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**SEALIFT: TEN YEARS AFTER DESERT SHIELD  
AND DESERT STORM**

**BY**

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## ABSTRACT

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During Desert Shield/Storm massive amounts of equipment and material were moved by sealift from various locations to the theater of operations. In the succeeding ten years, much of the military's forward deployed equipment/material has been returned to the United States. Additionally, the Military Sealift Command has acquired additional strategic sealift resources. In this paper I will briefly outline the sealift operations that supported Desert Shield/Storm. This outline will become the basic lift requirement. Additionally, I will highlight changes in locations of equipment/material and organic sealift capability since Desert Shield/Storm. Finally, I will draw conclusions and make recommendations on our ability to meet a like (Desert Shield/Storm Baseline) requirement given today's available organic and commercial sealift capability.



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## SEALIFT: TEN YEARS AFTER DESERT SHIELD AND DESERT STORM

Roughly seventy-five percent of the earth's surface is covered by water. Due to its geographic location, the United States is essentially an island nation. Although we share a northern and southern border with sovereign nations, we still are geographically separated by water from many nations with whom we maintain strong political, economic, and military ties. Additionally, we have vital national interests all over the world. Our national economic and political power is based on continued access to international markets and our ability to project military power overseas when our vital interests are threatened. "Strategic Mobility is a key element of our strategy. It is critical for allowing the United States to be first on the scene with assistance in many domestic and international crises, and is key to successful American leadership and engagement. Deployment and sustainment of U.S. and multinational forces requires maintaining and ensuring access to sufficient fleets of aircraft, ships, vehicles and trains, as well as bases, ports, pre-positioned equipment and other infrastructure."<sup>1</sup>

Throughout the twentieth century, whenever our nation's military has been called to respond to a crisis overseas, sealift has provided the means to get the equipment and material to the area of operation. In our most recent major military operation, Desert Shield/Desert Storm, estimates range from eighty-five to ninety-five percent of all equipment and material was transported to the area of operations by sealift. Estimates vary based on who's doing the counting and what is being counted but the fact remains that sealift bears the brunt of the burden when moving equipment and material in support of power projection over most of the globe. The Army is currently on a path to transform itself to a lighter and more lethal force with the intent of projecting more power in a shorter time period when responding to crises. At the strategic level, this is the absolute right thing to do but is still many billions of dollars and many years away at the operational and tactical level. No matter what the future Army looks like, the reality is that sealift is and will remain in the mid-term and possibly into the long term the vehicle necessary to project power overseas.

The initial purpose of the paper is to provide a basic understanding of sealift and all of its elements. Following a definition of sealift, it provides a very brief history of United States Sealift from roughly the beginning of the twentieth century to the end of the Cold War, highlighting both the good and the bad. The thesis question of the paper asks, "Is the nation's sealift capability better today than during Operations Desert Shield and Desert Storm?" To answer this question the paper provides an overview of the sealift effort necessary to support Operations Desert Shield and Desert Storm. Operations Desert Shield and Desert Storm are kept separate

because the mission of both clearly changed the sealift requirement. The deployments in support of Desert Shield and Desert Storm were chosen because they provide defined lift requirements. The United States Military has made great progress through the Joint Operations, Planning and Execution System (JOPES), to include time-phased force and deployment data (TPFDD), in the management of crisis response but the reality remains that the nation does not know where the next crisis will spring up and what response will be required.

Since Desert Shield and Desert Storm, much intellectual effort has been expended to better define the nation's sealift requirement both in response to the results of Desert Shield and Desert Storm and the fact that the nation's Army and Air Force have shifted from forward deployed forces to power projection forces based mainly in the United States. Unfortunately, most of these studies remain classified but many of the gross requirements are unclassified and have made it into the professional literature. The published findings of these studies will be provided in the paper. Studies and plans are great but execution is typically better and the paper will provide an in-depth overview on how the nation is doing in meeting the sealift requirements defined in the previously mentioned studies. Finally, this paper will draw some conclusions and make recommendations on our ability to meet a like (Desert Shield/Desert Storm) requirement given today's available organic and commercial sealift capability.

## **SEALIFT DEFINED**

All military capabilities are best defined in doctrine. "Sealift forces are those military useful merchant-type ships available to the Department of Defense to execute the sealift requirements of the national military strategy across the range of military operations."<sup>2</sup> Today's sealift capability includes a combination of both government and commercial vessels. Sealift assets are divided into three distinct functional groups: pre-positioned assets, surge assets, and sustainment assets. These asset classifications are driven by how soon the vessels are available to sail to either the crisis area or a port of embarkation and the composition of the cargo carried. Additionally, they roughly support the halt, buildup and counterattack phases of a military operation.

The first group of vessels, the pre-positioned ships, provide the most ready source of equipment and material. "These ships are pre-loaded with military equipment and supplies needed for a war or other contingency. The ships are strategically positioned in key ocean areas, making it possible to deploy on short-notice the vital equipment, fuel, and supplies to

initially support our military forces whenever needed.”<sup>3</sup> The current location and equipment/material loaded on the pre-positioned assets will be discussed later in the paper.

The second group of vessels is those associated with the buildup of military force and is classified as surge assets. “In a surge role, ships would carry the equipment for combat and support units, including a large number of vehicles such as tanks and trucks, from their peacetime garrisons. Once that equipment was delivered, sealift ships would focus on sustaining operations – that is, delivering supplies of spare parts, food, water, petroleum, ammunition, and other items to support the operations.”<sup>4</sup>

The final group of vessels falls under the classification of sustainment assets. “Once forces get to the fight, they require sustainment throughout the conflict’s duration. Commercial sealift capacity is the cornerstone of sustainment sealift.”<sup>5</sup> Additionally, assets originally assigned to carry pre-positioned equipment and material and surge assets may be available to augment the sustainment effort.

#### **SEALIFT: A BRIEF HISTORY FROM THE BEGINNING OF THE TWENTIETH CENTURY TO THE END OF THE COLD WAR**

Prior to the Civil War, the United States existed mostly in isolation. Although we had both political and economic interests in Europe, the size of the Atlantic Ocean and the technology of the time allowed us to avoid the military confrontations on the Eurasian land mass. After the Civil War, the United States began to slowly emerge as a world power. As part of this emergence, political leaders, such as Theodore Roosevelt, relied on the writings of Alfred Mahan to slowly build the United States’ Naval Forces. “Mahan asserted that a navy could justify its existence only by the protection of merchant shipping. Describing the sea as a network of trade routes, Mahan cited ancient precepts as well as modern history to prove that true national greatness has been, in all ages and in all countries throughout the world, based upon waterborne commerce.”<sup>6</sup>

Although Theodore Roosevelt, as Assistant Secretary of the Navy, succeeded in advancing the Navy’s active fleet, the U.S. flagged merchant marine lagged far behind. This advanced active fleet served the nation well during the Spanish-American War of 1898 both in the Philippines and the Caribbean. Unfortunately, the after action reviews contain what would become a familiar theme after most overseas operations. This theme is best defined in a report released by the House Merchant Marine and Fisheries Committee. “The difficulties encountered by the United States Government at the commencement of the Spanish War should not be forgotten. It was necessary then to improvise a large fleet, not only of auxiliary

cruisers, but of transports and supply ships, equal in numbers to the entire regular fighting fleet of the United States. After the available resources of our own merchant marine had been exhausted, our Government was compelled to purchase some 51 foreign steamers, aggregating 128,000 tons and costing nearly \$10,000,000.”<sup>7</sup>

The United States continued to wrestle with its proper role in supporting a merchant marine capable of projecting military power when needed. At the outbreak of World War I most of the belligerent nations requisitioned their flagged merchant shipping to support their war efforts. This resulted in significant economic hardship for the United States in that ships that would normally transport U.S. goods, specifically agricultural, were now required to support other nations' war efforts. In 1916, the Congress passed the Shipping Act. This Act provided the financial impetus necessary to spur domestic ship construction. Unfortunately, the delay in the passing of the Act and the lead-time necessary to construct and fit out a ship precluded any major effect on World War I. “Although 1,409 oceangoing merchant ships were constructed as a result of the 1916 Act, only a few were operational in time to be of use in ‘The Great War’. They were, however, instrumental in the recovery of England and wartorn Europe.”<sup>8</sup>

Between the World Wars two major pieces of legislation, the Merchant Marine Acts of 1920 and 1936, provided positive contributions to the development and maintenance of the United States Merchant Marine. The 1920 Act restricted trade between states to ships built and registered in the United States. This Act is typically referenced after its principle sponsor, Senator Wesley L. Jones. Most provisions of this Act remain in effect today and state-to-state trade is still referred to as Jones Act Trade. The 1936 Act provided financial incentives to spur domestic shipbuilding. It also provided operating and construction subsidies to ensure military capable ships were available in the event of a crisis. This Act provided the basis for the build up of merchant ships necessary to prosecute World War II.

The Merchant Ship Sales Act of 1946 governed the disposition of government ships built to support WWII and created the National Defense Reserve Fleet (NDRF). The NDRF became the nation's first organic fleet maintained principally to support military power projection overseas. “The NDRF proved its worth with the beginning of the Korean War in 1950. Although many NDRF ships operated superbly in support of allied forces in Korea, the Maritime Administration (MARAD), recognizing the need to stimulate the U.S. shipbuilding industry, ordered 35 Mariner-class ships, excellent break bulk ships that were originally operated for MARAD under General Agency Agreements.”<sup>9</sup> These efforts failed to curb the decline of the U.S. Merchant Marine and by 1969 only 5 percent of America's commercial imports and exports were transported aboard U.S. flagged vessels.<sup>10</sup> The Merchant Marine Act of 1970 attempted to

curb this negative trend but a combination of excess world shipping, in combination with the oil crisis of 1973, negated any positive effect.

During the 1970s and 1980s, a series of events led to the development of the sealift capability in place at the beginning of Desert Shield. In the 1970s, the idea that pre-positioning material on ships could shorten the response time to many locations throughout the world, especially areas where there were little or no U.S. forces forward deployed, gained favor with the Carter Administration. This idea actually came up in the early 1960s but was rejected on isolationist principles. "Mr. Robert S. McNamara, the Secretary of Defense under Presidents Kennedy and Johnson, had proposed such a program using the large C-5 Galaxy cargo aircraft and Forward Deployed Logistic (FDL) ships. Congress refused to fund the FDL ships for fear that the pre-positioning of military supplies would lead to U.S. involvement in conflicts."<sup>11</sup> The Carter Administration continued to pursue pre-positioning of military equipment on ships at various locations throughout the world.

During the remainder of the 1970s and through the 1980s, the following six major events greatly contributed to the development of the pre-positioned assets available during Operation Desert Shield. These events are included in a summary of major actions relative to strategic mobility which can be found in appendix D of the Department of Defense's Final Report To Congress on the Conduct of the Persian Gulf War published in 1992.

- Presidential Decision Memorandum 10, a result of the 1977 Presidential Review of U.S. Regional Security Commitments and Capabilities, identified the need for the following capabilities.

- A limited number of relatively light combat forces such as USMC divisions and some light Army divisions.

- Naval and tactical air forces

- Strategic mobility forces with the range and payload to minimize dependence on staging and logistical support bases.

- Presidential Directive 18, issued in July of 1978, instructed the Pentagon to increase its strategic airlift and sealift capability such that it could quickly transport strike forces (two Army divisions, one heavy and one light, and a USMC amphibious force) to potential combat zones.

- An August 1979 Department of Defense (DoD) Amended Program Decision Memorandum announced the plan for maritime pre-positioning of military equipment and supplies. It required both airlift and sealift assets. The sealift requirement was further defined to include 13 Maritime Pre-positioning Ships (MPS), which would carry the equipment and supplies for three USMC Amphibious Brigades for a rapid global response capability.

- On 1 October 1979 President Carter, in an address to the nation, announced plans to create the "rapid deployment forces." These forces would be used to meet contingencies anywhere in the world. .

- In testimony before the Senate Armed Services Committee on 13 December 1979, Secretary of Defense Brown outlined the programs for improving rapid deployment capabilities. Included in these programs was the initiative to pre-position equipment and supplies for three Amphibious Brigades on 13 Maritime Pre-positioning ships.

- On 5 March 1980 in an effort to bring the MPS concept toward fruition, the DoD announced the Pentagon would deploy to the Indian Ocean seven existing cargo ships with enough equipment and supplies for early arriving forces of the Rapid Deployment Force. This formalized the Near-Term Pre-positioning Ships (NTPS) program.

During the remainder of 1980, six additional ships were added to the NTPS to support the Rapid Deployment Joint Task Force. Additionally, using fiscal year 1982 and 1984 funds, eight former SeaLand Corporation SL-7 class ships were converted to vehicle cargo/rapid-respond ships later renamed Fast Sealift Ships. These ships would be maintained in a reduced operating status (ROS) close to where they would be expected to load military equipment.<sup>12</sup> Additionally, the NDRF was reorganized to include the creation of a subset, the Ready Reserve Force (RRF), which would be maintained in a higher state of readiness.<sup>13</sup>

## **OPERATIONS DESERT SHIELD AND DESERT STORM**

On 2 August 1990 the Iraqi Army attacked Kuwait on several fronts. By the end of the day on 3 August, the Iraqi Army had destroyed most of the Kuwait Army and was taking up defensive positions on the Kuwait/Saudi Arabia border. International cooperation produced a coalition force to first defend Saudi Arabia and then evict the Iraqi Army from Kuwait. To defend Saudi Arabia, the United States, and its allies, would need to move massive amounts of equipment and material to the area of operations as quickly as possible. The Department of Defense, in its final report to Congress on the Gulf War, stated that at the outset of this operation it lacked the necessary strategic mobility. "The deployment of heavy ground forces able to conduct mobile mechanized operations was possible only through rapid sealift which, unfortunately, did not exist in sufficient numbers."<sup>14</sup> The following organic sealift assets were available on 2 August 1990:

- 25 ships of the Afloat Pre-positioning Force, including 13 maritime pre-positioning ships (MPS) carrying Marine equipment, eight Pre-

positioning (PREPO) ships carrying Army and Air Force cargo, and four tankers in the PREPO force.

- Eight fast sealift ships (FSS)
- 70 Ready Reserve Force (RRF) ships<sup>15</sup>

The lift requirement to support operations in the Persian Gulf is divided into two distinct phases. In the first phase, Desert Shield, the military objective was to defend Saudi Arabia from Iraqi attack. This phase lasted from 7 August 1990, C day, through 6 November 1990. Phase two began on 7 November 1990 and lasted through February 1991 with the cessation of offensive operations. The following table highlights the tonnage (short tons) delivered by sealift.

	Sealift (short tons)	Unit Equipment and support (short tons)	Sustaining supplies (short tons)
Phase I	1,170,000	1,034,900	135,100
Phase 2	1,675,000	1,270,300	404,700
Total	2,845,000	2,305,200	539,800

Table 1 – Dry Cargo Lift Requirements for Desert Shield and Desert Storm<sup>16</sup>

Each of the asset classifications performed at different levels at the beginning of Operation Desert Shield. The first classification, pre-positioned assets, performed as expected with cargo arriving in theater within planned timelines. The only noted discrepancy was the timeliness in providing direction to close the distance from their initial position to the theater. "While the overall utility of the MPS was proved out, the lack of an early decision to sail MPS – which is designed to be unilaterally deployed in international waters in ambiguous situations – reduced the options available to CINCENT in the early days of the crisis."<sup>17</sup> MPS units were not directed to sail until C day. MPS units started to arrive in theater about eight days after C day. The argument is that these units could have been directed to sail on either 2 or 3 August and would have gained an additional four to five sailing days. An earlier decision to sail would have provided CINCENT the equipment sooner and returned the ships to the U.S. Transportation Command common user pool at an earlier date.

Surge lift in Phase I was provided by the Fast Sealift Ships, ships from the Ready Reserve Force and ships chartered from the commercial sector. "In general, the FSSs performed well also. One broke down in route, and the average speed of advance for those making the first trip was lower than expected – 23 knots. For the entire operation, however, the FSSs averaged 27 knots. The seven operational ships delivered almost 20 percent of the unit equipment and related support in Phase I, and about 12 percent in phase II."<sup>18</sup> The Ready Reserve force did not fare as well. Due to various reasons ranging from funding to management practices most

ships that activated were not tendered to MSC on time. "Despite their assigned readiness conditions and readiness periods (37 of the 44 were 5-day ships, 6 were 10-day ships, and 1 was a 20-day ship), only 27 percent (12 of the 44) of the surge activated ships met their assigned readiness period of 5, 10, or 20 days and were tendered to MSC on time."<sup>19</sup> In spite of this slow start, RRF ships eventually delivered about 30 percent of the unit equipment in phase I.<sup>20</sup>

Ships under charter provided the balance of the surge effort to MSC. MSC chartered both U.S. and foreign flagged ships to support Operation Desert Shield. U.S. flagged ships were given preference but it was necessary to enter the foreign market to obtain the required platforms. Ronald Rost, of the Center for Naval Analysis, gives four main reasons why MSC chartered foreign flagged ships in his analysis entitled, "Sealift in Operation Desert Shield/Desert Storm: 7 August 1990 to 17 February 1991."

- RO/ROs (Roll-on/Roll-off capable vessels) were preferred for lifting cargo, and there were only 17 in the RRF
- There were both actual and anticipated delays in activating RRF ships
- Doubts about the ability to get sufficient crews for RRF ships had increased by late August.
- The cost of activating RRF ships is high.

RO/RO ships benefit the military because vehicles can be driven or towed on and off the vessel using either the vessel's ramp or one provided from shore. This expedites the loading and unloading of military equipment. Even with the existence of the RRF, the commercial market provided the platforms to provide the necessary lift in a timely and cost effective manner.

The third phase of sealift, sustainment, was conducted mainly by commercial means. MSC negotiated the Special Middle East support Agreement (SMESA) with U.S. commercial shippers. This agreement provided for shipment of up to 2,700 40-foot containers a week from various U.S. ports.<sup>21</sup> Additionally, MPS and surge assets that had delivered initial cargo requirements entered the common pool and provided lift for sustainment.

On 8 November 1990 President Bush announced that the U.S. presence in the AOR would be increased to about 200,000 personnel. This near doubling of forces amounted to another deployment effort for sealift. In phase II, the vast majority of the unit equipment came out of the European Theater. Both the First and Third Armored Divisions moved from Europe to Saudi Arabia. They, along with the First Infantry Division, the Second Armored Cavalry Regiment and the Second Marine Expeditionary Force from the United States, formed the augmentation force necessary to evict the Iraqi Army from Kuwait. Planning for this follow on lift

had already begun in October. With extensive assets available, phase II sealift efforts proved much easier than phase I.

### **MOVING FROM A FORWARD DEPLOYED TO POWER PROJECTION FORCE**

During the deployment to support Operation Desert Storm, two entire Army Divisions deployed from Europe to the AOR. Portions of these divisions, along with a large amount of pre-positioned equipment and supplies, had been previously scheduled to return the United States to meet requirements of the Conventional Forces In Europe Treaty. During the Cold War, the United States, through the Pre-positioning of Material Configured to Unit Sets and Theater Reserves in Unit Sets/Army Readiness Packages South programs had maintained enough equipment and supplies to fit out ten divisions in Europe in ten days.<sup>22</sup> This material was pre-positioned specifically to counter the Soviet Union Threat to Europe. Since the end of the Cold War, the Army has greatly reduced the amount of material pre-positioned in Europe.

Today's Army pre-positioned material consists mainly of the Army War Reserve (AWR) Program. This program has five major subdivisions. The first, AWR-1, consists of all the material stocks maintained in the United States. The second, AWR-2, is Army material stored in Europe. This material is distributed in Germany, Belgium, the Netherlands, Italy and Norway and consists of three Brigade Sets of material plus additional ammunition, selected engineering equipment and humanitarian stocks along with a Force Provider Package. AWR-3, the Army's afloat pre-positioned stock, contains material to support a heavy brigade along with the necessary combat support and combat service support material. AWR-3 is afloat on Afloat Pre-positioning Ship Squadron Four (APS-4) ships and is usually positioned in the Indian Ocean. AWR-4 is maintained in Korea and Japan and consists of equipment and sustainment stocks necessary to support a heavy brigade. Finally, AWR-5 is the largest pre-positioned set of material and is located in both Kuwait and Qatar. In Kuwait, the Army has pre-positioned a heavy brigade set of equipment along with sustainment stocks. Another heavy brigade set of material along with sustainment stocks and a divisional base set are located in Qatar.<sup>23</sup>

### **ADMINISTRATIVE EFFORTS UNDERTAKEN TO ENHANCE SEALIFT CAPABILITY**

Even before the shooting stopped in the ground campaign of Operation Desert Storm, numerous studies were underway to help improve sealift. Congress directed that the Departments of Defense and Transportation conduct the Mobility Requirements Study (MRS) in 1992. Sealift was again addressed in the 1993 Bottom-Up Review (BUR), the 1995 Mobility Requirements Study Bottom Up Review Update (MRS-BURU) and the 1997 Quadrennial Defense Review. Sealift, along with airlift, is being addressed in the current Mobility

Requirements Study, which is working its way through the administrative processes of the Departments of Defense and Transportation prior to release to the Congress.

The 1992 MRS identified the requirement to enhance Army pre-positioned afloat equipment and material. This study set a floor for this requirement at 2 million square feet.<sup>24</sup> This requirement was later validated in both the BUR and the MRS-BURU. Additionally, the BUR identified the surge sealift capacity requirement as 10 million square feet.<sup>25</sup> The MRS-BURU further defined how these requirements would be used to support two nearly simultaneous major regional conflicts (MRC). The sealift capability of 10 million square feet of surge and 4 million square feet of pre-positioned would support the first MRC, then swing to support the second MRC. All these requirements were further validated in the 1997 Quadrennial Defense Review and are the starting point for the current Mobility Requirements Study.

#### **CURRENT STATUS OF SEALIFT ASSETS**

The studies identified above provided the programming guidance necessary to enhance the organic sealift capability. For the purposes of this paper, the current status of organic sealift is effective 1 January 2001. The pre-positioning force consists of three subsets: the Maritime Pre-positioning Force, the Combat Pre-positioning Force and the Logistics Pre-positioning Force.

#### **THE MARITIME PRE-POSITIONING FORCE**

The Maritime Pre-positioning Force consists of 14 ships divided into three squadrons. Each squadron is capable of carrying the equipment and supplies for a Marine Corps Air Ground Task Force of about 17,000 Marines. Marine Pre-positioning Squadron (MPS) One maintains five ships and is located in either the Atlantic Ocean or the Mediterranean Sea. MPS One received a fifth ship since Desert Shield/Desert Storm. This ship provides enhanced capability to the Marine Corps Air Ground Task Force that would marry up with this equipment in the event of a crisis. MPS Two maintains five ships and is usually located at Diego Garcia. MPS Two will receive its enhanced ship in FY01. MPS Three maintains four ships and is located in the Guam/Saipan area. It will also receive another ship in FY01. One of these additional enhanced ships will be a Large Medium Speed Roll-on/Roll-off (LMSR) ship.<sup>26</sup> The addition of the three enhanced ships since Desert Shield/Desert Storm will bring the total number of ships assigned to the Maritime Pre-positioning Force to 16.

## THE COMBAT PRE-POSITIONING FORCE

The Combat Pre-positioning Force consists of 14 ships. This force is structured to carry equipment and supplies for the U.S. Army. Included in the 14 ships are six LMSRs. These six ships provide roughly 2 million square feet of lift capacity. Two additional LMSRs will replace ships currently in the Combat Pre-positioning Force bringing the total number of LMSRs in this force to eight. These two additional LMSRs will be delivered in April and September of 2001.<sup>27</sup> The LMSRs, along with five other ships, are attached to Afloat Pre-positioning Ship Squadron Four (APS-4). APS-4 typically operates in the Indian Ocean and the Arabian Gulf. In addition to the ships assigned to APS-4, the Army has afloat assets in Guam that are also a part of the Combat Pre-positioning Force. The GOPHER STATE, TITUS and GIBSON carry Army material and are attached to Maritime Pre-positioning Ship Squadron Three in Guam.<sup>28</sup>

## THE LOGISTICS PRE-POSITIONING FORCE

The Logistics Pre-positioning Force is made up of nine ships that are disbursed around the world under operational control of one of the MPS Commanders. Three of these ships carry munitions for the Air Force, one carries munitions for the Navy and three are tankers carrying pre-positioned defense fuels for the Defense Logistics Agency. In addition to the seven active ships, two Marine Corps aviation logistics ships are maintained in a reduced operating status capable of being operational in 5 days (ROS-5) to support Marine Aviation efforts. These ships are maintained one each on the East and West Coast of the United States.

## SURGE SEALIFT CAPABILITY.

Organic surge assets have been greatly enhanced since Operations Desert Shield and Desert Storm. The eight Fast Sealift Ships are still available and are maintained in ROS-4 status. A total of eleven LMSRs will be added to this capability by the end of fiscal year 2002. Six of these LMSRs have been delivered and are home ported on the East and Gulf Coasts close to where they would be expected to load military cargo. These ships are maintained in ROS-4 status. The remaining five surge LMSRs will be delivered as follows: February 01, August 01, February 02, and two in September 02.<sup>29</sup>

The Ready Reserve Force has also been greatly improved. The RRF consists of 76 vessels. Of these 76 vessels; 31 are RO/ROs, 10 are floating crane ships, 15 are breakbulk ships, 9 are tankers, 3 are Seabee Support ships, 4 are Lighter Aboard Ship (LASH) ships and 2 are troop ships. The remaining 2 ships are the previously mentioned Marine Corps aviation logistics ships. In addition to the numbers, the readiness of this force has greatly improved.

General Kross, USAF, Commander in Chief, U.S. Transportation Command, in the U.S. Transportation Command's 1997 Posture Statement to Congress highlighted this improvement. "Congress has fully supported the RRF Readiness Improvement program, which has undergone a remarkable transformation since Desert Shield/Desert Storm. Since that time, Ready Reserve ships received 40 no-notice activation notifications. Only one ship failed to meet its activation timeline, missing its deadline by just 10 hours."<sup>30</sup> The major concern with the RRF force is not the capability and readiness but the average age. The RO/ROs are between fifteen and thirty-five years old, the floating cranes are between thirty and forty years old, the break bulk ships are between thirty and forty years old, the tankers are between thirty and fifty-six years old, the Seabee ships are thirty years old, the LASH ships are about thirty years old and the troop ships are thirty-nine and sixty-one years old.<sup>31</sup> This force will need extensive re-capitalization during the next two decades.

#### SUSTAINMENT SHIPPING

Sustainment shipping will come mainly from two areas; first, follow-on sailings by pre-positioned and surge ships and second, commercial contributions through the Voluntary Intermodel Sealift Agreement (VISA) program. "Under VISA, U.S.-flagged carriers contractually commit to provide contingency ship and intermodel resources in return for DoD peacetime business. Key incentives of VISA include: participation as a condition for doing peacetime business with DoD; pre-negotiated rates allowing rapid transition to war; and carrier coordination agreements to protect market share."<sup>32</sup> Additionally, the Maritime Security Program (MSP) provides financial incentives to offset higher U.S. shipping construction and operating costs in an attempt to maintain the U.S. flagged merchant fleet. "The MSP was established by the Maritime Security Act of 1996 and provides approximately \$100 million in funding annually for up to 47 vessels to partially offset the higher operating costs of keeping these vessels under U.S. flag registry."<sup>33</sup>

In addition to the VISA program, agreements with NATO and South Korea provide additional shipping in support of specific operations.<sup>34</sup> This shipping is included in the deliberate and contingency plans associated with the specific geographic areas. "In South Korea, for example, the ports are smaller, so what we've done is to make arrangements with the ROK (Republic of Korea) government to commit a number of smaller ships to us, should the need arise, that would be suited to smaller ports. In that case, we'd offload the LMSRs and trans-ship the cargo using the smaller ships."<sup>35</sup> This transfer would probably take place either alongside a

pier in Japan or in a sheltered harbor while at anchor. Alongside a pier would be preferred due to the large amount of cargo that would have to be offloaded from the LMSR.<sup>36</sup>

### **DESERT SHIELD AND DESERT STORM REVISITED**

During Operation Desert Shield, the U.S. moved the equipment and material needed to support roughly four Army divisions and one Marine Expeditionary Force to the AOR. Closure for these forces, to include a Corps Support Command (COSCOM), did not occur until C+113 or 28 November 1990. Time for a deployment of this nature should be greatly reduced, should the requirement present itself in 2001. Currently AWR-5, located in both Kuwait and Qatar, plus the material afloat in AWR-3 provide enough material to support a heavy combat division. The Fast Sealift Ships have the combined capability to lift nearly all the equipment necessary to support an Army mechanized division.<sup>37</sup> The Fast Sealift Ships are now augmented by the six LMSRs. These six LMSRs provided greater lift, square feet, than the eight Fast Sealift ships. When the remaining five LMSRs are delivered by the end of fiscal year 2002, the available surge sealift, prior to using RRF assets, will have roughly tripled. This enhanced organic sealift capability, along with AWR-3 and AWR-5, moves the vast majority of the Army forces that participated in Desert Shield in a much shorter time frame.

The equipment and supplies necessary to support the Marine Expeditionary Force (MEF) are still aboard the Maritime Pre-positioning Force. During Desert Shield, the Corps Support Command (COSCOM) was the last unit to fully arrive.<sup>38</sup> This was based on a conscious decision on the part of leadership to utilize limited sealift resources to move combat units to the AOR first. "Army divisions and regiments have Combat Service Support (CSS) units organic to their structures."<sup>39</sup> These organic support units provide time limited support and eventually need additional augmentation from organizations, such as the COSCOM, above division level. Improvements in the RRF and utilization of VISA assets should provide the capability to move both the combat forces and the support at the same time.

Desert Storm required three additional Army divisions plus a second Marine Expeditionary Force. Given the same scenario, roughly five and one-half months to build up forces prior to hostilities, most of the pre-positioning ships and the surge ships should be available for the additional lifts of this second phase. As an example, the FSS CAPELLA completed its first voyage, seaport of embarkation to seaport of embarkation, in 36 days.<sup>40</sup> This performance was consistent among the seven FSSs that successfully participated in Operations Desert Shield and Desert Storm. Based on published speed and larger cargo capacity, the LMSRs would be expected to take a few days longer. However, the majority of the MPS, the

APS, the FSSs and the surge LMSRs should be available to turn around and provide sufficient lift to move this requirement.

Once again, the enhanced RRF along with the VISA program will greatly contribute to surge and sustainment shipping. Another agreement such as the Special Middle East Support Agreement (SMESA) may be necessary to provide any balance of necessary sustainment. Execution of any additional agreement would have to be worked in close coordination with execution of the VISA program. The net result is that the shipping capability necessary to support Desert Shield and Desert Storm type deployments is greatly enhanced today over that which was available in 1990 and 1991.

## **CONCLUSION**

The 1992 Mobility Requirements Study and the 1995 Mobility Requirements Study Bottom Up Review Update identified afloat pre-positioning requirements for 4.3 million square feet and surge capability requirements for 10 million square feet. This capability is based on the one time lift to move initial forces to a single Major Theater War (MTW).<sup>41</sup> With the completion and introduction of the remaining LMSRs, the pre-positioning requirement is met, and the surge capability requirement falls roughly 400,000 square feet short. Under current guidance, this force would support the initial MTW, then swing to support a second MTW. Currently, another Mobility Requirements Study is underway with no expectation of an increase in sealift requirements. The focus appears to be on airlift requirements. The reality to the DoD is that the current organic sealift capability, with the inclusion of the remaining LMSRs, is the organic sealift force available through the mid-term and probably well into the long term.

This paper concentrated on lift capability. It showed how prior to the Second World War, the military relied on the commercial sector; subsidized by the government, for its lift capability. After the Second World War, the government retained some of the massive number of ships it built to support the Second World War in the National Defense Reserve Force. The creation of the Rapid Deployment Force, supported by the Near-Term Pre-positioning Force, in the 1970s was the nation's first serious attempt at positioning military equipment and supplies afloat. Creation of the RRF and acquisition of the Fast Sealift Ships in the 1970s and 1980s greatly enhanced our surge capability. Desert Shield and Desert Storm highlighted the requirement to enhance our sealift capability as the military moved from a forward deployed force to a CONUS based power projection force. Much effort and funding have gone into the enhancement of sealift with a net result of a much greater capability.

This paper does not address many of the related issues. It does not address force protection issues during transit. By doctrine, this is the responsibility of the AOR Naval Component Commander. It does not address port availability and efficiency or force protection while in port. Additionally, it does not address the growing concern about the availability of merchant mariners to man the organic assets. Finally, it does not address Coalition Warfare in that the studies and plans are directed toward moving U.S. forces only. "The United States is the only country that can move massive amounts of cargo almost anywhere in the world in time of crisis. The British, for example, didn't have enough sealift for the Bosnia situation, and needed our assistance to move their army."<sup>42</sup>

The final analysis of the nation's sealift capability is best defined using the ends, ways, and means construct. The means, or physical resources, are either in place or under construction. With the exception of re-capitalizing some of the older RRF assets, by the end of fiscal year 2002 organic sealift assets for the next decade will be in place. Efforts to improve the sealift process can and will continue to be made in the both the ends (definition of the objective) and the ways (methods of utilizing the assets). Progress, through JOPES and other information management systems, is already being made in disciplining the lift requirements generation process. Improving discipline in the lift requirements generation process will expedite the war fighters' objective of receiving the necessary equipment and material in a timely manner. Methods of maintaining and operating our organic assets will continue to improve as we mature in our ability to contract for this service. Current readiness is a direct result of better contracting and greater resources. Logically, any major future reduction in resources will cause a corresponding reduction in capability. Finally, better coordination, at the joint level will greatly improve the utilization of this soon to be fixed resource.

Word Count = 6,361



## ENDNOTES

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<sup>3</sup> "Pre-positioning Ships – Program 3", linked from Military Sealift Command at Programs, available from <http://www.msc.navy.mil/cgi-bin/inventory-ship.pl?var=PM3>; Internet; accessed on 28 November 2000.

<sup>4</sup> Congress of the United States, Congressional Budget Office, Moving U.S. Forces: Options for Strategic Mobility. (Washington D.C., February 1997), 23.

<sup>5</sup> Walter Kross, Posture Statement, U.S. Transportation Command, 13 March 1997, linked from USTRANSCOM available from <http://public.transcom.mil/speeches/posture/posture.htm>; Internet accessed on 3 January 2001.

<sup>6</sup> Robert W. Kesteloot, "The U.S. – Flag Merchant Marine, A Century in Review," Sea\*Power, vol. 43, no. 1 January 2000: 37-38.

<sup>7</sup> *Ibid.*, 38.

<sup>8</sup> *Ibid.*, 39.

<sup>9</sup> *Ibid.*, 40.

<sup>10</sup> *Ibid.*, 41.

<sup>11</sup> Norman Polmar, The Ships and Aircraft of the U.S. Fleet, Thirteenth Edition (Naval Institute Press, Annapolis Maryland), 22.

<sup>12</sup> *Ibid.*, 270.

<sup>13</sup> U.S. Department of Defense and U.S. Department of Transportation, Joint Department of Defense/Department of Transportation Ready Reserve Force Working Group, The Ready Reserve Force: Enhancing a National Asset, (Washington D. C.: 23 October 1991), v.

<sup>14</sup> *Ibid.*, 37.

<sup>15</sup> Ronald F. Rost, Sealift in Operation Desert Shield/Desert Storm: 7 August 1990 to 17 February 1991 (Alexandria, VA May 1991), 3.

<sup>16</sup> *Ibid.*, 3.

<sup>17</sup> U.S. Department of Defense, Final Report to Congress on the Conduct of the Persian Gulf War, (Washington, D.C.: U.S. Department of Defense, April 1992, 391.

<sup>18</sup> Rost, 4.

<sup>19</sup> The Ready Reserve Force: Enhancing a National Asset, 6-4.

<sup>20</sup> Rost, 26.

<sup>21</sup> Rost, 6.

<sup>22</sup> Michael G. Bettez, Army Pre-positioning Stocks, The Key to Our Rapid Force Projection Strategy. Strategic Research Project (Carlisle Barracks: U.S. Army War College, 10 April 2000), 2.

<sup>23</sup> Bettez, 4-6.

<sup>24</sup> Kross, 1 of Modernization Section.

<sup>25</sup> James D. Hessman, "Readiness...Has Never Been Better, Interview with MSC Commander, Vice Admiral Philip Quast." Sea Power, March 1997, 10.

<sup>26</sup> Gary Davis Gary.Davis@msc.navy.mil, "DoD Sealift Capability," electronic message to Allen Lamson Allen.Lamson@carlisle.army.mil, 5 December 2000.

<sup>27</sup> Davis, 5 December 2000.

<sup>28</sup> Davis, 13 February 2001.

<sup>29</sup> Davis, 5 December 2000.

<sup>30</sup> Kross, 2 of Readiness Section.

<sup>31</sup> "Ready Reserve Force Laydown Brief to Admiral Clark, CNO," briefing slides, Pentagon, 15 November 2000.

<sup>32</sup> Kross, 3 of Readiness Section.

<sup>33</sup> "Maritime Security Program," linked from the Department of Transportation web page accessed at http://www.marad.dot.gov/programs/MSP/MSP.html; Internet; accessed 21 January 2001.

<sup>34</sup> Davis, 6 November 2000.

<sup>35</sup> Hessman, 10.

<sup>36</sup> Davis, 12 February 2001.

<sup>37</sup> "Sealift: Surge Project Office," available from http://www.msc.navy.mil/PM5/surge.asp; Internet; accessed 28 November 2000

<sup>38</sup> Rost, 19.

<sup>39</sup> Final Report to Congress on the Conduct of the Persian Gulf War, 394.

<sup>40</sup> Rost, B-10.

<sup>41</sup> William N. Hughes, "Strategic Sealift Programs", briefing slide to Commander in Chief, U.S. Transportation Command, U.S. Transportation Command, Scott AFB, IL, 5 January 1999.

<sup>42</sup> Hessman, 11.



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