and after the war.

Six of the 20 ships were activated without prior notice to test their readiness and therefore the tests were the most realistic tests of the RRF's ability to meet defense requirements. All six ships were activated on time or earlier than the time required, and the average cost to activate them was about \$1 million less than during the war. The ships had been inactive between 6 and 9 months, or an average of 7 months, before their unannounced activations. Tables 2.1 and 2.2 compare the time and cost for five of the ships activated without notice both in wartime and in 1993.⁴

⁴The sixth ship was not activated during the war.

Chapter 2
RRF Readiness Has Improved Since the
Persian Gulf War

Table 2.1: Comparison of the Persian Gulf War and 1993 Activation Times for Selected Ships

Ship	Wartime		1993	
	Status	Time to activate	Status	Time to activate
Cape Breton	5 day	5 days	5 day	4 days
Cape Inscription	5 day	5 days	4 day	3 days
Cape Isabel	5 day	11 days	4 day	3 days
Comet	5 day	15 days	4 day	3 days
Meteor	5 day	15 days	4 day	4 days

Table 2.2: Comparison of the Persian Gulf War and 1993 Activation Costs for Selected Ships

Dollars in millions

Ship	Wartime			1993	
	Activation cost	Deactivation cost	Number of months deactivated	Activation cost	Deactivation cost
Cape Breton	\$0.70	\$3.40	6	\$0.44	\$0.92
Cape Inscription	0.90	3.70	9	0.52	0.10
Cape Isabel	1.53	5.58	6	0.35	0.10
Comet	2.47	5.57	7	0.26	0.46
Meteor	2.00	4.01	7	0.48	0.35
Total	\$7.60	\$22.26		\$2.05	\$1.93
Average	\$1.52	\$4.45	7	\$0.41	\$0.39

For both the wartime and 1993 activations without prior notice, DOD reimbursed MarAd for activation and deactivation costs. Specific data that compares two of the five ships' recent tests and wartime activations follow:

- The Cape Isabel, a steam-powered ship, was built in 1976, added to the RRF in 1986, and laid up until its activation for the war in August 1990. During its wartime activation, the ship had many equipment failures in its boiler system, fuel system, evaporators, and service generator. After the war, MarAd spent almost \$5.6 million improving the ship's habitability and overhauling its steam engine and other major equipment. In 1993, the ship was activated without prior notice and, according to the after-action report, overall ship systems operated well during the activation and the sea trial.
- The Comet, a steam-powered ship built in 1958, was added to the RRF in 1985, and laid up until its wartime activation in August 1990. During this activation, the ship encountered numerous problems with its steam plant, ballast tank pumps and indicators, salt water service systems, electrical

equipment, and service generator. During postwar deactivations, MarAd spent almost \$5.6 million overhauling the ship. When the ship was activated without notice in 1993, no major deficiencies were reported during the activation or the sea trial.

The remaining 14 ships we reviewed were activated on less demanding schedules for either sea trials or operations. These activation costs were on average about \$0.6 million less than during wartime activations. Also, there were fewer and generally less critical equipment failures and fewer delays in making these repairs.

New Strategies to Sustain Readiness Depend on Funding Availability

MarAd has initiated RRF maintenance strategies that will sustain fleet readiness. These strategies combine various actions taken after the Persian Gulf War to solve activation problems at an annual cost of \$3 million for a 4- or 5-day ship compared with \$800,000 for an average ship before the war. MarAd believes that these strategies should provide reasonable assurance that MarAd can activate RRF ships within required time frames. Table 2.3 identifies the major components of MarAd's current maintenance strategies.

Table 2.3: Strategies for Maintaining Various RRF Readiness Levels

Major components	Readiness time frames		
	4 days	5 days	10 days
Number of ships ^a	36	27	39
Annual cost per ship (in millions)	\$3.12	\$3.09	\$2.15
Deactivation status	ROS	Fully laid-up	Fully laid-up
Location	Outported	Outported	Mostly at Reserve Fleet site
Crew size	10	2	0
Activation frequency	Annual sea trials	Annual dock and sea trials	Annual dock and sea trials
Performance of preventative maintenance	Continuously by the crew	Semiannually by industrial contractors	Semiannually by fleet personnel

^aThese numbers are based on DOD's Mobility Requirements Study. MarAd also plans to maintain 40 ships in a 20-day readiness status.

The ROS concept and the annual test activations are significant changes to the RRF maintenance program. MarAd cannot be certain that funding will be available in the future to continue all of its preferred maintenance

strategies and has begun examining variations within its overall RRF maintenance program. For example, MarAd assigned one 14-person crew onboard two roll-on/roll-off ships berthed together, and it is considering placing all 5-day ships in ROS with 9-person crews onboard.

MarAd's fiscal year 1994 RRF budget request submitted to the Congress for maintenance and operations was \$136 million, or approximately \$221 million less than the \$357 million identified in the Mobility Requirements Study. To make up this difference, only 11 of the designated 22 4-day ships currently have permanent, nucleus crews. Also, the number of planned maintenance test activations was reduced from 93 in accordance with mobility study standards to 32. MarAd officials concluded that reduced funding in fiscal year 1994 would not result in a great degradation of readiness. Although budget constraints are expected to continue, MarAd's fiscal year 1995 budget request includes \$246 million for maintenance and operations.

Conclusions

The readiness of the RRF has improved since the Persian Gulf War due to the \$1 billion invested in the program. Officials from the Military Sealift Command, American Bureau of Shipping, and MarAd agree that the satisfactory readiness of RRF ships is primarily due to the identification and repair of machinery deficiencies during and after the war. Despite this investment, however, these officials could not say how long the ships will stay as ready. They agree that continuing the present readiness status of RRF ships depends on MarAd's future budgets and maintenance strategies.

RRF Readiness Exceeds Other Deployment Components and Is Not Supportable

On the basis of DOD's 1992 Mobility Requirements Study, MarAd plans to keep 63 RRF ships in a high state of readiness (i.e., ready to activate within 4 or 5 days) starting in fiscal year 1996. However, this high state of readiness exceeds the Army's ability to transport heavy equipment, such as large vehicles, tanks, weapon systems, and helicopters, to seaports for initially deploying units. Army deployment operations are hindered in the continental United States by deteriorating transportation-related facilities and overseas by its limited ability to unload ships in underdeveloped seaports. Moreover, DOD's mobility study's recommendation to keep 63 RRF ships in a high readiness status is not justified by the detailed study analysis.

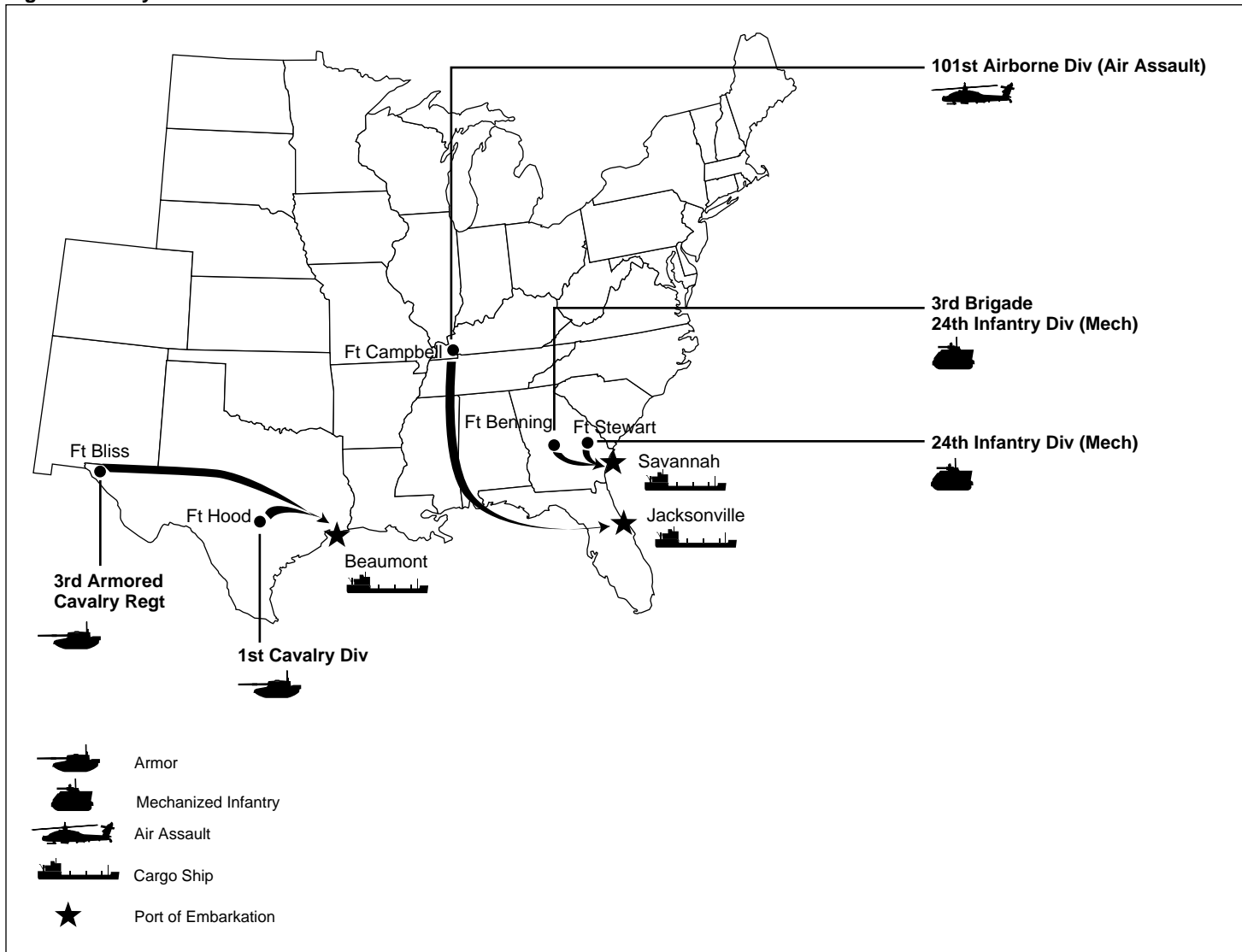
Deteriorated Infrastructure Constrains Army Operations

In the event of a large-scale contingency, the Army must be able to deploy heavy divisions rapidly from the continental United States.¹ These divisions are located at Fort Stewart and Fort Benning, Georgia; Fort Campbell, Kentucky; and Fort Hood and Fort Bliss, Texas. The movement of people, equipment, and supplies to ports of embarkation is the first stage of a major operation, called "fort to port" movement. Figure 3.1 displays the fort to seaport movement for selected heavy divisions.

¹Heavy divisions consist of the armored and mechanized units that are trained for mobile warfare and equipped with tanks and armored fighting vehicles.

Chapter 3
RRF Readiness Exceeds Other Deployment
Components and Is Not Supportable

Figure 3.1: Key Fort to Port Movements



Source: GAO.

We reported in 1992 that fort to port cargo movement during Operation Desert Shield was constrained by deteriorated rail facilities that could have threatened the Army's ability to move equipment to seaports rapidly.²

²Operation Desert Shield: Problems in Deploying by Rail Need Attention (GAO/NSIAD-93-30, Nov. 13, 1992).

Although the equipment reached the ports on time despite serious rail deficiencies, movement of equipment for Desert Shield was on a smaller scale and took a longer time than strategic mobility plans require today. Current deployment plans call for moving the same amount of cargo in 8 weeks that was moved during the first 6 months of the Persian Gulf War.

The Army has a plan that identifies needed improvements to the transportation infrastructure in the continental United States to meet the cargo flows assumed in DOD's mobility study. The Army's plan identifies improvement projects such as acquiring rail cars and upgrading or constructing facilities, highway, and rail networks and ports for receiving, storing, and loading Army equipment and supplies. These improvements are projected to cost about \$550 million and be funded through fiscal year 2001. As of August 1994, only \$28 million had been spent on these projects. At the Army's planned funding levels, some projects will take 15 to 20 years to complete and, therefore, will not be in place by the 1999 time frame assumed in the mobility study.

Army officials acknowledged that many infrastructure conditions remain essentially the same since the war. The deployment problems of three key contingency divisions and the improvements identified by the Army are discussed below. (The Mobility Requirements Study assumes that these three divisions are a part of an early response.)

- The 101st Airborne Division (Air Assault) deploys from Fort Campbell, which is approximately 630 miles from its seaport of embarkation in Jacksonville, Florida. The mobilization plan for this division relies heavily on the use of rail transportation. However, this method of transportation could not be used during Desert Shield because of deteriorated conditions and limitations of the Hopkinsville, Kentucky, rail interchange.

The Army has identified approximately \$23 million in infrastructure improvements that are necessary to meet the requirements in DOD's mobility study. Projects identified include rail upgrades, additional track (for a Hopkinsville bypass), and a pallet warehouse. In addition, 200 rail cars are to be acquired for Fort Campbell to execute the mobility plans. At the time of our review, none of the rail cars had been delivered.

- The 1st Cavalry Division deploys out of Fort Hood, which is about 320 miles from its seaport of embarkation in Beaumont, Texas. The division's mobilization plan calls for the lead brigade to move to this seaport by rail. However, the existing rail system at Fort Hood cannot support these deployment requirements, according to the Military Traffic Management Command's 1993 Engineering Study.

Infrastructure improvements totaling \$69 million have been identified. Projects include rail upgrades, additional tracks for storing and switching rail cars, a warehouse, and airfield upgrades. In addition, 512 rail cars are needed for prepositioning at this installation, but only 14 percent had been delivered at the time of our review.

- The 24th Infantry Division (Mechanized), stationed at Fort Stewart is only 40 miles from its designated seaport of embarkation in Savannah, Georgia. Fort Stewart was one of the first units during Desert Shield to transport large numbers of heavy tracked vehicles by rail. However, train speeds were restricted to 10 miles per hour or less, compared with 25 miles per hour under normal circumstances, because of deteriorated rail conditions.

Fort Stewart needs \$30 million in infrastructure upgrades and construction to meet deployment goals. Projects identified include rail passing tracks, a container handling facility, and a cargo staging area. Of the 220 rail cars needed to meet mobility requirements, 42 percent are currently located at the fort.

The Army believes that many infrastructure improvements have been accomplished that are necessary to support the initial surge units, as demonstrated by readiness exercises. The Army conducts these exercises to train heavy units in the continental United States on strategic deployment. However, only a portion of a division takes part in the exercises. For example, in September 1993, the Army conducted an exercise moving selected military equipment for a brigade task force of the 1st Cavalry Division from Fort Hood to Beaumont. The equipment used for this exercise only accounted for 474 of 1,975 pieces of the brigade task force. In 1994, the Army conducted a similar exercise with 900 pieces of equipment. Movement of an entire division has not yet been tested in the exercises to date.

Ability to Unload Ships Is Limited in Underdeveloped Overseas Ports

The Army's ability to meet its mobility requirements is also affected by its capability to deliver forces to underdeveloped or damaged overseas seaports. The Joint Logistics Over the Shore is a system of floating causeways that the Army can use to unload ships when the ships cannot enter a foreign seaport. As part of that concept, auxiliary crane ships will be used to unload RRF ships. Overall, the auxiliary crane ships are not kept in as high a readiness status as the surge cargo ships. Of the nine crane ships in the RRF, four are maintained in a 5-day status and five are maintained in a 10-day status.

The Army plans to unload equipment and supplies from ships within 48 hours of the ships reaching their overseas destination. A recent DOD Inspector General report determined that the Army would not be able to meet its 48-hour requirement if all the factors—including the ships' distances from shore, the ocean conditions, the number of crane ships available, and the number of watercraft (small ships, tugboats, and floating causeways)—were not optimal. Army officials are planning on improving the effectiveness of the Joint Logistics Over the Shore concept through training and additional acquisition.

Surge Sealift Requirements Are Not Supportable

The mobility study examined a range of potential crises, including regional wars in Europe, the Middle East, and Korea, in the 1999 time frame. The most logistically demanding scenario examined, because of the number of forces and the distances involved, was a major regional war in the Middle East. DOD used a model's³ results to support the study's recommendation that the RRF maintain 36 ships in 4-day status and 27 ships in 5-day readiness.

Our analysis of DOD's model for the Middle East scenario does not support the study's recommendation. The study's model assumed that 6 RRF roll-on/roll-off ships, not 36, would be needed at the seaports of embarkation by day 4 and that 8 other RRF ships, not 27, would be needed at the seaports by day 5. By the 10th day, the model assumed that only 36 ships would have arrived at the seaports. DOD officials could not explain the wide discrepancy between the model's data and the mobility study's recommendation; however, DOD officials confirmed that they believe this recommendation is still valid.

DOD is conducting another review of its strategic mobility requirements. This review will be based on the requirement from the October 1993

³The model applied was the Model for Inter-theater Deployment by Air and Sea.

Bottom-Up Review to fight two regional conflicts nearly simultaneously. DOD anticipates issuance of a report by January 1995.

In addition to DOD's ongoing mobility study, the Transportation Command is conducting an RRF modernization study. The objectives of this study are to determine the optimum RRF size, composition, and readiness to meet surge sealift requirements. The study's final recommendations will be submitted to DOD's Joint Staff/Transportation Command working group for inclusion in an update to the Bottom-Up Review report.

Conclusions

DOD's determination of the number of RRF ships it wants maintained at various readiness levels is overstated, given (1) the current ability of the Army to get from the forts to the ports and (2) the disparity between the output of the analytical model and the mobility study's recommendation. The results of DOD's updated mobility study should guide future RRF ship readiness levels.

Given these problems, we believe DOD needs to provide more realistic readiness requirements to MarAd. We recognize one lesson of the Persian Gulf War—RRF ships need to be more ready than they were at that time—however, we also believe that the government should not pay to keep an excess number of ships in a high-priority status.

Recommendation

We recommend that the Secretary of Defense direct the Commander in Chief, Transportation Command, to annually review RRF ship readiness requirements provided to MarAd and ensure that they are in line with current military deployment capabilities.

DOD Comments and Our Evaluation

DOD generally agreed with our findings and concurred with our recommendation to the Secretary of Defense. DOD stated that RRF readiness requirements are reviewed annually in cooperation with MarAd as part of budget reviews. DOD also noted that RRF readiness levels are currently being examined as part of the Mobility Requirements Study Bottom-Up Review Update.

DOD's comments are reproduced in appendix I.

Future Availability of Merchant Mariners Remains a Concern

MarAd and DOD agree that a viable U.S. merchant marine industry is the best source for mariners to crew the RRF in an emergency. However, future declines in the pool of U.S. mariners seem likely and would affect MarAd's ability to adequately crew these ships. The Department of Transportation has proposed legislation designed to help support the U.S. merchant marine industry. If, however, this legislation is not implemented or does not adequately support a mariner labor pool capable of providing enough mariners for the RRF, other measures will need to be taken. Both DOD and MarAd have studied the idea of a merchant marine reserve program to either supply or augment the required crew. Maritime labor unions, who are opposed to reserve programs, have proposed other alternatives, such as chartering commercially useful RRF ships to U.S. operators. DOD is also examining a proposal that has the potential of eventually increasing the available U.S. merchant marine labor pool.

RRF Crewing Requirements

The RRF currently requires around 3,700 mariners for 108 ships. To meet DOD's Mobility Requirements Study, the RRF will require approximately 4,800 mariners, as shown in table 4.1. DOD is currently reevaluating the size and composition of the RRF in an update of the Mobility Requirements Study. Once DOD determines the number and type of ships in the RRF, crewing levels in accordance with Coast Guard regulations and MarAd recommendations can be reestablished.

Table 4.1: Estimates of RRF Crewing Requirements to Meet DOD's Mobility Study Recommendations

Ship type	No. of ships	MarAd recommended crew size	Total crew requirement
Auxiliary crane	10	39	390
Breakbulk	48	34	1,632
Heavy lift	7	37	259
Roll-on/Roll-off	36	33	1,188
Troop	2	70	140
Tankers	36	33	1,188
Total	139		4,797

Source: DOD.

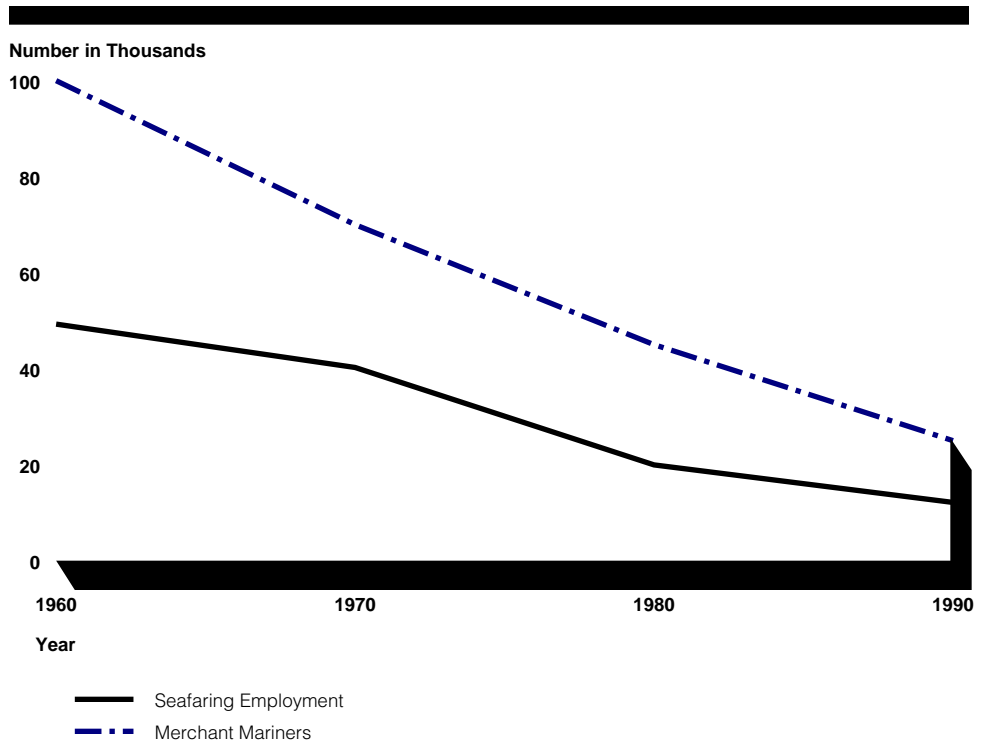
According to DOD, if the RRF crewing requirements remain about 4,800, and the U.S. merchant marine labor pool continues to decline, steps must be taken to ensure that an adequate pool of qualified mariners is in place.

U.S. Merchant Marine Pool Is Declining

Crews for the RRF come from the labor pool that exists to operate ships in the active U.S. commercial fleet. Each merchant mariner job supports about two mariners in the labor pool to allow for training, vacations, and job rotations. The U.S. commercial ocean-going labor pool, from which crew members are drawn, currently consists of about 21,000 mariners competing for about 9,300 shipboard jobs. Therefore, MarAd should not have a labor supply problem for crewing RRF ships in the near term.

Events in the maritime industry have had a direct impact on the potential crewing of RRF ships. During the 1960s, commercial ships registered in the United States typically went to sea with crews of more than 40 persons. The average crew size has since declined in response to labor-saving technology and automation. For example, the introduction of automated boiler controls during the mid-1960s and diesel-powered ships during the 1970s reduced crew size. As a result, the number of shipboard jobs decreased. For example, in 1970, the 843 ships in the U.S.-registered, ocean-going fleet provided around 40,000 jobs. By 1993, the number of ships had declined to 350, and only about 9,300 jobs were available. The gradual decline in the pool of qualified and available mariners needed for the RRF is shown in figure 4.1.

Figure 4.1: Decline in U.S. Merchant Mariners and Seafaring Employment for the Years 1960 Through 1990



Source: GAO.

Resolving Future Crewing Concerns

The Department of Transportation and DOD have conducted numerous studies that address the continued decline in the merchant marine industry. General and specific proposals have been suggested to aid the industry. Thus far, Transportation, DOD, and others involved, such as unions and ship operators, have been unable to reach consensus on specific programs or crewing alternatives. Therefore, action has not occurred.

1994 Maritime Security Program

Transportation has proposed legislation—the Maritime Security Program (H.R. 4003 and S. 1945)—to the 103rd Congress to help revitalize the U.S. Merchant Marine. The \$1 billion, 10-year program proposes subsidizing up to 52 U.S.-registered liner ships. One of the program’s goals is to provide additional sealift capacity for national emergencies. Therefore, this program would help maintain an active pool of U.S. mariners that can provide the necessary crews to operate RRF ships during an emergency.

However, the specific number of mariners the program may ultimately provide to RRF vessels is not known.

Expansion of Naval Merchant Marine Reserve

In 1986, the Navy examined crewing alternatives for the RRF and DOD sealift ships. One alternative was to expand the existing Merchant Marine Reserve component of the U.S. Naval Reserve. At that time, the Merchant Marine Reserve's purpose was to maintain an organization of merchant marine officers who were trained to operate merchant ships and a shoreside cadre assigned to naval activities supporting strategic sealift. The expanded program would include inactive, qualified mariners. The cost to implement this alternative was estimated to be \$10 million annually. The Congress directed Transportation to explore establishing a civilian reserve program.

Creation of a Civilian Reserve

In 1987, MarAd examined the concept of creating a civilian merchant marine reserve program.¹ Qualified mariners who were not actively sailing but were willing to commit themselves under contract for service when needed would form the base for this program. MarAd envisioned that the program would be comprised of 6,480 mariners and estimated its cost to be \$46 million a year. By 1991, MarAd had completed another study that included the concept of a civilian merchant marine reserve. MarAd studied four options that could increase mariner availability. These options ranged from a program with 500 members costing between approximately \$3 million and \$6 million annually to a program with over 2,000 mariners costing about \$19 million annually.

Studies completed after the Persian Gulf War also called for the need to consider a civilian reserve. For example, a 1991 Department of Transportation Inspector General report recommended that a civilian reserve program based on MarAd's 1991 study be implemented. In addition, a 1991 DOD and Transportation RRF working group report recommended that the agencies jointly pursue efforts to formulate a civilian merchant marine reserve program.

New Naval Reserve Units

In 1986, the Navy examined an alternative establishing specific new Naval Reserve units dedicated to manning all defense sealift ships. These units would be comprised of about 9,000 personnel who are members of

¹The Secretary of Transportation has the authority to establish and maintain a voluntary organization for the training of U.S. citizens to serve on U.S. merchant ships (46 App. U.S.C. 1295e).

existing naval reserve programs and naval retirees. The cost of this alternative was estimated to be \$46 million annually.

In 1988 and 1989, the Navy told the Congress a number of its concerns about the use of naval reservists for crewing RRF ships. The Navy stated that (1) naval reservists would not be available until DOD mobilization, even though RRF ships would most likely be requested to be activated before that time; (2) civilian mariners, not Navy reservists, have the expertise in operating RRF ships; (3) no training capability is currently available in the armed forces for training personnel to operate civilian ships; and (4) crewing RRF ships with naval reservists would change their noncombatant status under international law.

Maritime Labor Union Views

Maritime labor unions have opposed government efforts to establish any merchant marine reserve. They believe that a government reserve program would limit potential future jobs. They also believe that the potential implementation of any merchant marine reserve program shows a lack of support for the U.S. commercial merchant marine industry and that government funds should be directed toward aiding the maritime industry.

Maritime labor unions have proposed that commercially useful ships in the RRF be chartered to U.S. operators. This proposal would help maintain a trained and experienced crew available at no cost to the government. The chartered rate would be set at the market rate and would be reduced if there were no U.S.-flag competitors. The terms of the charter would include a guarantee that an operational ship would be made available to DOD when needed. However, because these ships would be engaged in active shipping, some ships would have to first unload cargo and then return to the United States when notified and, therefore, might not be available to help meet DOD's surge shipping requirements.

Another maritime labor union proposal is to develop a designated cadre of volunteers from within the ranks of the unions to be trained and available for surge call-up. This cadre would consist of three times the number of crew members required for RRF ships to account for mariners currently at sea and others not immediately available. DOD would set the standards for training, and mariners would receive 2 weeks paid training aboard RRF ships. The cost of training, mariner wages, subsistence, transportation, and ship activity would be provided by DOD, according to this proposal. The cost for this proposal was not provided.

Other Recent Proposals

At the RRF crewing workshop we sponsored in April 1994, MarAd presented an emergency crewing concept that would allow the unions time to assemble regular crews from the commercial sector. Under the proposal, teams of 10 to 15 inactive mariners would assist ships' managers to activate RRF ships. The activation teams would then step aside once union crews reported to the ships. If some mariners were not available from a union, then team members could be tasked to fill those slots. MarAd stated that 2,000 mariners would be needed for this program. MarAd estimated that the initial cost would be \$2.2 million and that the program would eventually cost around \$11 million annually. However, funding to develop this program was not approved in MarAd's fiscal year 1995 budget.

DOD is currently considering a concept to move Navy ships, such as oilers, combat stores ships, and salvage ships, into the Military Sealift Command. Civilian mariners could crew these ships, which is a practice the Military Sealift Command currently uses for crewing its fast sealift ships. This concept could result in an increase in the size of active mariner pool and therefore the number of mariners available to the RRF. The number of mariners that could become part of the active pool would depend upon the mariner-to-billet ratio used by the Military Sealift Command. This concept may also result in substantial Navy cost savings because civilian crews aboard Sealift Command auxiliary ships are generally smaller than Navy crews aboard ships assigned to Navy battle forces.

Conclusions

In 1986, the Chairman of the House Committee on Merchant Marine and Fisheries recognized the warning signs of a declining pool of mariners when he said that "inadequate manning is the Achilles heel of emergency sealift." The Persian Gulf War clearly demonstrated how vulnerable the RRF could be if sufficient numbers of properly skilled mariners are not available to sail when the ships are ready. However, since the war, little has been done to improve the likelihood that RRF ships will be adequately crewed in the future. Neither DOD nor MarAd has proposed alternatives that seem to garner universal consensus—including from the Congress, the Coast Guard, maritime unions, and ship operators. Our workshop was the first time many of these players were together discussing this issue.

Crewing the RRF will become a major problem as the pool of available mariners declines and the requirements remain stable or grow.

Recommendation

We recommend that the Secretary of Transportation direct the Maritime Administrator to annually assess whether an adequate number of experienced U.S. merchant mariners would be available to crew RRF ships within DOD's specified time frames. If these assessments indicate that the number of qualified mariners may not be sufficient, the Secretary should propose a specific merchant marine crewing alternative to the Congress.

Transportation Comments and Our Evaluation

Transportation partially concurred with our recommendation to annually assess the number of qualified U.S. mariners available to crew RRF ships and, if necessary, report crewing options. Transportation said it maintains maritime workforce statistics on the size and the composition of U.S. merchant mariners and that the Coast Guard is making progress toward improving the accuracy regarding availability of mariners. However, this information is not reported to the Congress in conjunction with defense requirements. We believe that MarAd's assessment would be an appropriate first step to define the effect that the declining U.S. merchant marine pool might have on national security.

Transportation said that the recommendation should focus on the need for reemployment rights legislation for U.S. merchant mariners if called upon to serve during a war or national emergency. It pointed out that reemployment rights were discussed in our workshop report. While Transportation acknowledged that consensus has not been achieved on certain proposals—such as a civilian merchant marine reserve or expansion of the naval merchant marine reserve—it believes that identified crewing proposals have the potential to achieve consensus. Transportation stated that our workshop was particularly beneficial toward providing a forum to meet this end. Transportation also noted that it is hopeful that its Maritime Security Program, designed to strengthen the U.S. merchant marine, will pass the Congress this fall.

We do believe that reemployment rights for U.S. mariners equivalent to the rights and benefits provided any member of a reserve component of the Armed Forces would be fair and equitable. However, the number of mariners who would be influenced to serve on RRF ships by this incentive is unknown and, therefore, the impact of such a program cannot be determined. In view of the continuing decline in the pool of U.S. mariners, we believe the central issue of how to crew RRF ships in the future has not been adequately addressed. Therefore, we believe that an annual assessment of the crewing issue could clearly identify specific actions needed to meet defense objectives related to sealift requirements. Further,

Chapter 4
Future Availability of Merchant Mariners
Remains a Concern

the Congress has considered legislation for reemployment rights three times, and has not approved it twice, and at the time of issuance of this report, passage was still uncertain as was Maritime Security Reform passage.

The full text of Transportation's comments is reproduced in appendix II.

Comments From the Department of Defense



ACQUISITION AND
TECHNOLOGY

OFFICE OF THE UNDER SECRETARY OF DEFENSE

3000 DEFENSE PENTAGON
WASHINGTON DC 20301-3000



3 October 1994

(L/TP)

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, entitled "READY RESERVE FORCE: Ship Readiness Has Improved, but Other Concerns Remain", dated August 17, 1994 (GAO Code 703002, OSD Case 9598-A). The DoD partially concurs with the report.

The Ready Reserve Force (RRF) is a vital element of our National Defense as it is the United States' largest source of surge strategic sealift capability. As recognized by the GAO, the DoD has made significant progress in addressing problems activating Ready Reserve Force ships for Operations Desert Shield/Desert Storm. The DoD has effectively identified and corrected equipment deficiencies, established uniform and comprehensive specifications for deactivation and preservation of RRF ships, strengthened ship manager controls, and implemented automated systems to track maintenance repairs.

The DoD has continued to assess and validate its ship deployment requirements through efforts such as the Mobility Requirements Study. The Department is currently reexamining the requirements included in that study based on results of the DoD Bottom Up Review and will consider further changes based on those results.

Although the Department has attempted to take actions to implement the recommendations and requirements identified in the Mobility Requirements Study, continuous funding reductions have impacted the ability of the DoD to meet those requirements. Those serious funding shortfalls have required the DoD to reprioritize RRF breakout availability, slip deployment infrastructure improvements, scale down required training exercises designed to test infrastructure throughput, stopped construction of seven Roll-On/Roll-Off ships, and hampered other DoD initiatives that would insure appropriate crewing for all

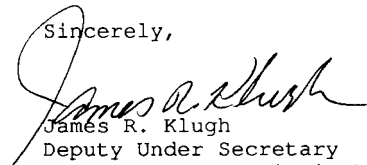


Appendix I
Comments From the Department of Defense

U.S.-flagged vessels in a time of contingency. The funding cuts, if continued, will cause the U.S. readiness posture within these areas to deteriorate to the level of readiness which was experienced prior to Operation Desert Shield/Storm.

The detailed DoD comments on the report findings and recommendations are provided in the enclosure. The DoD appreciates the opportunity to comment on the draft report.

Sincerely,



James R. Klugh
Deputy Under Secretary
of Defense (Logistics)

Enclosure

Appendix I
Comments From the Department of Defense

GAO DRAFT REPORT - DATED AUGUST 18, 1994
(GAO CODE 703002) OSD CASE 9598-A

"READY RESERVE FORCE: SHIP READINESS HAS
IMPROVED, BUT OTHER CONCERNS REMAIN"

DEPARTMENT OF DEFENSE COMMENTS

* * * * *

FINDINGS

- o **FINDING A: The Ready Reserve Force.** The GAO observed that the Ready Reserve Force (RRF) is a Government-owned, inactive fleet of former commercial ships of various configurations and capabilities. The GAO also observed that the Department of Transportation, through the Maritime Administration (MarAd), manages and maintains the RRF ships, and the Department of Defense (DoD) directs and controls operations once the ships have been activated. The GAO noted that the Military Sealift Command--under the Transportation Command--carries out DoD oversight and operational control responsibilities.

The GAO reported that, of the 96 ships that were in the RRF in August 1990, 78 were called to support the Persian Gulf War. The GAO noted that was the first large-scale activation and employment of the RRF since it was separated from the National Defense Reserve Fleet. According to the GAO, ship activations were not as timely as planned--only 25 percent of the activated ships met the assigned readiness goals. The GAO noted that a Department of Transportation Inspector General report attributed mechanical and crewing problems as the primary reasons the RRF ships were not able to meet specified activation times. (pp. 1-3, pp. 9-14/GAO Draft Report)

DoD RESPONSE: Concur. In no case was there a shortage of personnel in the merchant marine needed to man the RRF, and that remains the case today. Should the U.S.-flag merchant fleet decline in the future, the ability to crew RRF ships rapidly for contingency operations could become more difficult. To offset that possibility, DoD supports the legislation for reemployment rights, the U.S. Coast Guard personnel tracking system, and is examining military and civilian merchant marine reserve programs.

Enclosure

Now on pp. 10 and 11.

- o **FINDING B: Ready Reserve Force Readiness Has Improved Since the Persian Gulf War.** The GAO acknowledged that the MarAd made significant progress in resolving mechanical, management, and crewing problems encountered during the Persian Gulf War activations. The GAO pointed out that, for example, the MarAd identified and corrected equipment deficiencies, instituted more uniform and comprehensive specifications for the deactivation and preservation of RRF ships, strengthened ship manager controls by expanding and clarifying the manager's contractual responsibilities, and developed and implemented automated information systems for tracking maintenance repairs. The GAO mentioned that the MarAd also initiated programs, such as assigning permanent, nucleus crews onboard high-priority ships to help maintain the RRF materiel condition achieved after the war and alleviate crewing concerns.

According to the GAO, the MarAd has initiated RRF maintenance strategies that will sustain fleet readiness. The GAO noted that the strategies combine various actions taken after the Persian Gulf War to solve activation problems at an annual cost of \$3 million, compared with \$800,000 for an average ship before the Gulf War. The GAO pointed out that, however, the MarAd cannot be certain that funding will be available in the future to continue all of its preferred maintenance strategies and that the MarAd has begun examining variations within the overall maintenance program. (pp. 3-4, pp. 15-25/GAO Draft Report)

DoD RESPONSE: Concur. It should be noted, however, following Operation Desert Shield/Storm the DoD provided \$300 million to ensure proper maintenance of the 78 RRF vessels activated for the Gulf War. The maintenance was accomplished to prevent ship deterioration that had occurred prior to Operation Desert Shield/Storm due partially to the lack of sufficient funds to conduct proper maintenance when the ships were initially acquired.

For FY 1992 through FY 1994 operations and maintenance funding for the RRF has averaged \$170 million per year, which includes an average of \$30 million for MarAd personnel (operations/ overhead), \$6 million for the National Defense Reserve Fleet, and \$4 million for obtaining and upgrading outporting facilities. The average operation and maintenance funding averaged only \$1.23 million per ship. That level of funding has forced the United States Transportation Command (USTRANSCOM) to reduce the readiness level of high priority ships such as Roll-On/Roll-Off

(RO/RO) ships. For instance, the Mobility Requirements Study recommended that 36 RO/ROs be maintained in a four day readiness status. Of the 22 RO/ROs currently in the inactive RRF, only 11 are being maintained in a 4 day status.

- o **FINDING C: Deteriorated Infrastructure Constrains Army Operations.** The GAO reported that, on the basis of the DoD 1992 Mobility Requirements Study, the MarAd plans to keep 63 RRF ships in a high state of readiness--ready to activate within 4 or 5 days--starting in FY 1996. The GAO pointed out, however, that high state of readiness exceeds the ability of the Army to transport heavy equipment, such as large vehicles, tanks, weapon systems, and helicopters, to seaports for initially deploying units. The GAO concluded that Army deployment operations are hindered in the continental U.S. by deteriorating transportation related facilities, and overseas by limited ability to unload ships in underdeveloped seaports. The GAO noted that the DoD mobility study recommendation to keep 63 RRF ships in a high readiness status is not justified by a detailed analysis.

The GAO mentioned that its 1992 report (OSD Case 9115) reported that port to port cargo movement during Operation Desert Shield was constrained by deteriorated rail facilities, which could have threatened the ability of the Army to move equipment to seaports rapidly. In the current report, the GAO stated that, although the equipment reached the ports on time despite serious rail deficiencies, movement of equipment for Operation Desert Shield was on a smaller scale and took a longer time than strategic mobility plans require today--current deployment plans call for moving the same amount of cargo in 8 weeks that was moved during the first 6 months of the Persian Gulf War.

The GAO reported that the Army has a plan that identifies needed improvements to the transportation infrastructure in the continental U.S. to meet the cargo flows assumed in the DoD mobility study. The GAO noted that the Army plan is projected to cost about \$550 million and be funded through FY 2001. The GAO added that, at the planned funding levels, some Army projects will take 15 to 20 years to complete and, therefore, will not be in place by the 1999 time frame assumed in the mobility study. According to the GAO, the Army agrees that many infrastructure conditions remain essentially the same since the Persian Gulf War. The GAO discussed three key Army contingency divisions--the 101st Airborne Division (Air Assault), the 1st Cavalry Division, and the 24th Infantry Division (Mechanized)--and the

infrastructure improvements for each identified by the Army. The GAO indicated that the Army stated that many infrastructure improvements have been accomplished that are necessary to support the initial surge units--as demonstrated by readiness exercises. The GAO noted however, that movement of an entire division has not yet been tested in the exercises to date. (pp. 4-5, pp. 26-30/GAO Draft Report)

Now on pp. 21-24.

See comment 1.

DoD RESPONSE: Partially Concur. Due to funding constraints, the Army has had to establish priorities for critical MRS projects. The most critical projects for early surge forces are in the FY 1995 budget and early program years, with lower priority projects supporting follow-on force movement improvements in the out years. Those same funding constraints is the reason why the Army cannot exercise a full divisional Sea Emergency Deployment Readiness Exercise. Without additional funding for an exercise of this scope, brigade size exercises will be used to test fort to port infrastructure constraints.

The readiness status of the RRF should remain as recommended by the MRS. The RRF is a vital element of the national defense, since that force represents the largest source of U.S. strategic sealift capability. The Department is currently conducting a Mobility Requirements Study Bottom-Up-Review Update which will validate existing, or determine updated, mobility requirements. Concurrently, the USTRANSCOM is conducting a RRF modernization study to determine RRF requirements in view of changes in mobility assumptions which have occurred since publication of Volume I of the MRS. Most of those changes have resulted from the comprehensive review of U.S. defense strategy, force structure, modernization, infrastructure, and foundations conducted in the DoD 1993 Bottom-Up-Review. Some of the other changes have resulted from major airlift and sealift program acquisition delays and decisions. The U.S. TRANSCOM study will examine the RRF requirements for number of ships, composition, siting, and readiness. The results of the study are expected by first part of CY 1995, and will be combined with other Mobility Requirements Study Bottom-Up-Review Update analysis and used as a basis for the final integrated mobility plan.

- o **FINDING D: Ability to Unload Ships is Limited in Underdeveloped Overseas Ports.** The GAO reported that the ability of the Army to meet mobility requirements is also affected by the capability to deliver forces to underdeveloped or damaged overseas seaports. The GAO noted that

the Army plans to use auxiliary crane ships to unload the RRF ships when the Army cannot enter underdeveloped foreign seaports. The GAO added that the auxiliary crane ships are not kept in as high a readiness status as the surge cargo ships.

The GAO cited a recent DoD Inspector General report that determined that the Army would not be able to meet the Army plan to unload equipment and supplies from ships within 48 hours of the ships reaching their destination if all the factors--including the distances of the ships from shore, the ocean conditions, the number of crane ships available, and the number of watercraft--were not optimal. The GAO reported that the Army is planning to improve the effectiveness of the Logistics Over the Shore concept through training and additional acquisition. (pp. 31/GAO Draft Report)

Now on pp. 24 and 25.

See comment 2.

DoD RESPONSE: Partially concur. The auxiliary crane ships are considered high priority sealift vessels and several are intended to be maintained in a 5 day readiness status, which is comparable to other high priority surge sealift assets. An auxiliary crane ship currently is activated as part of the Afloat Prepositioning Force. Due to reductions in RRF funding, however, auxiliary crane ship readiness levels have been reduced proportionally along with other high priority sealift assets. There are other assets, such as the RO/RO discharge platform, which can be used to enhance capabilities of damaged or underdeveloped seaports.

As presently planned, the Army is proceeding to improve the Logistics Over-the Shore Concept based on the requirement as specified within the MRS through training and acquisition. The Logistics Over-the Shore and Joint Logistics Over-the Shore concepts and requirements are under review by the Joint Requirements Oversight Council. The review, which will be completed in first quarter of CY 1995, could redirect the overall acquisition initiative.

o **FINDING E: Surge Sealift Requirements Are Overstated.**

The GAO found that the DoD mobility study examined a range of potential crises, including regional wars in Europe, the Middle East, and Korea, in the 1999 time frame. The GAO reported that its analysis of the Middle East scenario shows that the recommendation of the study is not supported by the study model--for example, 6 RRF ships, not 36, would be needed at the seaports by day four, and 8 other RRF ships, not 27, would be needed by day five. According to the GAO,

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Comments From the Department of Defense

the DoD did not explain the discrepancy between the data and the study recommendation.

The GAO mentioned that the DoD is conducting another review (to be issued by January 1995) of the strategic mobility requirements--to be based on the requirement from the October 1993 Bottom-Up Review to fight two regional conflicts nearly simultaneously. The GAO added that the U.S. Transportation Command is also conducting an RRF modernization study to determine the optimum RRF size, composition, and readiness to meet surge sealift requirements. The GAO concluded that the DoD needs to provide more realistic readiness requirements to the MarAd. The GAO also concluded that, based on the lessons of the Persian Gulf War, the RRF ships need to be more ready than they were during the Gulf War and that the Government should not pay to keep an excess number of ships in a high-priority status. (pp. 31-33/GAO Draft Report)

Now on pp. 25 and 26.

See comment 3.

DoD RESPONSE: Nonconcur. The DoD does not agree that the study model does not support the study recommendation or that the surge requirements are overstated. Actually, present surge capability is well under actual requirements as stated in the MRS, and will remain so until 2001 when all of the Large Medium Speed RO/ROs (LMSR) are obtained by conversion or new construction and funding, which was taken out of the FY 1994 budget for 7 additional RO/ROs, is reinstated. Additionally, some existing RRF RO/ROs are presently deployed as interim Army afloat prepositioning assets and will not return to the RRF until delivery of the first five LMSRs in 1996 and 1997. Once the LMSRs are delivered, the readiness levels of some of the RRF ships may be adjusted. The status of high priority sealift assets such as the RO/ROs was addressed in the DoD response to finding "D".

DoD includes MarAd in all phases of contingency planning involving the RRF. DoD, with the Joint Staff and the U.S. Transportation Command, review, with MarAd on an annual basis, the funding required to meet established RRF readiness goals. The RRF readiness requirements are currently reviewed on an annual basis by the Joint Staff (J-4) and U.S. Transportation Command, in coordination with the MarAd. The RRF readiness levels are also being examined as part of the ongoing Mobility Requirements Study Bottom Up Review Update.

Current modeling of the MRS, Bottom-Up Review, and the Joint Military Net Assessment data bases continue to validate the assumptions within the MRS. It is necessary to look at the

demand pattern over the first several weeks of a deployment to establish the correct readiness levels. The ongoing review of mobility requirements suggests that moving selected surge sealift assets from a four day readiness status to between five and ten days provides a more exact match to port loading capabilities. Presently, demand patterns for ship arrivals in ports of embarkation are being reviewed carefully so as to not overstate or underestimate readiness requirements.

- o **FINDING E: The Future Availability of Merchant Mariners Remains a Concern.** The GAO reported that the MarAd and the DoD agree that a viable U.S. merchant marine industry is the best source for mariners to crew the RRF in an emergency. The GAO pointed out, however, that future declines in the pool of U.S. mariners seem likely and would affect the ability to adequately crew the ships. The GAO found that both the DoD and the MarAd have studied the idea of a merchant marine reserve program to either supply or augment the required crew.

The GAO indicated that the DoD is re-evaluating the size and composition of the RRF in an update of the mobility study. The GAO mentioned that the DoD is also examining a proposal that has the potential of increasing the available U.S. merchant marine labor pool. (pp. 34-36/GAO Draft Report)

DoD RESPONSE: Concur.

- o **FINDING G: Expansion of the Naval Merchant Marine Reserve.** The GAO found that the Department of Transportation and the DoD have conducted numerous studies to address the continued decline in the merchant marine industry. Regarding the DoD, the GAO reported that, in 1986, the DoD examined an alternative that was to expand the existing Merchant Marine Reserve component of the U.S. Naval Reserve.

The GAO explained that the new Naval Reserve units would be comprised of personnel who are already members of existing naval reserve programs and naval retirees. According to the GAO, in 1988 and 1989, the Navy told the Congress there were a number of concerns about using naval reservists for crewing RRF ships--(1) naval reservists would be unavailable until mobilization, (2) civilian mariners, not Navy reservists, have the expertise in operating RRF ships, (3) no training capability is currently available in the Military Services for training personnel to operate civilian

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ships; and (4) crewing RRF ships with naval reservists would change their non-combatant status under international law.

The GAO reported that the DoD is considering a concept to move Navy ships into the Military Sealift Command. The GAO explained that the concept could result in an increase in the size of the active mariner pool and, therefore, the number of mariners available to the RRF. The GAO concluded that, since the Persian Gulf War, little has been done to improve the likelihood that RRF ships will be adequately crewed in the future. The GAO also concluded that, even though the RRF crewing problem is not yet a national emergency, it could become one as the pool of available mariners declines and the requirements remain stable or grow. (pp. 37-42/GAO Draft Report)

DoD RESPONSE: Concur. The DoD is presently transferring Navy ships--Fast Combat Store Ships (AFS) and Ammunition Ships (AE)--to the Military Sealift Command that will be manned by Civil Service mariners.

* * * * *

RECOMMENDATIONS

- o **RECOMMENDATION 1:** The GAO recommended that the Secretary of Defense direct the Commander-in-Chief, Transportation Command, to annually review Ready Reserve Force ship readiness requirements provided to the Maritime Administrator and ensure that they are in line with current military deployment capabilities. (pp. 6-7, p. 33/GAO Draft Report)

DoD RESPONSE: Concur. The RRF readiness requirements are currently reviewed on an annual basis by the Joint Staff (J-4) and U.S. Transportation Command, in coordination with the MarAd. The RRF readiness levels are also being examined as part of the ongoing Mobility Requirements Study Bottom Up Review Update.

- o **RECOMMENDATION 2:** The GAO recommended that the Secretary of Transportation direct the Maritime Administrator to annually assess whether an adequate number of experienced U.S. merchant mariners would be available to crew Ready Reserve

Now on pp. 30-32.

Now on pp. 5 and 26.

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Now on pp. 5 and 32-33.

Fleet ships within the DoD specified time frames. (p. 6, p. 42/GAO Draft Report)

DoD RESPONSE: The DoD defers comment to the Secretary of Transportation.

The following are GAO's comments on the Department of Defense's (DOD) letter dated October 3, 1994.

GAO Comments

1. Our report acknowledges that the Army's strategic mobility program identified infrastructure improvement projects necessary to meet the cargo flow time frames required in DOD's mobility study. However, our main point is that the Army lacks the capability today to transport cargo from the fort to the port in sync with the RRF ship readiness. Further, our report notes given current funding levels, most infrastructure improvement projects will not be completed by the Mobility Requirements Study goal of fiscal year 1999. The additional concerns DOD expressed concerning readiness status are addressed in comment three.
2. Our report focuses on the Army's current ability to unload cargo at underdeveloped seaports rather than on the Army's intention to improve future capabilities.
3. After evaluating DOD's comments, we revised our caption for this section to more accurately reflect the narrative presented. DOD did not provide any additional data to explain the large disparity between our data analysis and the recommendation. DOD also stated that military judgment had been a factor in establishing the RRF readiness requirements but the ongoing strategic mobility review suggests that lower levels of readiness would provide a "more exact match to port loading capability." We agree.

Comments From the Department of Transportation



U.S. Department of
Transportation

Assistant Secretary
for Administration

400 Seventh St. S.W.
Washington, D.C. 20590

September 29, 1994

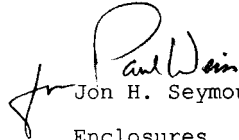
Mr. Frank C. Conahan
Assistant Comptroller General
U.S. General Accounting Office
441 G Street, N.W.
Washington, D.C. 20548

Dear Mr. Conahan:

Enclosed are two copies of the Department of Transportation's comments concerning the U.S. General Accounting Office draft report titled, "Ready Reserve Force: Ship Readiness Has Improved, but Other Concerns Remain."

Thank you for the opportunity to review this report. If you have any questions concerning our reply, please contact Martin Gertel on 366-5145.

Sincerely,


Jon H. Seymour

Enclosures

DEPARTMENT OF TRANSPORTATION REPLY
TO
GENERAL ACCOUNTING OFFICE (GAO) DRAFT REPORT
ON
**"Ready Reserve Force:
Ship Readiness Has Improved
but Other Concerns Remain"**

SUMMARY OF GAO FINDINGS AND RECOMMENDATIONS

The GAO draft report found that the Maritime Administration (MARAD) made significant progress improving ready reserve force (RRF) readiness and RRF ships can be made ready to sail within specified timeframes. The draft report indicated that MARAD had identified and corrected deficiencies, improved deactivation and preservation specifications, strengthened ship management controls, implemented an automated system for tracking maintenance, and implemented new strategies for maintaining high-priority ships.

The draft report recommends that the Secretary of Transportation direct the Maritime Administrator to annually assess whether an adequate number of experienced U.S. merchant mariners would be available to crew RRF ships within the Department of Defense's (DOD) specified timeframes. If these assessments indicate that the number of qualified mariners may not be sufficient, the Secretary should propose a specific merchant marine crewing alternative to the Congress.

DEPARTMENT OF TRANSPORTATION POSITION

The Department appreciates the GAO draft report's recognition of the substantial progress that MARAD has achieved in improving the RRF's readiness. These improvements have been accomplished due to the sustained efforts of MARAD's management and staff to produce and implement revised RRF policies and procedures. The report accurately states that MARAD's ability to continue the RRF's current readiness status depends largely on future maintenance and repair funding levels. The availability of adequate funding makes possible the use of reduced operating status (ROS) crews on high-priority ships, more frequent test activations, and adequate maintenance and repair (M&R) levels which are essential to ensure readiness of these vital surge sealift assets.

MARAD is actively pursuing initiatives related to crewing alternatives and has proposed reemployment rights for civilian seamen to gain improved access to qualified mariners. Reemployment rights, similar to those granted military reservists, are critical to help ensure that an adequate number of merchant mariners are available to crew

RRF ships. All U.S. seamen should be guaranteed reemployment rights at their private sector jobs if called upon to serve during a war or National emergency. These provisions were included in the Maritime Administration Authorization Act for Fiscal Year (FY) 1995. The draft report could benefit from a more complete description of the legislative progress that has been achieved concerning reemployment rights for civilian seamen and the benefits that could be derived from implementing such measures. Ensuring effective dialogue among the various Government, industry, and labor interests concerned with RRF crewing is also an important contributor to RRF readiness. MARAD is exploring the potential for convening an appropriate forum to establish consensus measures among Government, management, and maritime labor to ensure effective RRF crewing.

RESPONSE TO GAO DRAFT RECOMMENDATION

Recommendation: Annually assess whether an adequate number of experienced U.S. merchant mariners would be available to crew RRF ships within DOD's specified timeframes. If these assessments indicate that the number of qualified mariners may not be sufficient, the Secretary should propose a specific merchant marine crewing alternative to the Congress.

Response: Concur-in-part. The declining numbers of active merchant mariners has been researched and documented many times over the past several years. MARAD and the U.S. Coast Guard maintain maritime workforce statistics on the size and composition of the seafaring workforce which are updated frequently and available to the public. The Department is evaluating crewing alternatives and, as a first step, has proposed reemployment rights to the Congress for civilian seamen, which has passed the House three times in the past 2 years. Reemployment rights provisions were added to the Maritime Administration Authorization Act for FY 1995, H.R. 4003, which was passed on August 2, 1994.

As actions that fulfill the intent of the recommendation have been completed or are underway, we see no benefit to be gained by including this recommendation in the final report. However, as described in the final comment in the section on specific and technical comments, we offer an alternative to the recommendation for GAO's consideration.

SPECIFIC AND TECHNICAL COMMENTS

The Department offers the following specific comments regarding statements in the draft report.

- o Page 1, paragraph 1, sentence 4 - The figures are presumably from the Vol. 1 of DOD's Mobility Requirements Study (MRS) approved in January 1992. The MRS recommended \$3.973 billion for the RRF between FY 93 and FY 99 which

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represents 7 fiscal years rather than 6 as contained in the draft report. Of that amount, almost \$1.1 billion was planned for fleet expansion.

See comment 2.

- o Page 2, paragraph 2, sentence 2 - Suggest the sentence be rewritten to more accurately reflect equipment problems noted. Recommended revision: "The problems encountered while activating ships for the Persian Gulf conflict included numerous equipment failures caused by inadequate deactivations when the ships entered the RRF, varying preservation techniques, insufficient ship managers' controls, and a lack of detailed records to track maintenance activities within the fleet."

See comment 2.

- o Page 3, paragraph 3, sentence 2 - This sentence needs to be revised to reflect that rapid crewing of a large portion of the RRF has already presented problems. Recommended revision: "However, if the decline continues, MARAD's future ability to adequately crew these inactive ships in rapid fashion to meet DOD surge requirements is uncertain as was evidenced during the emergency activation of portions of the RRF during the Persian Gulf war."

See comment 2.

- o Page 4, paragraph 1, sentence 1 (follow-up from previous page) - The \$30 million expended on the six ships noted was for more than just repairs and the sentence should be revised to reflect this fact. Also suggest that \$7.6 million of the \$30 million not be included since it included emergency activation provisioning and other costs such as regulatory inspections in order to warrant ships operational. A large part of activation costs are for reassembling lay-up or deactivated equipment rather than upgrading material condition of ship. Recommend revision: "...deactivated from their service from the war and after over \$22 million had been spent on voyage repairs and to thoroughly lay-up all shipboard systems so that no known equipment deficiencies went uncorrected."

See comment 2.

- o Page 4, paragraph 3, sentence 1 - The \$3 million annual estimate is only for 22 of the highest priority ships, which were roll-on/roll-off (Ro/Ro) ships, placed into ROS-4 status and includes ship manager fees, outporting, test activation, crew, spares, and M&R. On a RRF fleetwide basis, the average annual cost per ship is about \$2.5 million. In addition, our data for the period FY 89-92 indicates the fleetwide average was close to \$920,000 per ship. Recommended revision: "...greater than before the war--\$2.5 million annually compared to about \$920,000 per ship annually."

Now on p. 10.
See comment 2.

- o Page 9, paragraph 1, sentence 3 - As of June 1994, the RRF contained only 96 ships not 108 ships as noted in report. Nine others (Ro/Ro's) were still in process of being upgraded to RRF status. Recommended revision: "As of June 1994, the RRF consisted of 96 ships with nine Ro/Ro ships in U.S. shipyards undergoing upgrading to RRF status."

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See comment 2.

Now on p. 11.
See comment 2.

Now on p. 11.
See comment 2.

See comment 1.

See comment 2.

See comment 1.

Now on p. 14.
See comment 1.

- o Page 10, paragraph 2, sentence 1 - For purposes of consistency suggest that sentence be revised indicating 79 ships were called upon to support the Persian Gulf war.
- o Page 10, paragraph 2, sentence 5 - Insufficient maintenance funding not only in 1990 as cited but also in FY 1988 and 1989 precluded our planned test activation program and resulted in deferred maintenance. This directly influenced the material condition of the overall fleet and was a contributing factor in the level of maintenance problems and crew inexperience with RRF ships encountered during the Persian Gulf activations. The Office of Inspector General (OIG) report reinforced insufficient maintenance funding as a major factor in late activations. Recommended revision: "Insufficient FY 1990 maintenance funding, which resulted in deferred maintenance and precluded test activations, has been cited as a major reason for many late activations. In fact, a Department of Transportation OIG report cited ships' mechanical and crewing problems as the primary reasons the RRF ships were not able to meet specified activation times."
- o Page 10, paragraph 3, sentence 1 - Recommend that listing item 3 be revised as previously noted to read "inadequate steps taken to deactivate...."
- o Page 11, paragraph 2, sentence 1 - Sentence as written is unclear. Recommended revision: "Mariners must report onboard activating ships within specified times and should be knowledgeable of the ships and their operating systems."
- o Page 13, paragraph 3, sentence 2 - In order to clarify 1992 buy relative to MRS recommendation, suggest sentence read as follows: "In our letter to the Maritime Administrator ...12 Ro/Ro ships for the RRF which partially fulfills the MRS recommended Ro/Ro capacity expansion for the RRF."
- o Page 13, paragraph 3, sentence 4 - Expected completion for Ro/Ro upgrade is November 1994 rather than August 1994.
- o Page 15, paragraph 1, sentence 4 - The RRF maintenance and operations expenditures between FY 90 and FY 93 totaled about \$615 million. This includes all program aspects except ship acquisition such as ship manager fees, outporting costs, program administration costs, test activations, spare part inventories and purchase, and ROS crew costs. As written, it implies that \$1 billion was only for "repairs and program changes...." Recommend revision: "Total RRF program expenditures between FY 1990 and 1993 were more than \$1 billion when Persian Gulf activation and deactivation costs are included. As stated previously, most activation costs are associated with reassembly of shipboard systems, not making repairs. During the later phases of this period, extensive voyage repairs and readiness enhancements such as the use of ROS crews, test activations, and accelerated spare parts procurement were initiated."

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Now on p. 14.
See comment 2.

Now on p. 14.
See comment 2.

Now on p. 14.
See comment 2.

Now on p. 15.
See comment 2.

See comment 1.

Now on p. 16.
See comment 2.

- o Page 15, footnote 1, sentence 2 - Recommend revised sentence read: "It also includes \$615 million during FY 1990 through 1993 for RRF maintenance and operations which provides for all program elements except fleet additions."
- o Page 16, paragraph 1, sentence 1 - Similar to other suggestions the \$1 billion was over four fiscal years and represented all RRF program costs including activation and deactivation, not just maintenance and repairs. Recommend revised sentence as follows: "Between FY 1990 and FY 1993 MARAD spent more than \$1 billion on RRF maintenance and operations, including expenses associated with Persian Gulf activations, voyage repairs after extended operations, and deactivations. Efforts were focused on enhancing vessel mechanical and equipment condition and resolving problems encountered during the Persian Gulf war activation delays."
- o Page 16, paragraph 2, sentence 1 - The \$5.5 million per ship figure includes activation and deactivation costs associated with vessels used in the Persian Gulf sealift. Activation expenses are largely to reassemble shipboard systems, provision the ship for extended operation, and complete necessary regulatory work. Deactivation includes voyage repairs as well as preparing ship for long-term lay-up and inactivity. Only a portion of the \$5.5 million per ship can be attributed to making equipment repairs and correcting deficiencies. It would be more accurate to include only deactivation expenses of about \$3.8 million per ship.
- o Page 17, paragraph 1, sentence 1 - To be consistent with other suggested changes and better reflect deactivation problems, suggest sentence begin with: "Inadequate deactivation and inconsistent..."
- o Page 17, paragraph 1, sentence 6 - The cited increase in cost for South Atlantic Region (SAR) ships from \$32.9 thousand in FY 90 to \$46.0 thousand in FY 94 is unclear. Suggest deleting sentence or revising to clarify what is included in the costs.
- o Page 18, paragraph 2, sentence 4 - The logistics program was initiated in FY 89 and the \$26 million investment was over five fiscal years to conduct complete parts inventories, establish allowances, and procure spare parts. Recommended revision: "As of April 1994, MARAD had invested a total of \$26 million in its logistics and spare parts program initiated in FY 1989. These expenses included conducting parts inventories on all RRF ships, establishing standard allowance lists, developing a parts tracking system, and procuring needed spare parts. In FY 1995, plans are to spend between \$70,000 and \$80,000 on high priority RRF ships for stocking of critical spare parts necessary to sustain 180 day operations. In order to minimize costs, MARAD is stripping spare parts from National Defense Reserve Fleet ships scheduled for scrapping and utilizing the resulting pool of spare parts as the first source of supply when filling deficiencies."

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Now on p. 19.
See comment 2.

Now on p. 20.
See comment 1.

Now on p. 27.
See comment 3.

- o Page 24, footnote a - MARAD has not been informed of readiness requirements for any additional tankers that might enter the RRF as referred to in RRF sizing figures in DOD's Vol. 1 MRS Study. Recommend footnote be revised to read: "These numbers are based on DOD's Mobility Requirements Study. MARAD currently maintains eight tankers in 20-day readiness status based upon DOD guidance. If additional ships are added to the RRF, DOD will determine the readiness level needed."
- o Page 25, paragraph 2 - The information in this paragraph no longer accurately reflects the FY 1994 experience. Also, the figures for the FY 1994 RRF maintenance requirements cited in Vol. 1 of MRS are not consistent with numbers on Page IV-4 of MRS Vol. 1. Recommended revision: "MARAD's FY 1994 maintenance and operations budget request including facilities improvements was \$140 million, or approximately \$217 million less than the \$357 million identified in the MRS. To make up the difference only 11 of the designated 22 4-day Ro/Ro ships were assigned permanent nucleus crews. Also, the number of planned test activations was reduced from 93 in accordance with MRS level standards to 32. In view of the FY 1994 maintenance funding shortfall, the readiness status of 2 breakbulk vessels was also downgraded to RRF-30 day after consultation and approval from DOD's transportation command (USTRANSCOM). MARAD officials concluded that reduced funding in FY 1994 will not result in a significant readiness degradation because all ships that participated in the Persian Gulf sealift were subject to extensive voyage repairs and thorough deactivation as well as the fact that seven RRF ships are participating in the Army AR-3 interim prepositioning effort. Although budget constraints are expected to continue, MARAD's FY 1995 budget request includes \$246 million for maintenance and operations."
- o Page 35, paragraph 2, sentence 4 - While in sheer numbers there may be a sufficient labor pool to currently crew the inactive RRF fleet, there remains the issue of getting them on short notice to adequately respond during DOD surge needs. Problems were encountered during the Persian Gulf sealift effort especially in critical ratings such as senior engineers and radio officers. We recommend that the paragraph be revised to reflect current need to facilitate MARAD's ability to tap the total population of qualified U.S. mariners as follows: "In order to address crewing problems encountered during the activation of RRF ships for the Persian Gulf war and to effectively deal with the projected number of U.S. mariners in the future, MARAD needs to be able to better tap and attract qualified mariners from both inactive and active sailing pools. Enactment of reemployment rights is an example of an on-going effort to increase the likelihood that qualified mariners who are currently not sailing will, in fact, come forward during a sealift emergency to man the RRF without jeopardizing their peacetime jobs. However, MARAD should also pursue initiatives to better utilize U.S. mariners actively sailing to crew RRF ships."

This involves enhanced cooperation between seafaring unions. These actions taken together will help assure that MARAD is in a better position to engage all those mariners cited in the report."

Now on p. 29.
See comment 3.

- o Page 37, paragraph 1 - The paragraph conveys the misleading impression that there is no consensus on programs for the merchant marine and crewing alternatives. Recommended revision: "Thus far, Government and the maritime industry have been unsuccessful in implementing programs and actions to stem the decline and stabilize civilian maritime employment. However, the Department of Transportation is hopeful that its Maritime Security Program, designed to strengthen the U.S. merchant marine, will pass Congress this fall. Separately, there is agreement on the need for U.S. civilian seamen's reemployment rights legislation and measures to increase responsiveness of the active and inactive maritime workforce."
- o Page 37, paragraph 2 - We strongly recommend another section be added after this describing the considerable efforts to enact reemployment rights legislation for merchant seamen, an initiative which has wide support among Government, management, and labor. The subject was covered in the GAO RRF Crewing Workshop study and is necessary in this report as well. Recommended revision:

Now on p. 29.
See comment 3.

Reemployment Rights Legislation for Merchant Seamen

Reemployment rights for U.S. civilian seamen was one of the principal recommendations based on the lessons learned during the Persian Gulf war. There were many mariners working in shoreside positions who indicated interest in serving on RRF ships during the Persian Gulf war. By guaranteeing reemployment rights, additional qualified merchant vessel personnel will be available to back-up the active workforce with crews for the RRF. The actual number and composition of licensed and unlicensed personnel, not sailing, who hold current Coast Guard documents is considerable. Since the end of DESERT SHIELD/DESERT STORM, principal Government and industry sectors have strongly supported legislation to establish the authority needed to implement a reemployment guarantee for merchant mariners similar to what is in place for military reservists.

The Vice President's National Performance Review singled out this subject as a priority action to achieve enhanced sealift crewing capability at no cost to the Federal budget. The Merchant Seamen Reemployment Rights Act of 1993 was first introduced as H.R. 1109 on February 24, 1993, and passed the House on March 16, 1993. The provision was added to the Government Reform and Savings Act of 1993, H.R. 3400, and again passed the House on November 20, 1993. On May 25, 1994, the provision was added to the Maritime Administration

Authorization Act for FY 1995, H.R. 4003, and again passed the House on August 2, 1994, this time as part of the maritime reform initiative. It is awaiting action in the Senate."

Now on p. 32.
See comment 3.

- o Page 41, second paragraph, last sentence - We suggest adding an additional paragraph to highlight the need for continuing dialogue as a means to close out this section. Recommended revision:

"Finally, there were several alternatives to enhance crewing for the RRF, discussed during the workshop, which warrant further consideration and review. Topics included refining RRF hiring contingency procedures, improving shoreside employed mariners' assessment and identification, utilizing existing maritime academies and industry schools for upgrading and refresher training, using RRF ships for short-term charters, enhancing the ROS crewing program, and providing a manning or advisory board to ensure equal access to labor sources. Support for continuing this dialogue was indicated and MARAD suggested a followup conference to be held in the fall."

Now on p.32.
See comment 3.

- o Page 41, last paragraph, last sentence - The GAO draft report conveys the misleading impression that there is no consensus on alternatives which will improve crewing capability for the RRF in the future. We acknowledge that consensus has not been achieved on certain proposals such as a "Civilian Reserve" or "Expansion of Naval Merchant Marine Reserve." However, this report could highlight and promote crewing alternatives that have achieved or demonstrated the potential to achieve consensus. In addition, significant progress has been made pursuing reemployment rights legislation. The GAO workshop on crewing report also contained several ideas for improving crewing responsiveness and shoreside personnel access where there appeared to be sufficient consensus to warrant continued dialogue. In this regard, the GAO workshop was particularly beneficial.

The report recommends an annual assessment of the workforce and that specific crewing alternatives be recommended to Congress. The history on this issue is replete with workforce studies and it is generally recognized that the active workforce would need to be supplemented in any substantial activation of the RRF. Also, the Secretary of Transportation has recommended reemployment rights for civilian seamen. Therefore, we recommend the following language to close out chapter 4 together with the matter for congressional consideration in place of the recommendation to the Secretary.

However since the Persian Gulf war, ... in the future. However, there is a strong consensus for reemployment rights legislation that was recommended at the close of the Persian Gulf war. The need for this measure increases as the U.S. merchant marine workforce continues to decline in numbers. There is also the need to continue the dialogue that was generated by our workshop earlier

**Appendix II
Comments From the Department of
Transportation**

this year which was the first time many of these players were brought together to discuss in depth the problem of crewing the RRF. Even though the RRF crewing problem is not yet a national emergency, it clearly will become one as the pool of available mariners declines and the requirements remain stable or grow.

MATTER FOR CONGRESSIONAL CONSIDERATION

We recommend that the Congress act to ensure that seamen are guaranteed reemployment rights at their private sector jobs if called upon to serve during a war or National emergency.

**Appendix II
Comments From the Department of
Transportation**

The following are GAO's comments on the Department of Transportation's letter dated September 29, 1994.

GAO Comments

1. Our final report has been modified to reflect Transportation's specific and technical suggestions.
2. After evaluating Transportation's comments and verifying our sources, we believe the facts are accurately presented. We did not change our final report.
3. Our commentary concerning the reemployment rights issue are found on pages 33 and 34. .

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Appendix III
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Related GAO Products

The National Defense Reserve Fleet—Can It Respond to Future Contingencies? (GAO/LCD-76-226, Oct. 6, 1976).

A Time to Consider Alternative Sources of Quick-Response Sealift Capability (GAO/LCD-78-244, Feb. 7, 1979).

Navy Sealift: Observations on the Navy's Ready Reserve Force (GAO/NSIAD-86-168, Aug. 18, 1986).

Army Deployment: Better Transportation Planning Is Needed (GAO/NSIAD-87-138, June 18, 1987).

Industry Concerns Regarding the Policies and Procedures of the Military Sealift Command (GAO/T-NSIAD-88-40, Aug. 8, 1988).

Part of the National Defense Reserve Fleet Is No Longer Needed (GAO/T-NSIAD-91-44, July 11, 1991).

Strategic Sealift: Part of the National Defense Reserve Fleet Is No Longer Needed (GAO/NSIAD-92-3, Oct. 7, 1991).

Desert Shield/Storm: U.S. Transportation Command's Support of Operation (GAO/NSIAD-92-54, Jan. 9, 1992).

Shipbuilding: Navy's Plan to Acquire Additional Strategic Sealift (GAO/NSIAD-92-224, July 30, 1992).

Operation Desert Shield: Problems in Deploying by Rail Need Attention (GAO/NSIAD-93-30, Nov. 13, 1992).

DOD's Mobility Requirements: Alternative Assumptions Could Affect Recommended Acquisition Plan (GAO/NSIAD-93-103, Apr. 22, 1993).

Management Reform: GAO's Comments on the National Performance Review's Recommendations (GAO/OGC-94-1, Dec. 3, 1993).

Letter to the Maritime Administrator (GAO/NSIAD-94-96R, Jan. 7, 1994).

Strategic Mobility: Serious Problems Remain in U.S. Deployment Capabilities (GAO/T-NSIAD-94-165, Apr. 26, 1994).

Related GAO Products

Strategic Sealift: Summary of Workshop on Crewing the Ready Reserve Force (GAO/NSIAD-94-177, June 6, 1994).

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