

AD-A236 513



2

NAVAL WAR COLLEGE
NEWPORT, R.I.

STRATEGIC SEALIFT FOR DESERT SHIELD
NOT A BLUE PRINT FOR THE FUTURE

by

CARL T. BRIGHT
LCDR SC USN
and
SHARON R. HALE
LCDR SC USN

A paper submitted to the Faculty of the Navy War College in partial satisfaction of the requirements of the Department of Operations.

The contents of this paper reflect our own personal views and are not necessarily endorsed by the Naval War College or the Department of the Navy.

Signature: *Carl T. Bright*

21 June 1991

Sharon R. Hale

Paper directed by
Theodore L. Gatchel, COL, USMC
Chairman, Department of Operations

Approved for	
111-00001	✓
DTIC DS	
Unrestricted	
Justification	
by	
Distribution	
Approved by	
Justification	
by	
Distribution	



A-1

REPORT DOCUMENTATION PAGE

1a. REPORT CLASSIFICATION UNCLASSIFIED			1b. RESTRICTIVE MARKINGS	
2a. SECURITY CLASSIFICATION AUTHORITY			3. DISTRIBUTION/AVAILABILITY OF REPORT DISTRIBUTION STATEMENT A: Approved for public release; distribution is unlimited	
2b. DECLASSIFICATION/DOWNGRADING SCHEDULE			5. MONITORING ORGANIZATION REPORT NUMBER(S)	
4. PERFORMING ORGANIZATION REPORT NUMBER(S)			7a. NAME OF MONITORING ORGANIZATION	
6a. NAME OF PERFORMING ORGANIZATION OPERATIONS DEPARTMENT		6b. OFFICE SYMBOL (if applicable) C	7b. ADDRESS (City, State, and ZIP Code)	
6c. ADDRESS (City, State, and ZIP Code) NAVAL WAR COLLEGE NEWPORT, R.I. 02841			9. PROCUREMENT INSTRUMENT IDENTIFICATION NUMBER	
8a. NAME OF FUNDING/SPONSORING ORGANIZATION		8b. OFFICE SYMBOL (if applicable)	10. SOURCE OF FUNDING NUMBERS	
8c. ADDRESS (City, State, and ZIP Code)			PROGRAM ELEMENT NO.	PROJECT NO.
			TASK NO.	WORK UNIT ACCESSION NO.
11. TITLE (Include Security Classification) STRATEGIC SEALIFT SUPPORT FOR DESERT SHIELD-NOT A BLUEPRINT FOR FUTURE (U)				
12. PERSONAL AUTHOR(S) CARL T. BRIGHT, LCDR SC USN and SHARON R. HALE, LCDR SC USN				
13a. TYPE OF REPORT FINAL		13b. TIME COVERED FROM _____ TO _____		14. DATE OF REPORT (Year, Month, Day) 1991 February 11
15. PAGE COUNT 40				
16. SUPPLEMENTARY NOTATION A paper submitted to the faculty of the Naval War College in partial satisfaction of the requirements of the Department of Operations. The contents of this paper reflect my own personal views and are not necessarily endorsed by the Naval War College or the Department of the Navy.				
17. COSATI CODES			18. SUBJECT TERMS (Continue on reverse if necessary and identify by block number)	
FIELD	GROUP	SUB-GROUP	STRATEGIC SEALIFT SUPPORT FOR DESERT SHIELD	
19. ABSTRACT (Continue on reverse if necessary and identify by block number) Although there have been several huge successes in the strategic sealift campaign in support of Desert Shield and Desert Storm, it is far from a blueprint for future contingencies. Shortfalls and lessons learned highlight strategic sealift as a continuing weak link in support of U.S. Navy Maritime Strategy. This research examined the Strategic Mobility Policy of the Department of Defense in the 1980's. It discusses the capabilities, limitations and effectiveness of the components of strategic sealift (Maritime / Afloat Prepositioning, Fast Sealift, Naval Defense Reserve Fleet and Ready Reserve Force) and their utility for future contingencies. There is small discussion on the impact of the decline of the Maritime industry on strategic sealift. In order to provide adequate sealift for future contingencies, The Strategic Mobility Policy for sealift should be modified to expand the Afloat Prepositioning Program to include Army equipment, Reduce the National Defense Reserve Fleet and revitalize the Merchant Marine Industry.				
20. DISTRIBUTION/AVAILABILITY OF ABSTRACT ☒ UNCLASSIFIED/UNLIMITED ☐ SAME AS RPT. ☐ DTIC USERS			21. ABSTRACT SECURITY CLASSIFICATION UNCLASSIFIED	
22a. NAME OF RESPONSIBLE INDIVIDUAL Chairman, Operations Department			22b. TELEPHONE (Include Area Code) 841-3414	22c. OFFICE SYMBOL C

Abstract of
STRATEGIC SEALIFT SUPPORT OF DESERT SHIELD
NOT A BLUEPRINT FOR THE FUTURE

Although there have been several huge successes in the strategic sealift campaign in support of Desert Shield and Desert Storm, it is far from a blueprint for future contingencies. Shortfalls and lessons highlights strategic sealift continuing weak link in support of U.S. Navy Maritime Strategy. This research examined the Strategic Mobility Policy of the Department of Defense in the 1980's. It discusses the capabilities, limitations and effectiveness of the components of strategic sealift (Maritime/Afloat Prepositioning, Fast Sealift, Naval Defense Reserve Fleet and Ready Reserve Force) and their utility or future contingencies. There is small discussion on the impact of the decline of the Maritime industry on strategic sealift. In order to provide adequate sealift for future contingencies, The Strategic Mobility Policy for sealift should be modified to expand the Afloat Prepositioning Program to include Army equipment, reduce the National Defense Reserve Fleet and revitalize the Merchant Marine Industry.

91-01551



11

91 6 7 058

TABLE OF CONTENTS

TITLE	PAGE
ABSRTACT.....	ii
I. INTRODUCTION.....	1
II. BACKGROUND.....	2
III. MARITIME AND AFLOAT PREPOSITIONED FORCES.....	3
IV. FAST SEALIFT SHIPS.....	8
V. READY RESERVE FORCE.....	13
VI. NATIONAL DEFENSE RESERVE FLEET.....	20
VII. BLUE PRINT FOR THE FUTURE.....	21
VIII. CONCLUSIONS.....	26
APPENDIX I--TOTAL NUMBER OF SEALIFT SHIPS USED AS OF	28
II--SEALIFT TIME LINE.....	29
III--MPF MEB.....	31
IV--MAJOR ORGANIZATIONS PARTICIPATING IN ACTIVATION...	32
V--ACTIVATIONS (RRF).....	33
NOTES.....	35
BIBLIOGRAPHY.....	37

I. INTRODUCTION

On August 7, 1990 President Bush moved to counter the aggression of Iraqi President Saddam Hussein and protect the vital interest of the United States in the Persian Gulf. In launching Operation Desert Shield, President Bush initiated the most intense forward deployment of American military forces since World War II. The bulk of the responsibility for the success of Operation Desert Shield was thrust upon the two newest unified commands, U.S. Central Command (USCINCCENT) established in 1983 and U.S. Transportation Command (USTRANSCOM) established in 1987.

U.S. Central Command replaced the Rapid Deployment Force and is the newest war fighting command protecting U.S. interest in Southeast Asia. The U.S. Transportation Command established by the Goldwater Nichols Act provides global air, land and sea transportation to meet National Security Objectives.

This paper will focus on Strategic Sealift provided by USTRANSCOM and its component command, the Military Sealift Command (MSC) for Operations Desert Shield and Desert Storm.

Although there have been several huge successes in the strategic sealift campaign in support of Desert Shield and Desert Storm, it is far from a blueprint for future contingencies. Shortfalls and lessons learned highlight strategic sealift as a continuing weak link in support of United States Navy Maritime Strategy.

Due to the on going nature of Desert Storm, operational security and tempo made access to certain information and key personnel impractical. This included USCENCOM's Operational Plan

90-1002. The modified contingency plan for a full scale deployment to the Persian Gulf. As such we have drawn some general conclusions about some events. Additionally, in an effort to obtain honest and candid answers without breaching operational security most telephone and personal interviews were held on a non-attributable basis. However, we feel that there was enough information available to assess the effectiveness of strategic sealift for Desert Shield and Desert Storm and make creditable recommendations for future support.

This research examined the Strategic Mobility Policy of the Department of Defense in the 1980's. It discusses the capabilities, limitations and effectiveness of the components of strategic sealift (Maritime/Afloat Prepositioning, Fast Sealift, Naval Defense Reserve Fleet (NDRF) and Ready Reserve Force (RRF)) and their utility for future contingencies. It also focuses on the impact of the decline of the United States Maritime Industry on strategic sealift and the small role it has played in Operations Desert Shield and Desert Shield.

II. BACKGROUND

The inability of U.S. TRANSCOM to provide the strategic lift necessary to meet the requirements of CENTCOM's OPLAN 90-1002 was no surprise. Our National Security policy relies heavily on the Maritime industry to meet strategic sealift requirements in a crisis. It is estimated that 95 percent of all dry cargo and 99

percent of all petroleum products will be delivered by sea.¹ However, the state of the Maritime industry and our ability to meet no more than 80 percent of the strategic sealift requirements with U.S. resources is well documented. Appendix I lists the total number of Sealift Ships used as of February 8, 1990. Appendix II provides a Sealift Time Line for types of sealift ships used for Phases I and II.

During the past two decades the U.S. Merchant Marine Fleet has dwindled from 893 U.S. flagged merchant ships to 367 today. In the last decade billets for the number of merchant seamen have fallen from 20,000 to 13,000.² The report of the Commission on Merchant Marine and Defense dated September 30, 1987 stated:

"There is insufficient strategic sealift, both in ships and trained personnel; for the United States, using only it's own resources as required by defense assumptions, to execute a major contingency operation in a single distant theater, such as Southeast Asia."

To counter this decline and the unwillingness or inability of Congress, the past and present Administrations and the Maritime Industry to resolve this trend, the Department of Defense (DOD) and the Navy invested billions of dollars in a small Navy owned sealift fleet.

III. Maritime and Afloat Prepositioned Forces

The Maritime and Afloat Prepositioned Forces proved to be the real star of the strategic sealift campaign. It validated

the concept of afloat prepositioning of equipment and supplies, and justified the significant investment in the program.

Maritime prepositioning had its genesis 11 years ago in a gathering of Marine Corps Officers at Camp Le Jeune, North Carolina. Their purpose was to find a solution to the Carter Administration Doctrine that declared the Middle East an area of vital interest to the United States. However, moderate and friendly Middle East countries held no interest in hosting permanently stationed United States military forces.³ The solution was controversial. The idea of storing precious equipment aboard ships stationed around the world was a bitter pill to swallow for many military experts. The cost of the ships, and crews in addition to the enormous cost of military equipment and supplies made the idea undesirable.

A. Capabilities

Currently there are 25 ships in the Prepositioned Forces. Thirteen Maritime Preposition Ships (MPS) are loaded with Marine Corps Unit equipment and supplies. Twelve Afloat Preposition Force (APF) ships are loaded with Army and Air Force support equipment and supplies, along with a deployable Navy Field Hospital. Each of the 12 Maritime Prepositioning Ships is appropriately named for a Marine Corps medal of honor winner. They are divided among three mps squadrons that carry a spread load of Marine Corps unit equipment and supplies. MPS One is

composed of four ships deployed in the Atlantic. MPS Two is composed of five ships in the Indian Ocean operating out of Diego Garcia. MPS Three is composed of four ships in the Guam/Saipan area of the western Pacific. Eleven APF ships operate out of Diego Garcia in the Indian Ocean. One APF ship operates in the Mediterranean.⁴

The prepositioned ships have the shortest contingency response time. They are maintained in a high state of readiness and must get underway within 12 hours of notification. If at sea, can be diverted toward their destination immediately. Each ship is manned by two full civilian crews that rotate every four months. This arrangement provides an extra crew of trained merchant seamen to man additional ships in a crisis. Each MPS Squadron stores and maintains the unit equipment and 30 days of support for a Marine Expeditionary Brigade (MEB) of approximately 16,500 troops (see appendix III). Being forward deployed they can respond to a variety of contingency requirements that do not require forced entry. The sustainability, flexibility, short response time of this force makes it a capable and valuable component of national defense. Once the prepositioned ships have delivered their cargo they become a part of the strategic sealift surge and sustainment effort. The MPS Squadron have a Navy Support Element that included the Squadron Commander and his staff. They get underway each month and participate in exercises with their associated MEB on an average of one per year.

B. Limitations

There are few limitations to the capabilities and usefulness of the Maritime and Afloat Prepositioned forces. The forward deployment and high value of the MPS and APF cargo make them a likely target for terrorist or a preemptive strike by a potential belligerent. The tour of duty for members of the Naval support element is one year. Without follow on tours there is very little opportunity to build a level of expertise with the Maritime Prepositioned Forces (MPF). Also, the assigned civilian crews rotate every four months. Although they have frequent underway periods a Maritime Prepositioned Squadron usually participated in an amphibious exercise only once a year.

A contingency operation that requires the MPF to deploy immediately may preclude the arrival of the advance contingent of Marines necessary to prepare unit equipment and vehicles for immediate debarkation upon arrival in theater. These tasks include powering batteries, filling fuel tanks, mounting machine guns, etc.

Prior to Operation Desert Shield, the cost of establishing and maintaining prepositioned contingency forces of this nature was a budgetary issue. Especially in light of events in Europe and the current budget environment.

C. Evaluation of Effectiveness

Ten years after the first ships of the Military Sealift Command's Afloat and Maritime Prepositioned Forces arrived on station at the forward operating area, the concept of prepositioning was validated with resounding success. Within hours of receipt of orders to get underway on August 8, 1990, the ships of MPS Squadrons Two and Three along with nine ships of the Afloat Prepositioning Force were enroute to the Persian Gulf. Three of the ships which comprise MPS squadron two (MV 1st LT Alexander Bonneyman, MV CPL Louis J. Hauge Jr. and MV PFC James Anderson Jr), under the command of CAPT Richard A. Crooks, USN sailed from the lagoon at Diego Garcia on August 8. Seven days later, on August 15, 1990, they were berthed in Saudi Arabia being off loaded by their Navy support element.

Two MPS Squadrons Two ships were off station. The MV PVT Harry Fisher off the west coast of Africa enroute to Florida for a routine maintenance cycle, reversed course and arrived in the Gulf on August 24, 1990. The MV PFC William E. Baugh was undergoing a maintenance cycle in Florida, arrived in the Gulf on September 5 via the Suez Canal.

MPS Squadron Three. (MV 1st LT Jack Lummas, MV 1st LT Baldomero Lopez and MV PFC Dwayne T. Williams) commanded by Capt. Charles E. Aaker, USN, also got underway on August 8, from the Guam/Saipan area for the Persian Gulf. They refueled in Singapore, embarked its Naval Support element and arrived in

Singapore, embarked its Naval Support element and arrived in Saudi Arabia August 25, 1990. MV SGT William Button, which had recently participated in exercise Freedom Banner 90 in Washington, was scheduled to proceed to Florida for a maintenance cycle, sailed for the Gulf and arrived four days after the other three ships.⁵

MPS Squadron Two was matched up with the 7th Marine Expeditionary Brigade (MEB) and established ashore under the operational command of Commander U.S. Marines Central Command (COMUSMARCENT) August 25, only 17 days after sailing from the Indian Ocean. MPS Squadron Three was matched up with 1st MEB, 3rd Marine Air Wing (MAW) and established ashore under the operational command of COMUSMARCENT eight days later on September 2, 1990. Maritime Prepositioned Ships were being released to common-user Sealift as early as 27 August 1990, 19 days after receiving orders to sail for the Gulf.

Nine of the twelve ships of the Afloat Prepositioning Force departed the lagoon of Diego Garcia at 15 minute intervals on the afternoon of August 9, 1990. MV American Cormorant, SS American Kestral, SS Austral Rainbow, SS overseas Alice, USNS Sealift Pacific, SS Green Harbour, SS Green Island, SS Santa Victoria and SS Noble Star arrived in the Persian Gulf on 17 August 1990 delivering tens of thousands of tons of cargo for US Army and Air Force units ashore. The MV Advantage sailed from her normal operating area in the Mediterranean to the Red Sea. The tankers SS overseas Alice and USNS Sealift Pacific

began conducting underway fuel replenishment in the Gulf of Oman and Red Sea respectfully. The other prepositioned Tankers, SS overseas Vivian and SS overseas Valdez were already at sea and sailed for Bahrain. Both tankers received orders to conduct operations in the North Arabian Sea.⁶

Upon the implementation of Phase II of the deployment to the Gulf by President Bush. MPS Squadron One was ordered to the Gulf on November 14, 1990 to match up with the 6th MEB. It displayed the same level of efficiency upon deployment as Squadrons Two and Three had displayed before it.

The investment made in Maritime and Afloat Prepositioned assets paid off handsomely. The ships of MPS Squadron Two were docked in Saudi Arabia and unloading unit equipment for the 7th MEB, a full day before the first of the fast sealift ships departed Savannah, Georgia with equipment of the 24th Mechanized Infantry Division. Readiness always has a price. In the case of prepositioned afloat assets, it is money well spent.

IV. Fast Sealift Ships

The Military Sealift Command's Squadron of eight fast sealift are the fastest such merchant ships on the sea. These former U.S. flag container ships are capable of 33 knots and have the largest cargo capacity of any ships in MSC's inventory.

Commonly referred to as SL-7's, they were manufactured in European Shipyards as container ships for Sea Land Services

the price of oil after the 1972 Arab oil embargo made them uneconomical to operate on a commercial basis. The SL-7's were acquired from Sea Land by the U.S. Navy in the early eighties. They were converted in U.S. shipyards to military useful roll-on /roll-off capability at a relative inexpensive cost of \$105 million per ship. The Military Sealift Command placed them in service in the mid 1980's in a reduced operating status. They are maintained with a core crew of nine civilian contract merchant seamen, and can respond to an order to activated within 96 hours.'

A. Capabilities

In addition to a cruising speed of over 30 knots, the converted SL-7 is a cargo vessel with RO/RO capability and a full displacement of about 55,000 tons. Each ship has about 150 square feet of enclosed RO/RO equipment and helicopter hanger space and a 35,500 square feet flight deck. It can also carry cargo containers and is equipped with 50 and 35 ton cranes to assist in the on-load and off-load of non-rolling cargo. Collectively the eight Ship Squadron possess the capability to lift the unit and combat support service equipment of a full armored or mechanized Army Infantry division, or the unit equipment of two divisions. As a point of reference, the combined lift capacity of the eight ships is equivalent to 2,100 C-5 and C-141 sorties. A single ship can transport the

equivalent of 225 C-5 sorties.⁸

Although they are maintained in a reduced operating status, they can be activated in 96 hours. SL-7's frequently participate in exercises for training and to validate this concept of operation. The USNS Bellatrix conducted the first real world SL-7 deployment in May 1989. She was activated and got underway to her designated port of embarkation in 56 hours. Where she loaded out and transported equipment to Panama in support of Operation Urgent Fury.

B. Limitations

The most significant limitation of the SL-7's is also one of its biggest assets. The exceptional cargo capacity of these ships would make a significant impact on sealift capability with the loss of a single ship. The sinking of a fully loaded SL-7 would result in the loss of up to one fourth the unit equipment of a division. The reduced operating status of the ships means they are not immediately available for load out on "C" day. Significant effort must be expended to assemble crews, make repairs associated with inactivity and transit to the designated port of embarkation. The required crew size of 42 is significantly higher than a normal merchant ship crew. Also, there are only eight of these large, fast and versatile ships.

C. Evaluation of Effectiveness

The ships of Fast Sealift Ship Squadron One acquitted themselves quite well in their initial Desert Shield deployment. All eight were activated in an average of six days and were at the port of Savannah, Georgia to load out the equipment of the 24th Mechanized Infantry Division.⁹

In the spirit of jointness under the direction of U.S. TRANSCOM, Col John Riley Jr., Commanding Officer of the Military Traffic Command (MTMC), South Atlantic Regional Headquarters, Charleston, South Carolina, orchestrated the loading of division's equipment. His unit consisted of the 1185th Reserve Terminal Transportation Unit, Landcaster, Pa (diverted from its annual two week training) and 30 civilians volunteers from his office.

The first ship to arrive in Savannah, the USNS Capella was loaded with 24,000 tons equipment and sailed for the Gulf on August 13, 1990, six days and six hours after its arrival. Two additional ships had to be diverted to Savannah to carry the remaining equipment of the 24th Infantry Division. On August 25, 1990 the last of ten ships departed for the Gulf. In sixteen days 1,214,847 square feet of cargo had been marked and loaded. The USNS Capella arrived in Saudi Arabia on August 27, 1990.¹⁰

Despite the fact that all eight ships were loaded out and sailed within 16 days (August 22, 1990) of activation, some

problems did occur. The first mate of the USNS Bellatrix quit on the morning of departure. His replacement was flown in and she was delayed several hours getting underway.¹¹

V. The Ready Reserve Force

The concept behind the Ready Reserve Force (RRF) was to establish a reserve force capable of quick response (ship availability) to support rapid world wide deployment of U.S. military forces and unit equipment.¹²

The Ready Reserve Force (RRF) established in 1976 and expanded during the 1980's and 1990. It is part of the National Defense Reserve Fleet (NDRF). Ships in the RRF are maintained in a higher state of readiness than the NDRF. The primary purpose of the RRF is to support strategic sealift with a combination of merchant ships that have a military use (RO/ROs, tankers, crane ships and breakbulk). They are maintained in 5-10-20 day readiness status. The RRF consists of 96 ships including 83 dry cargo ships (including 17 RO/RO ships and 8 crane ships), nine tankers and two troop ships.

Ready Reserve Forces are located at three principle sites, Newport News, Virginia, Beaumont, Texas, and Oakland, California. Other RRF vessels berthed at various ports within the United States close to potential out load locations.

A 1988 Memorandum of Understanding between Military Sealift

MARAD with maintenance funding responsibility of the RRF through the Department of Defense (DOT) appropriations. MSC continues to exercise operational control over RRF ships when activated.¹³

The primary reason for the increase in the purchase of RRF ships during the 1980's was the shifting of the Merchant Marine Industry from military useful ships (breakbulk cargo ships/smaller tankers) towards container ships and large tankers which are less useful militarily.¹⁴ The government, already concerned with the ability to meet strategic sealift requirements during the Iranian hostage crisis, the Iran/Iraq War, and the Soviet invasion of Afghanistan during the 1980's, decided to purchase these older ships that had no commercial value but still had some military usefulness.

Activation of the RRF is performed by a number of U.S. government agencies and commercial organizations. It is a series of inter-dependent events for which, various organizations have different degrees of responsibility. Appendix IV list the major Organizations participating in activation events.

A. Capabilities

The types of ships in the RRF give it a high degree of military utility. The variety of cargo these ships can transport make the RRF a flexible and viable strategic sealift asset. They are capable of moving personnel, unit equipment,

asset. They are capable of moving personnel, unit equipment, fuel oil, and large tracked vehicles. The majority of them are self-sustaining (organic capability to offload or onload own cargo), also, the fleet includes a number of crane ships that can be employed in under developed or damaged ports. Several of these ships are outfitted with sea enhancement features which enables them to conduct underway replenishment and be employed as augmentation fleet support ships.¹⁵

When properly manned, maintained and funded the Ready Reserve Force can be a key element in the Strategic Sealift Program. During the Surge Phase of Desert Shield (August 10 - November 8, 1990), the RRF in spite of its shortfalls provided 25 percent of all strategic sealift capacity and over 50 percent of the surge capacity to move military unit equipment. In Phase II (November 8, 1990) of the deployment, MSC activated 19 additional RRF ships. The majority of these ships were breakbulk, most of which are used for ammunition resupply.¹⁶ To date there have been 12 RRF activations totaling 66 RRF ships on duty .

B. Limitations

The overall poor responsiveness of the RRF during the initial Surge Phase of Desert Shield reflects inherent problems in the RRF. There was little surprise among the officials of TRANSCOM, MSC, and MARAD when 31 of the 42 ships activated under

the 5 day plan missed their cast-off date. The age of these vessels, their material conditions and the lack of adequate merchant seamen to man them severely impacted the responsiveness of these activations.

Activating ships from a reduced operating status that have not been operated since being acquired proved to be slow and expensive. Less than 50% of this contingency force was activated to support the initial surge for Operation Desert Shield. When questioned about this fact an Official at MSC stated, that one of the reasons all 96 RRF ships was not activated immediately, was because cargo had not been identified and it was cost prohibitive to conduct a total activation. This could be a valid argument except on the same day MSC activated the RRF it chartered 40 (2 U.S. flagged / 38 foreign flagged) commercial vessels to transport unit equipment to the Gulf. Sixty three percent of the ships requested for activation had never been broken out.

The average age of the Ready Reserve Force is 24 years. Most of ships were acquired in the late seventies and mid eighties at the expiration of their economic viability as a commercial carrier. Eighty of the 96 ships in the RRF have very old steam propulsion plants. In addition to the poor material condition of these plants, there is a scarcity of spare parts, and a lack of skills in the merchant marine fleet to operate them. The majority of the propulsion plants in the merchant marine fleets today are diesel powered. Only 15 of the ships in

the RRF are diesel powered. During his testimony before the House Congressional Committee on Merchant Marine and Fisheries Vice Admiral Donovan, Commander, Military Sealift Command stated "I've been around ships most of my life, and when you're talking about breaking out these old ships in five days, many of which have been laid up for seven or more years, that's a big chore."

According to a MARAD Official, until mid 1980's most RRF ships were not activated for any type of sealift exercise. At most, they were included in Command Post Exercises which are simulations of activations and manning from the merchant marines. According to the 1989 MSC annual report, only three RRF ships were activated to participate in Display Determination: the MV Cape Diamond (cargo ship), SS American Osprey (tanker) and the SS Cape Mendocino. The Cape Diamond suffered engine casualties and was replaced by the USNS Altair a Fast Sealift Ship. The Osprey and Cape Mendocino participated in the Joint Logistics Over the Shore (JLOTS) portion of Display Determination exercise.

The activation process proved to be very labor intensive. The average mandays of work required for each ship was between 800 and 1200.¹⁷ The poor material condition of these ships reflected not only the age, but the years of routine maintenance that had been deferred. Also the designation of a 5-10-20 day ship is not indicative of the material condition of the ship or the manner in which they are maintained. This is a paper designation based on policy requirements. The readiness

categories are used to justify the amount of overtime authorized in the ship yards to activate the ships.¹⁸ Sixty seven percent of the RRF ships are designated in the 5 day readiness category. Activations for the RRF ships averaged 9.5 to 10 days. Appendix V lists the number of ships in each readiness category and gives activation dates.

Manning for the RRF highlighted several problems within the Merchant Marine Industry. Again in his testimony before Congress Vice Admiral Donovan highlighted the manning problem. He stated "the crew situation is a problem. The number of merchant mariners available, their ages and their specialized skills have to be addressed.. Finding steam engineers to man older ships is a challenge. We are stretching the limits of our civilian mariners now."¹⁹ The average age of the crew was 55. Several of them came out of retirement and there were 146 who were 62 years of age or older. Most crews had little to no experience with the RRF ships. Short activation time lines, made training for crews almost impossible and the shortages of steam qualified engineers resulted in the shipyards frequently being asked to provide operating personnel. Activation of the first 40 ships had union officials combing the halls and retirement roles to round up civilian crews. Part of the problem was attributed to the time of year when a good portion of the civilian merchants were either on vacation, stand down or working civilian jobs (because they could not get enough work at sea).

10 or more ships we could probably do it.. If we have to activate more than that, we're in serious trouble."²⁰ Crews manning the RRF ships have been described as terrible and inadequate. The crews are old, inexperienced, and lack proper crew composition. The majority of some crews were composed of Merchant Marine Academy graduates who have never sailed and other card carrying civilians without any prior sea experience.²¹

Another factor identified as a reason for delays in the activations was budgetary constraints. The budget for RRF maintenance in FY 90 was cut from \$239 million requested to \$89 million, a 69 percent budget cut. As a result of the drastic budget cut some RRF ships were not activated on a test basis. The average cost to get a ship ready to steam, exercise it and return it to reduced operating status (ROS) is approximately \$1.5 - 2 million. This does not include the \$770 thousand required for Phase IV maintenance (includes dry docking) per RRF ship. During his testimony before the House Congressional Committee on Merchant Marine and Fisheries Mr. Moore, Director for Transportation Policy.."This funding level (\$89 million) not only precluded fleet expansion, but resulted in degradation in the readiness of the fleet.. with adequate maintenance, we could have minimized the extra costs and delay in activating ships for Desert Shield."

C. Evaluation of Effectiveness

"I can't feel flushed with success. I'd rather be moving a lot more equipment in modern, reliable diesel ships than the older steam ships, of the Ready Reserve."

VADM Francis Donovan
Commander, MSC
September 18, 1990

Overall, the Ready Reserve Force, once broken out, performed well. In spite of its shortfalls, it delivered the cargo and is still providing a viable sealift capability for this operational scenario. However, the inherent problems with RRF will not disappear with time. In fact they will become more critical.

VI. National Defense Reserve Fleet (NDRF)

National Defense Reserve Fleet administered by Maritime Administration, consist of 217 ships (96 RRF and 121 other ships approximately 50 years old). Unlike the RRF ships the older NDRF ships are not maintained, but are held in a preserved state. The primary purpose for the NDRF is to be attrition fillers in a full mobilization scenario. These ships are advertised as being capable of meeting activation goals of 30 - 90 days (on paper). However it is extremely unlikely that any of these ships can be activated within 90 days. The average age of these ships is 50 years, 71 of which are World War II Victory

ships. Mr. Kevin Burns, MSC Representative (RRF Program), states that a more realistic activation time frame would be 6 months. Moreover, it is more than likely that the cost of activating these ships will be well above the estimated \$2.5 million per ship. As a cost comparison the average cost of activating the RRF ships were \$1.5 million, 50 percent higher than the estimated \$1 million.²²

VII. Blueprint For The Future

There are as many solutions to the United States Strategic Sealift dilemma as there are individuals competent enough to spell it. However, the fact remains that the United States does not possess now or in the immediate future the Strategic Sealift necessary to meet the requirements of a contingency of the scope of Operation Desert Shield. Despite a coalition of 28 nations only three offered government owned assets (seven ships) to support the contingency operation. Even Japan, whose vital interest in the Persian Gulf appear to far exceed that of the United States and other nations provided only three ships. It is likely that future contingencies will not provide the luxury of delaying three to four weeks late in completing phase one of the deployment without paying a significant penalty in American lives.

This section proposes what is believed to be the requirements necessary to meet the strategic sealift shortfall

of the United States that were displayed in Operations Desert Shield and Desert Storm. This proposal consists of four basic elements; expand Afloat Prepositioning to include heavy unit equipment of the U.S. Army, pare down the NDRF/RRF to a more viable and responsible unit, utilize Navy Reservist to augment Merchant Marine crews during crisis, and revitalize the U.S Maritime Strategy.

A. Afloat Prepositioning for U.S. Army

The Maritime Preposition Force carrying the unit equipment and combat service support equipment and sustainment supplies for 30 days proved to be the most responsive aspect of the initial sealift surge. In operation Desert Shield, it provided CENTCOM with a MEB fully outfitted and self sustaining within 18 days. The added flexibility of an Army brigade or division, will add substantial firepower and the flexibility of heavy forces.

Despite the cost, expanding the APF to include Army unit equipment is probably the easiest and quickest fix to this aspect of strategic sealift. The RO/RO type ships necessary to accommodate this force is readily available for charter or purchase in the world fleets.²³

The withdrawal from Europe and the drawdown in forces that was scheduled to occur in FY 91 prior to the current crisis will provide an abundance of unit and combat support equipment at no

additional cost. In addition to a high state of readiness, the APF increases the availability of trained Merchant Mariners for future contingencies.

B. Restructure the RRF/NDRF

There is as much opposition as there is support for the continuance of the RRF and NDRF. Opposition highlighted the aging of the ships, crew shortages, slow reaction and response time, high activation costs and shipyard availability as reasons not to expand or continue the RRF and reasons to scrap the pre 1946 Victory class World War II ships (less than 100).

Supporters for RRF cite the it's overall performance in Desert Shield as proof that the RRF is a viable asset for strategic sealift. Supporters of the NDRF and strategic planners are not comfortable with scrapping an asset unless it is going to be replaced by something else. Realistically, both the RRF and the NDRF are well on the way to becoming paper assets giving false sense of security. In order to make the RRF a true asset to Strategic Sealift several initiatives must be undertaken. In a joint effort with the Army identify ships currently in the RRF and NDRF that no longer have a military use. These vessels should be scrapped and the proceeds utilized to acquire new assets. The remaining ships should be tested to identify all those that can not be activated due to major repair problems and either repair them or scrap them. Increase the

level of readiness of these ships by improving the Phase IV maintenance. Assign Navy Reservist with critical skills such as radio operators and boiler technicians to a selected number of RRF ships. These ships would be front line ships that would be called up in almost any crisis.

Recognizing that this will be quite expensive it is one way of identifying the true assets in both the RRF and NDRF and making it a viable responsive element of strategic sealift. The number of ships in the NDRF/RRF would be reduced as the U.S. Merchant Marine Fleet is revised.

C. Assign Critical Skill Navy Reservist to RRF Ships

Navy Reservist having the skills that the merchant marines were critically short of during Desert Shield could be assigned to selected RRF ships. These sailors could become part of the core crew on ships that could have the same activation schedule as the Fast Sealift ships. In this concept the reservist would be in a unit that would drill aboard these ships on weekends and during there annual two weeks of active duty. They would conduct training and maintenance and would deploy with the ship when it is called up for an exercise.

Until the maritime industry is revised, the establishment of a viable Merchant Marine Reserve Program similar to the military reserve programs (week end training, two weeks active duty, assigned to reserve unit, job protection with civilian

employers if called to active duty) is needed.

D. Revitalize the U.S. Maritime Industry

The United States is by far the largest trading nation in the world. However, less than four percent of our enormous sea going trade is carried on American bottoms. The poor state of our maritime industry is due in part to the fact that the U.S. Government has refused to play by the rules of the international game. This policy has come home to haunt us in that we can no longer rely on our maritime industry to be a viable strategic asset. To date in Operations Desert Shield and Desert Storm, the Military Sealift Command has chartered 148 ships and only 46 are U.S. flagged. As a result of the paucity of assets MSC in some cases paid twice the normal rate to charter foreign ships.

Although subsidies and tax incentives are politically taboo, they can be an effective means to revitalize the industry along with other programs such as government build and lease. After all subsidies have worked quite well for our American Farmers and the foreign flag fleets that carry the remaining 96 percent of America's sea going trade.

The Merchant Marine Industry must be revitalized and made an active part of strategic mobility. Without the merchant marine sealift programs such as the RRF and FSS will have ships with no trained merchant seaman to man them.

E. Fast Sealift Ship

Expansion of the FSS beyond the current level does not appear to be a very cost effective option. These laid-up ships are uneconomical to operate commercially and require a core of crew to maintain them. Also, they draw upon the scare pool of qualified mariners when activated. The design and acquisition of new Fast Sealift Ships appear to be uneconomically feasible. Even if the new ships are economical to operate commercially, the cost of acquisition will be extremely high. If adequate Sealift is available in normal merchant ships (20-25 knots), the cost of the added speed may not be beneficial both in terms of dollars and military necessity.

VIII. Conclusion

The Strategic Sealift for Operational Desert Shield and Desert Storm was a success despite the short falls and delays for the following reasons: The aggressor, Saddam Hussein, chose to wait until we were in a position to initiate hostilities, and it was conducted in a benign environment. Other benefits of the Strategic Sealift campaign are that it validated the concepts of the Maritime and Afloat Prepositioned Forces and the Fast Sealift Ships. The wisdom of the Goldwater Nichols Act was confirmed in the performance of the USTRANSCOM in coordinating the air, sea and land transportation in support of Desert Shield

and Desert Storm. It also shot holes in the security blanket of the NDRF/RRF, U.S. Merchant Marine fleet and the allied merchant marine fleets as a dependable source of strategic sealift.

The shortfalls in deploying significant U.S. Forces in an extremely favorable environment should be the catalyst that will push the Administration, Congress, and DOD to establish and fund a viable Strategic Sealift Policy and Program.

APPENDIX I

TOTAL NUMBER OF SEALIFT SHIPS USED AS OF 8 FEBRUARY 1990

SHIP TYPE	NUMBER
PREPOSITIONED SHIPS	25
FAST SEALIFT SHIPS	8
READY RESERVE FORCE SHIPS	71
HOSPITAL SHIPS	2
AVIATION LOGISTICS SUPPORT SHIPS	2
CHARTERED DRY CARGO SHIPS	108
U.S. FLAG (20)	
FOREIGN FLAG (88)	
CHARTERED TANKERS	40
US FLAG (26)	
FOREIGN FLAG (14)	
MSC CONTROLLED FLEET SHIPS	6
CHARTERED PRIOR TO DESERT SHIELD/STORM	
SHIPS OFFERED BY FOREIGN GOVERNMENTS	7
KOREA (2)	
KUWAIT (2)	
JAPAN (2)	
JAPANESE FIANCED AMERICAN VESSEL (1)	
TOTAL	269



APPENDIX II
SEALIFT TIME LINE

DATE	EVENT
AUG 2	IRAQ INVADES KUWAIT
7	PRESIDENT BUSH DEPLOYS TROOPS TO THE GULF
8	MARITIME PREPOSITION SHIPS SQUADRONS TWO AND THREE RECEIVES SAIL ORDERS AND GET UNDERWAY FOR THE GULF
	AFLOAT PREPOSITION FORCE SHIPS RECEIVE SAIL ORDERS
	HOSPITAL SHIPS USNS MERCY AND USNS COMFORT AVIATION LOGISTICS SUPPORT SHIP SS WRIGHT BEGINS ACTIVATION
9	APF SHIPS SAIL FOR THE GULF
10	RRF ACTIVATIONS BEGIN
	CHARTERING BEGINS
12	USNS COMFORT SAILS FOR THE GULF
	AVIATION LOGISTICS SUPPORT SHIP SS CURTIS BEGINS ACTIVATION
15	MPS SQUADRON TWO ARRIVE IN THE GULF
16	FSS CAPELLA SAILS FOR THE GULF
18	APF SHIPS ARRIVE IN GULF
25	FSS CAPELLA ARRIVES IN GULF
SEP 7	FIRST RRF SHIPS ARE
NOV 8	PHASE II BEGINS

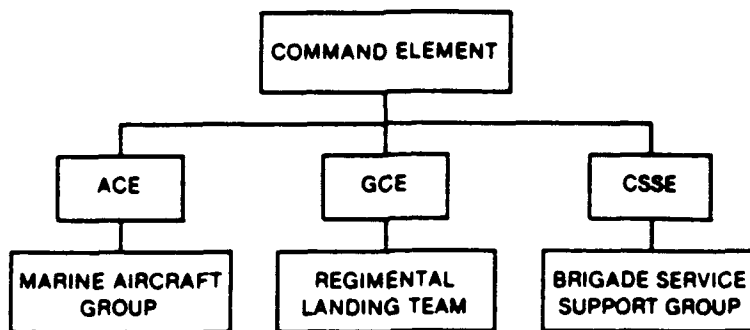
APPENDIX II CONT

DATE	EVENT
NOV 90	NSC REQUEST 19 MORE ACTIVATIONS RRF SHIPS MORE THAN 90 ADDITIONAL SHIPS CHARTERED WITHIN A MONTH.
14	MPS SQUARDON ONE RECEIVE SAIL ORDERS AND GETS UNDERWAY FOR THE GULF

(SOURCE: SEALIFT MAGAZINE, DECEMBER 90, p. 6,7)



APPENDIX III



AIRCRAFT/LAUNCHERS	MAJOR WEAPONS	MAJOR EQUIPMENT
20 AV-8B	53 TANK	3 MED GIRDER BRIDGE
24 F/A-18	109 AAV	12 30-ton CRANE
10 A-6E	24 155 mm How (T)	438 3-100kW GENERATOR
12 UH-1N	6 155 mm How (SP)	564 5-ton TRUCK
12 AH-1T/W	6 81 mm How (SP)	46 5-ton DUMP TRUCK
8 CH-53E	24 81 mm MORTAR	27 5-ton WRECKER
12 CH-53A/D	27 60 mm MORTAR	41 WATER PURIFY UNIT
12 CH-46E	72 TOW LAUNCHER	107 FORKLIFT
6 OV-10A/D	114 MK19 40 mm GRENADE LAUNCHER	29 BULLDOZER
4 RF-4B		10 ROAD GRADER
6 KC-130		59 TANKER TRUCK
8 HAWK LAUNCHER		10 CONTAINER HANDLER (LACH)
		625 LIGHT TRUCK
		593 ASSORTED TRAILERS

NOTES:
 Task-organized to accomplish specific missions.
 Structure can vary from the organization shown.
 Approximate personnel: 15,500 USMC
 875 USN

MPF MEB



APPENDIX IV
MAJOR ORGANIZATIONS PARTICIPATING IN ACTIVATION EVENTS

ORGANIZATION	EVENT							
	N	B	T	A	I	M	S	D
MARAD HEADQUARTERS	X					X		X
MARAD REGION	X	X		X	X		X	X
RESERVE FLEET SITE	X	X						
OUTPORT LAYBERTH	X	X						
SHIP MANAGER	X	X	X	X	X	X	X	X
TOWING COMPANY	X		X	X			X	
PILOTAGE ASSOCIATION	X		X				X	
ACTIVATION FACILITY	X		1/	X	X		X	
USCG/ADC	X				X		X	
FCC	X				X			
SEAFARERS UNIONS	X					X		
MSC	X			X			X	X

EVENT CODE: N - notification
B - breakout
T - towing
A - activation
I - inspection
M - manning
S - sea trials
D - delivery RFS

1/ As directed by the Regional Office

(SOURCE: OP - EMERGENCY ACTION PLAN 1989)





APPENDIX V

ACTIVATIONS	STATUS	ACT. MSG	OPCON	DAYS LATE	C-RATING
ANN CALLAGHAN	20	AUG102130Z	AUG202015Z	-4	9
CONET	9	AUG102130Z	AUG250000Z	0	2
CAPE DECISION	5	AUG102130Z	AUG200000Z	13	4
CAPE DIAMOND	5	AUG102130Z	DEC102200Z	120	5
CAPE DOMINGO	5	AUG102130Z	AUG100300Z	4	9
CAPE DOUGLAS	5	AUG102130Z	AUG233200Z	0	4
CAPE DUCATO	5	AUG102130Z	AUG241000Z	0	3
CAPE EDMONT	5	AUG102130Z	AUG240020Z	0	2
CAPE HENRY	5	AUG102130Z	AUG192100Z	0	2
CAPE HORN	5	AUG102130Z	AUG102110Z	4	2
CAPE HUDSON	9	AUG102130Z	AUG192100Z	0	3
CAPE INSCRIPTION	5	AUG102130Z	AUG150000Z	0	2
CAPE ISABEL	5	AUG102130Z	AUG212034Z	0	2
JUPITER	5	AUG102130Z	AUG200030Z	4	2
CAPE LAMBERT	5	AUG102130Z	OCT002340Z	40	2
CAPE LOBOS	5	AUG102130Z	AUG101333Z	3	2
NETBOR	9	AUG102130Z	AUG250000Z	0	3
CAPE MEXICAN	5	AUG142324Z	AUG251954Z	0	2
CAPE MAY	5	AUG142324Z	AUG221200Z	3	1
CAPE FLATTERY	5	AUG142324Z	AUG201000Z		2
CAPE FLORIDA	5	AUG142324Z	OCT101000Z	00	2
CAPE FAREWELL	5	AUG142324Z	AUG101000Z	0	2
CAPE CATOCH	5	AUG170030Z	AUG300200Z	0	2
CAPE CLEAR	10	AUG170030Z	AUG242120Z	-2	2
CAPE JOHNSON	5	AUG170030Z	SEP112000Z	10	2
CAPE JUBY	5	AUG170030Z	AUG201042Z	7	2
GULF BANKER	10	AUG170030Z	AUG200130Z	-1	2
AIDE	10	AUG201320Z	REPLACED		2
CAPE ARCHWAY	5	AUG201320Z	SEP030030Z	0	0
CAPE BORDA	5	AUG201320Z	AUG202200Z	1	1
CAPE BRETON	5	AUG201320Z	AUG252300Z	1	1
CAPE BOME	5	AUG201320Z	SEP131115Z	10	2
DEL MONTE	5	AUG201320Z	CANCELED		2
GULF TRADER	5	AUG201320Z	SEP010030Z	7	2
DEL VALLE	10	AUG201320Z	SEP140110Z	19	5
SCAN	5	AUG201320Z	REPLACED		2
WASHINGTON	10	AUG201320Z	AUG201000Z	-1	2
CORNHUSKER STATE	5	AUG202310Z	SEP000420Z	13	2
EQUALITY STATE	5	AUG202310Z	AUG311000Z	0	2
CAPE ALEXANDER	5	AUG122030Z	AUG310004Z	14	2
MAINE	10	AUG200130Z	SEP122300Z	9	2
CAPE MEVOCINO	5	AUG200130Z	SEP031100Z	0	9
AMERICAN OSPREY	10	AUG311310Z	SEP110145Z	2	2
AUSTRAI LIGHTNING	5	SEP211040Z	SEP201000Z	0	1
CAPE GIBSON	5	SEP211040Z	SEP270430Z	1	1
CAPE GIRARDEAU	5	SEP211040Z	SEP200800Z	0	1
CAPE ANN	5	NOV002000Z	NOV170001Z	2	2
DEL MONTE	5	NOV100100Z	NOV104530Z	3	9
GULF BANKER	10	NOV100100Z	NOV104300Z	-4	5
CALIFORNIA	5	DEC042220Z	DEC101433Z	1	2
CAPE DOVER	5	DEC042220Z	DEC001300Z	0	1
CAPE BLANCO	5	DEC042220Z	DEC000000Z	0	1
CAPE BON	5	DEC042220Z	DEC100300Z	0	1
NORTHERN LIGHT	5	DEC042220Z	DEC102130Z	1	1
CAPE CANSO	5	DEC042220Z	DEC241240Z	15	2
SCAN	5	DEC042220Z	CANCELED		2
CAPE CANTHAGE	5	DEC042220Z	DEC151000Z	0	2
BANKER	10	DEC042220Z	JAN211000Z	30	2

MAJOR ENGINE AND LOAD SYSTEM OVERHAUL

MAJOR BOILER REPAIR

OPCS BANKER

WERE IN PROCESS OF ROS-4 STATUS WHEN CALLED FOR



APPENDIX V
CONT

PRIDE	9	DEC042220Z	CANCELED	2	
LAKE	9	DEC042220Z	CANCELED	2	
CAPE COD	10	DEC042220Z	DEC102300Z 9	2	
CAPE CHARLES	10	DEC042220Z	DEC120530Z -3	2	
COURIER	10	DEC042220Z	JAN000512Z 20	2	
SANTA ANA	10	DEC042220Z	JAN102110Z 27	2	
CAPE CATANBA	10	'942220Z	DEC102330Z 9	2	
DIAMOND STATE	9	DEC042220Z	DEC142330Z 9	5	
AGENT	9	DEC002132Z	JAN071230Z 25	2	
CAPE ALABA	10	DEC002132Z	JAN110330Z 24	5	
POTOMAC	5	DEC121045Z	DEC102210Z 2	2	
CAPE AVINOF	5	JAN031710Z	JAN202100Z	3	
GOPHER STATE		DEC 30			STEEL BOX SHIP
FLICKERTAIL STATE		DEC 23			STEEL BOX SHIP
AMBASSADOR	10	JAN102230Z	JAN201200Z 0	4	
CAPE MONICAN			JAN112014Z		
SCAN	9	JAN102230Z	CANCELED	9	
LAKE	9	JAN102230Z	JAN230430Z 0	5	
CAPE CANAVERAL	9	JAN252020Z	FEB020230Z	9	
BUYER	9	JAN202020Z	FEB010000Z	9	
AIDE	10	JAN252320Z	CANCELED	9	
MISSION BUKHAVENTURA					

0.44615305
AVG DAYS LATE

* VESSEL WAS IN ACTIVATION FOR
PARTICIPATION IN SCHEDULED EXERCISE.
NOTICE ACTIVATION (NOT HELD TO 5 DAYS).

(SOURCE: RRF PROGRAM OFFICE MSC WASHINGTON DC)

ENDNOTES

1. VADM Paul D. Butcher Usn, " Statement", U. S. Congress, House Committee on Merchant Marine and Fisheries, Subcommittee on Merchant Marine, U.S. Capability to meet Sealift Requirements for the Persian Gulf Crisis, Oversight Hearing, Washington September 1990, p. 2.
2. John G. Roos, "While DOD Sorts Out Sealift Shortfall, Army Planners "Packing" the Force. Armed Forces Journal International. November 1990, p. 19.
3. James Kitfield, "Lifeline across the Seas," Government Executive, November 1990, pp.28-30.
4. Bud Sharkey, "FE: Prepositional Ships Support Desert Shield" Sealift, September 1990,p. 5,7.
5. Ibid, p. 7.
6. Ibid, p.7.
7. Ronald O'Rourke, Congressional Research Service, Sealift and Operation Desert Shield, Washington: 1990) p.CRS-19.
8. Ibid. p.CRS-18.
9. VADM Francis Donovan, USN, U.S. Congress, p.2.
10. James Kitfield, p.28.
11. Andrew E. Gibson and Commander Jacob L. Shuford, "Desert Shield and Strategic Sealift," Unpublished Research, pp, U.S. Naval War College, Newport RI: 1990 p. 6.
12. U.S. Department of Transportation, U.S. Maritime Administration, Director's Manual for Activation of the Ready Reserve Force (RRF), p. 2-1.
13. Military Sealift Command, 1989 Annual Report, (Washington:1989) p.15.
14. Ronald O'Rourke, p. CRS-19.
15. Director's Manual for Activation of RRF, p. 21.
16. Telephone interview MARAD Official, Ready Reserve Force 30 Jan 1991.
17. Captain Warren G. Leback, U.S. Congress, p. 4.

18. Telephone interview, Kevin Burns, Military Sealift Command, Washington, DC. (RRF Program) February 7, 1991.

19. William Matthews, "Sealift Feels Strain To Meet Commitment," Defense News September p. 38.

20. Ibid. p.38

21. Kevin Burns MSC

22. OP-42 Emergency Action Plan 1989, p. 3.

23. Gibson, 23.

BIBLIOGRAPHY

Director's Manual for Activation of the Ready Reserve Force (RRF),
U.S. Maritime Administration.

Butcher, Paul D. VADM, Congressional hearing, U.S. Capacity to meet
Sealift Requirements For The Persian Gulf Crisis, September
1990.

Donovan, Francis R. VADM, Congressional Hearing, September 1990.

Gibson, Andrew E. Shuford, Jacob L, "Desert Shield and Strategic
Sealift," Unpublished Research Paper, U.S. Naval War College,
Newport RI, December 1990.

Kitfield, James, "Lifeline Across the Seas", Government Executive,
November 1990.

Leback, Warren G. CAPT, Congressional Hearing, September 1990.

Matthews, William, "Sealift feels Strain to Meet Commitment,"
Defense News, September 1990.

Military Sealift Command, 1989 Annual Report.

O'Rourke, Ronald, "Sealift and Operation Desert Shield,"
Congressional Research Service.

Roos, John G. "While DOD Sorts Out Sealift Shortfalls, Army
Planners "Packing" the Force, Armed Forces Journal
International, November 1990.

Sharkey, Bud, "FE: Prepositioned Ships Support Desert Shield,"
Sealift, September 1990.

Telephone Interview Kevin Burns, Military Sealift Command (RRF
Program) Washington, DC February 7, 1991.

Telephone Interview MARAD Official, Ready Reserve Force, January
1991.