

USAWC STRATEGY RESEARCH PROJECT

**GLOBAL STRATEGIC MOBILITY:
A DECADE AFTER DESERT STORM.
ARE WE MORE CAPABLE?**

by

Lieutenant Colonel Dean A. Nelson
United States Air Force

Colonel Charles S. Voelker
Project Advisor

The views expressed in this academic research paper are those of the author and do not necessarily reflect the official policy or position of the U.S. Government, the Department of Defense, or any of its agencies.

U.S. Army War College
CARLISLE BARRACKS, PENNSYLVANIA 17013

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ABSTRACT

AUTHOR: Lieutenant Colonel Dean A. Nelson, United States Air Force

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Operation Desert Shield/Desert Storm served as a wake-up call to the Department of Defense in regards to its mobility posture and capabilities. After more than a decade to evaluate and respond to the lessons learned, has the Department of Defense improved its mobility capabilities? Successive Mobility Requirements Studies since 1991 have set forth what mobility capabilities the combatant commander foresees. This paper reviews the progress of mobility capabilities from Desert Storm to the present. It will review and evaluate the legs of the mobility triad, airlift, sealift and prepositioning for actions taken to improve each portion. This evaluation will provide the basis for the overall assessment of the global mobility capabilities the Department of Defense currently has.

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GLOBAL STRATEGIC MOBILITY: A DECADE AFTER DESERT STORM.

Operation Desert Shield/Desert Storm (ODS/S) was a watershed event for the deployment of United States Armed Forces. It signaled the beginning of a new way of warfighting the United States had not envisioned since the end of the Cold War.

“Strategic mobility operations in support of Operations Desert Shield/Storm were extraordinarily successful. However, the level of effort required to ensure success again reaffirmed the long-standing consensus of leaders in the military, private industry, and Congress concerning the woeful condition of the strategic mobility posture of the United States.”¹

The 1991 National Security Strategy of the United States stated:

In this new era, therefore, the ability to project our power will underpin our strategy more than ever. We must be able to deploy substantial forces and sustain them in parts of the world where prepositioning of equipment will not always be feasible, where adequate bases may not be available (at least before a crisis) and where there is a less developed industrial base and infrastructure to support our forces once they have arrived.²

This strategy has served as the foundation for the current strategic mobility and as a basis for the first of three Mobility Requirements Study's (MRS)³ conducted since the end of ODS/S.

These studies were the Department of Defense's (DoD) attempts to quantify what level of strategic mobility lift was needed to meet the stated national security strategy. Secretary of Defense Richard Cheney in his January 1991 Annual Report to the President and Congress stated this about the role of strategic mobility:

The potential for contingencies in regions outside Europe continues to grow. As a result, strategic mobility takes on increased importance. The Defense Department will continue to place a high priority on the maintenance and improvement of U.S. strategic mobility forces.⁴

This paper will review the progress DoD has made in reaching the mobility requirements set forth by successive national security strategies since the Gulf War. It will review each leg of the mobility triad, airlift, sealift and prepositioning, to assess DoD's efforts and effectiveness in reaching the goals set forth by the mobility requirements studies conducted since the end of ODS/S. Finally it will offer an assessment of the present state of DoD's strategic mobility and how it is postured to meet the challenges of current and future conflict.

AIRLIFT

Operation Desert Shield/Desert Storm saw a major shift in the use of airlift for the movement of warfighting materials and personnel. In all previous conflicts, airlifts contribution to the overall amount of material shipped to the theater was relatively small in comparison to sealift. Strategic lift planning factors called for airlift to account for 95 percent of overall lift requirements until the sea lines of communication had been established, which is generally thirty days after the start of the first strategic movement. Sealift is planned to provide only 5 percent in this first phase of deployment and then after day thirty the percentages will reverse with sealift providing 95 percent of all strategic lift requirements. However, in ODS/S airlift accounted for 15 percent of all strategic lift needed for the war effort and more significantly provided 30 percent of the resupplies to the theater.⁵

The strategic airlift fleet utilized during ODS/S consisted of C-5's, C-141's and Civil Reserve Air Fleet (CRAF) aircraft. The utilization of the CRAF was unique and ground breaking. The CRAF program was developed so that DoD can tap into the civilian airline passenger carrying capacity. This capability was utilized for most of the troop movements to the Gulf. In contrast to the Vietnam War where 82,800 troops traveled by sea in the first ninety days of the war and 85,562 troops traveled by air, ODS/S saw a mere 1,453 troops travel by sea and 183,030 troops reached the ODS/S theater by air in the same time frame. This activation of the CRAF was the first of its kind since the inception of the program and CRAF aircraft flew 5,500 missions in support of ODS/S operations.⁶

The airlift operations conducted during ODS/S were considered to be quite successful. However there were several good lessons learned for future contingency operations. The basic task of integration of all the elements of the airlift proved to be more difficult then previously envisioned. The CRAF provided a responsive and proficient capability but lacked the flexibility provided by military aircraft.⁷ Since this was the first full-scale call up of the CRAF, many common military type tasks assumed by military airlift planners presented unique challenges for their civilian counterparts. Unfamiliarity with the processing and carrying of hazardous cargo, different communications equipment and procedures, and at times the lack of equipment presented challenges to the civilian crew. The military pilot's average age was thirty years while the civilian pilot's average age was fifty-five.⁸ This age difference was a major factor in the decision process to waive operational flying hour restrictions by the civilian airlines that was a normal process for military operations.⁹

Operational requirements for ODS/S on the C-141 and C-5 fleet were debilitating to the overall health of these aircraft. Operational restrictions on these aircraft limited them to carrying only 75 percent of their maximum load capacity. The high pace of operations aged the overall fleet by one and one half times their normal operational pace. The C-5's tempo was almost three and one half times their normal peacetime commitment.¹⁰

Following operations in the Gulf War, Congress directed the first Mobility Requirements Study (MRS) to provide necessary direction for the strategic mobility shortfalls associated with ODS/S.¹¹ This study was supplemented by DoD's Bottom-Up-Review (BUR) in 1993. This study served as a wakeup call to DoD on the importance of strategic mobility and specifically in airlift. As stated in the MRS: "To support national interests, deployment capability must increase through...sustained investment in airlift."¹² The study characterized Desert Shield deployments as being conducted with considerable risk due to the inability of mobility forces to project power quickly.¹³

The MRS study identified a requirement of 49-52 million ton miles per day (MTM/D) to be carried by airlift. Additionally it called for the continuation of the C-17 program to improve the airlift capability.¹⁴ The C-17 was the next generation airlift aircraft and was undergoing development/procurement at the end of ODS/S. The C-17 was envisioned to replace the aging C-141 and C-5 aircraft.¹⁵ Airlift capability at this time could move 48 MTM/D with the CRAF component providing 18 MTM/D when fully utilized.¹⁶ While this would indicate that the MTM/D requirement was being met the fact was the current fleet of airlift aircraft would not be able to sustain the lift requirement because it was approaching the aircrafts service life. The operations in ODS/S had literally flown the wings off the C-141 fleet. Despite maintenance efforts to extend the aircraft service life, the active duty C-141 fleet was programmed for retirement by 2003 with the reserve component aircraft retiring in 2006--a full nine years earlier than planned by the Air Force.¹⁷ Additionally, the C-5 fleet's maintenance requirements resulted in 30-40 percent of the fleet being grounded at any one given moment.¹⁸

The identified remedy to the airlift problem was the acquisition of the C-17. The C-17 gives the capability to carry a considerably larger payload, including outsize cargo, to more places worldwide than was currently possible. One study conducted showed that if the C-17 had replaced the C-141 during ODS/S, airlift deployment requirements would have been completed 20-35 percent faster.¹⁹ However, the acquisition program was wrought with controversy and problems. The Air Force's original plan in 1981 was to purchase 210 aircraft. This amount was scaled back to 120 in 1990 due to cost overruns and technical problems.

Congress began a review of the program and initially limited the purchase to only forty aircraft until a Congressional review was completed in 1995. The Government Accounting Office recommended in 1994 that DoD establish a minimum requirement for C-17's to provide special airlift and to evaluate a strategy that involved the use of wide bodied aircraft to meet additional airlift requirements.²⁰ The Air Force in November 1995 received a positive Milestone IIB Defense Acquisition Board decision to purchase an additional eighty C-17 aircraft (total buy of 120). This decision was based on a review of alternative methods such as additional C-5 aircraft and commercial 747 aircraft. However, the C-17 demonstrated better capabilities in outsized cargo capability, ground handling, turn around time and the amount of cargo it could deliver through a particular aerial port facility. The acquisition of the 120 C-17 aircraft was determined to meet the airlift requirements as set out in the 1995 Mobility Requirements Study Bottom-Up Review Update (MRS BURU).²¹

In late 1998, the commander of U.S. Transportation Command (TRANSCOM) and Air Mobility Command (AMC) described the mobility forces as "healthy." The state of the force was the result of lessons learned in the Gulf War and increased emphasis on the mobility lift requirements.²² However, AMC did not consider a special operations requirement the C-141 was performing when it set the C-17 requirement at 120. This requirement would draw 15 C-17s from the fleet and thus reduce the amount of airlift available.²³ The C-141 was scheduled to leave the active duty inventory by 2003 and the reserve component by 2006. This drawdown in C-141 aircraft is offset by the increasing numbers of C-17 aircraft but still results in fewer total number of aircraft.

The major concern for the airlift fleet in 1998 was with the C-5 aircraft.²⁴ The C-5 had the lowest reliability rates and highest cost per flying hour and maintenance per flying hour. The aircraft was in pressing need to have its engines replaced. The engine replacement program along with other systems replacement programs would increase the C-5s departure reliability from 70 percent to 95 percent and establish a 75 percent mission capability rate.²⁵ The cost of the program as determined by two separate studies would cost about \$5 billion. At the time the Air Force did not have the funds available to set aside for this needed upgrade.²⁶

Participation in the CRAF was on the rebound after a drop following the Gulf War. Participating carriers had major concerns with insurance on the aircraft, safety of the pilots and loss of business to non-participating competitors during ODS/S. However, the AMC commander had vigorously pursued new practices and policies that brought CRAF participants back to the program. At this time all CRAF requirements were met with the exception of aeromedical evacuation (five planes short of requirements). This was not a major concern

however since this particular requirement was in the third stage of CRAF to be called up. CRAF participation in ODS/S only required implementation of Stage II. The overall participation in Stage III CRAF, both wide body equivalents and cargo capacity, currently exceeds 128 percent of requirements.²⁷ As the TRANSCOM commander stated: "CRAF is good for the Air Force, DoD, and our industrial partners, and we're going to try to keep it that way for all of them."²⁸

The MRS-05 further defined the requirements for strategic airlift. An airlift fleet of 49.7 MTM/D (as set by the MRS BURU) is not adequate to meet the range of requirements. This is primarily due to newly identified intra-theater lift requirements and to consideration of missions additional to those supporting the two-major theater war scenario. This analysis of intra-theater lift and the additional supporting missions were not included in previous studies.²⁹ Based on missions directly supporting the warfighting demands, the study identified a need for a minimum of 51.1 MTM/D of airlift capacity. This figure included the newly identified support for high-priority movements with the theaters.³⁰ The study identified the likelihood of other demands on the airlift system during peak periods of operations early in major theater campaigns. These demands would be closely associated with the conduct of theater operations and thus were considered to be additive to the 51.1 MTM/D. These high priority missions--conducting special operations, deploying missile defense systems to friendly nations and support to other theater commanders not directly engaged in campaigns--would increase the total airlift requirement to 54.4 MTM/D. The establishment of this airlift capability is the minimum moderate risk capability to support the National Military Strategy.³¹ To provide this airlift capacity MRS-05 recommended DoD to consider providing additional C-17s, improvements to the performance of the C-5 fleet, additional services that could be provided by commercial operators, and sources to be used for missions of short duration.³²

Right now the United States does not have enough airlift to meet the requirements set out in the MRS-05. Today's capacity is less than 46 MTM/D. In order to meet the needs set forth in MRS-05, the Air Force has developed a Global Mobility Roadmap.³³ It had already resolved the special operations requirement in 2000 by programming an additional fourteen C-17s at the end of the current procurement of 120. This new procurement raised the total number to 134.³⁴ To fill the gap in capacity the plan is to acquire additional C-17s and to modernize the C-5s and C-130s. While in 2002 Congress approved the purchase of 60 additional aircraft (total 180), the MRS-05 minimum requirement necessitates the procurement of at least 222 C-17s.³⁵

The C-5 is a very important part of the airlift capacity because it can handle nearly 100,000 pounds more cargo than a C-17. This makes it the primary aircraft to move large numbers of assets from the CONUS to the war zone. However, the aircraft is aging with 76 of the total 126 aircraft over thirty years old.³⁶ Mission capable rates were the focus of a General Accounting Office study which identified a substantial shortfall in airlift capacity to the tune of 3.51 MTM/D based on the MRS BURU.³⁷ To remedy this problem the Air Force started a two-phased approach: a \$454 million program to update the flight-controls, communications and navigation systems and instrument displays, and a \$1.1 billion contract to start system development of a reliability enhancement and reengineering program (RERP). For the RERP program, four C-5s will be modernized and demonstrate the improvement in mission capability rates.³⁸ If the results meet the expectations then modernization of the fleet should begin in 2007. The success of this modernization program will ultimately decide the total numbers of C-17s needed to meet requirements.³⁹

As DoD continues its considerable expenditure on airlift assets it still is evident that more aircraft are needed. The current operations in Afghanistan (Operation Enduring Freedom) have validated past investments in airlift. However, this operation was a limited effort with a relatively small contingent of ground forces. According to the Commander of U.S. TRANSCOM, airlifters performed "extraordinarily well" and all the feedback from the combatant commanders has been glowing.⁴⁰ However, as the Army begins its look back at the operations in Afghanistan, its view was that "Army tactical and Air Force strategic lift platforms strained to meet demands imposed by the threat, the environment and the magnitude of this global effort. Demand for the capabilities of the CH/MH-47 and C-17 and their respective utility in the GWOT (Global War on Terrorism) warrant reconsideration of program funding levels."⁴¹

SEALIFT

Prior to ODS/S, the United States had not attempted the movement of vast amounts of military equipment since the Vietnam War. The buildup of equipment in ODS/S required the utilization of most of the country's sealift force. The ODS/S rate was 33 percent larger than that moved during the first year of the Korean War. This is more impressive considering the distance to the Southwest Asia operation and the fact the Navy, the U.S. merchant fleet, and the reserve ship force were much smaller than they were in 1950. About 3.3 million short tons of dry cargo was delivered to the area of operations. As stated earlier, about 15 percent of this amount was delivered by air with the remaining majority delivered by sealift.⁴² The volume of shipping used during the entire operation was so great that it could be referred to as a "steel

bridge.” At its peak, about 132 ships were enroute to the Gulf, 44 were returning home from the Gulf and 28 were being loaded and unloaded at various ports.⁴³ By all accounts the sealift portion of ODS/S performed up to expectations of the time but were not without several limitations and problems.

The sealift force at the beginning of ODS/S consisted of ships in the Ready Reserve Force (RRF), Military Sealift Command (MSC) controlled ships, U. S. flagged ships and Effective U.S.-Control Fleet (EUSC). The RRF consisted of government owned, commercial ships with military utility that are maintained in an in-active status. They are maintained by the U.S. Maritime Administration (MARAD) in varying states of readiness to support the deployment of U.S. military forces. Activation is controlled by the Navy. The MSC fleet consisted of Fast Sealift Ships (FSSs), Maritime Prepositioning Ships (MPS), and Afloat Prepositioning Ships (APS). The MPS and APS will be discussed later in this paper under the Prepositioning portion. The eight FSS ships, owned by MSC, provided a roll-on/roll-off (RO/RO) capability. These RO/RO ships provide for rapid movement of military equipment and are maintained in a four-day reduced operating status (ROS). The U.S. flagged ships are cargo carrying ships owned by U.S. business and operated under U.S. registry. These ships are made available via voluntary charter or by requisition after a Presidential declaration of national emergency. The EUSC ships are U.S. owned but registered in a foreign country. The EUSC availability is based on a Presidential declaration of emergency. Use of EUSC ships is contingent on a country-by country basis, the nature of the conflict and associated political issues.⁴⁴

The FSSs have the largest cargo capacity of any of the MSC assets. Their cruising speed is over thirty knots which is around ten knots faster than other similar cargo ships. The combined cargo hauling capability provided by the eight FSSs is enough to transport the unit and combat support service equipment of a full armored or mechanized Army Infantry division or the unit equipment of two divisions. If this same amount of equipment were carried by airlift it would require the equivalent of 2,100 C-5 and C-141 sorties; a single ship is worth 225 C-5 sorties.⁴⁵

The overall performance of the FSSs was good. The average time to activate these ships was six days and the first ship to arrive at its port of embarkation sailed six days and six hours after arrival. The entire eight ships set sail within sixteen days of activation.⁴⁶ Enroute, one ship broke down and was seriously delayed in arriving in the Gulf. The average speed of those making the first trip was twenty three knots, lower than expected. However, for the entire operation the FSSs averaged twenty seven knots. The seven operational ships delivered about 20 percent of the unit equipment and related support during Phase I (19 August 2000 to 8 November 2000) and about 12 percent in Phase II (8 November to February 2001). This

productivity was a reflection of their size and speed. Five ships completed three deliveries during the first phase.⁴⁷

The primary purpose of the RRF ships is to support strategic sealift with a combination of commercial ships that have a military useful capability (RO/RO, tankers, crane ships and breakbulk) and are maintained in 5-10-20 day readiness status. The RRF consisted of ninety-six ships including eighty-three dry cargo ships, this included seventeen RO/RO ships and eight crane ships, nine tankers and two troop ships. The RRF ships are berthed in various ports throughout the U. S. close to potential load-out locations.⁴⁸

The average age of the RRF ships was twenty-four years with most being acquired in the late seventies and mid eighties at the end of their commercial viability. Eighty of the ninety-six ships were powered by old steam propulsion engines. The availability of parts and experience to operate the ships was a major problem. In the commercial merchant marine all propulsion engines are diesel driven.⁴⁹ The activation of the ships proved to be a very labor intensive operation. The amount of man-days needed to get each ship operational was between 800 and 1200 hours. Poor material condition and years of delayed routine maintenance were the main culprits. In fact, 67 percent of the RRF ships are designated in the five day readiness category; however the average time to activation was between nine and one half and ten days.⁵⁰ Manning of the ships was also a major problem. Since most of the ships were of the old steam variety finding qualified individuals was difficult. The average age of the crew was fifty-five years with several individuals called out of retirement (146 individuals were older than 62). Some of the crews were manned by recent graduates of the Merchant Marine Academy who had never sailed before.⁵¹

As should be expected, the RRF force performance could not be judged a success. Of the forty-four RRF ships activated for Phase I only twelve completed activation duties on time. Twelve ships were anywhere from one to five days late, and twenty were at least six days late. For Phase II, the activation did not improve. Only three of twenty-six ships activated on time, seventeen were more than five days late.⁵² The age of the vessels, the material condition of the ships and the lack of adequate merchant seamen to operate them were the major limitations in the responsiveness of these ships.⁵³ Once fully operational, the RRF ship performed well and delivered about 30 percent of the unit equipment and related support in Phase I and 25 percent in Phase II.⁵⁴

Commercial charter ships turned out to be a little recognized but crucial element in the overall sealift operation. Military Sealift Command utilized the commercial charter for four basic reasons. First, RO/ROs were the ship of choice and there were only seventeen in the RRF.

Second, the activation of the RRF was much slower than planned and anticipated. Third, there were sufficient doubts as to the ability to find available crews for the RRF during the initial stages of the operation. Fourth, the cost of activation of the RRF is more than the cost of the commercial charters.⁵⁵ However, most of these commercial charter ships were of a foreign flag. Of the 191 chartered ships only twenty-nine were U.S. controlled. Foreign flagged shipping accounted for about 70 percent of charters used in Phase I and 85 percent of the charters in Phase II. U.S. controlled ships accounted for only 30 percent of the total charters for the entire operation.⁵⁶ Charter ships accounted for over half of the combat and support equipment delivered in the Phase II as opposed to the 30 percent delivered in Phase I. The compressed time required for Phase II caused the large number of charter ships since all the ships could only make one trip in the required time frame.⁵⁷

The 1992 MRS that followed ODS/S identified the sealift shortfalls and made substantial recommendations for improvements. Specifically the study called for additional sealift capabilities equal to twenty large, medium-speed, roll-on/roll-off ships (LMSR) of 380,000 ft² total capacity, add three million ft² of surge sealift capability for rapid deployment using eleven LMSRs and expand the RRF from ninety-six ships to 142 ships (of which 104 will be dry cargo).⁵⁸ The MRS BURU of 1995 basically reiterated these same sealift requirements adjusting the number of LMSRs to nineteen.⁵⁹

DoD's response to these requirements has been hit and miss over the years. Initially Congress appropriated substantial resources to the ship acquisition program. However a Government Accounting Office report (July 1992) provided data the program was flawed and should not be pursued. The bottom-line to the report was that off-the-shelf vessels could be purchased and save fifty million dollars.⁶⁰ A subsequent report (early 1994) by the DoD Inspector General asserted the Navy was spending \$793 million on sealift it did not need.⁶¹ In 1995 the TRANSCOM Commander reported to Congress the state of sealift was not in good shape. To meet the current strategy of two major regional conflicts required ten million square feet of cargo space. The current state only provided six and one half million square feet. At that time DoD was in the process of buying eighteen more RO/RO ships but that program would not be complete until 2001. After these ships entered the fleet there would still be a shortfall of eight RO/RO type ships scheduled to be used for the maritime prepositioning fleet.⁶²

In January 1997, the Secretary of Defense approved the Voluntary Intermodal Sealift Agreement (VISA). The program's objective is to provide assured access to commercial shipping and intermodal facilities during contingencies. The program is similar to the airlift CRAF program and uses the commercial maritime industry to transport most of its peacetime

and nearly all of its wartime sustainment cargo. VISA addresses the issues raised during ODS/S of access to U.S. commercial shipping, helps with the potential merchant mariner manning shortfall by providing crewmen to work the ships and provides access to infrastructure as well as ship capacity.⁶³

A corollary program instituted in 1996 by the Maritime Security Act provided subsidies to commercial U.S. flagged shipping. The program was funded for 10 years but there are problems associated with it. The act only provided for 47 U. S. ships and the amount each ship was to receive was one million dollars less than previous agreements. While Congress approved the ten year program the funds must be authorized each year and are constantly competing with other federal non-defense spending measures.⁶⁴ The importance of this program was demonstrated in an October 2002 statement by the TRANSCOM commander before the House Armed Services Committee Merchant Marine Panel on the Maritime Security Program (MSP).

"I wholeheartedly support reauthorization of MSP beyond expiration of the current authority on September 30, 2005. The MSP is a vital element of our military's strategic sealift and global response capability. As we look at operations on multiple fronts in support of the War on Terrorism, it is clear that our limited defense resources will increasingly rely on partnerships with industry to maintain the needed capability and capacity to meet our most demanding wartime scenarios. That makes MSP reauthorization even more important as we look toward the future. MSP is a cost effective program that assures guaranteed access to required commercial U.S. Flag shipping and U.S. Merchant Mariners, when needed. The alternative to MSP is, ultimately, reliance on foreign flag vessels manned by foreign crews during crisis. MSP provides the security of resources we must have in a very uncertain world fraught with asymmetric threats. MSP ensures the development and sustainment of critical strategic partnerships favorable to the United States. And, MSP helps ensure the viability of America's merchant mariner pool needed to activate the Reserve Fleet. MSP makes sense. We can't afford not to invest in MSP. I strongly advocate for swift reauthorization."⁶⁵

While the MSP has provided a viable solution to the problem of access to commercial U.S. flagged shipping the longer term problem of the decline in the U.S. population of qualified mariners available to man the RRF is still a major concern. The decline in actual numbers is further compounded by new maritime conventions and codes affecting training and certification requirements. The result is a further reduced pool of merchant mariners capable of sailing DoD surge sealift assets.⁶⁶

The status of the sealift portion of the mobility triad today has been described as healthy. The sealift capability has met three important requirements: prepositioned equipment and supplies afloat for immediate response, surge capability for rapid power projection and sustainment for support of longer duration engagements. In 2002, the last LMSR ship was delivered and the requirements from the MRS BURU were finally reached. That being said however, the sealift requirement from the MRS 05 study did increase by one million tons relative to the previous guidance--MRS BURU.⁶⁷ The MSC's surge sealift ships, Fast Sealift Ships and LMSRs regularly support joint exercises. Programs to improve the RRF have done much to improve the readiness capability. As of December 2000, the RRF had completed 129 of 131 no-notice activations since the end of ODS--a marked improvement over the performance witnessed during ODS.⁶⁸

The MRS-05 study concluded that the sealift investments conducted in response to the MRS BURU have proven to be sufficient. The overall mobility capability can be further augmented through the use of commercial sealift enabled by selective containerization of unit equipment.⁶⁹ The programmed organic dry cargo fleet is adequate to meet projected needs.⁷⁰ However, as good as the condition of the sealift force is now, this capability will continue to grow older. The future requirements of sealift will continue to change based on the emerging environment. Continued programming of funds to recapitalize the ships in the RRF is a must. Funding must be continued to sustain the current level of sealift readiness and capacity of the surge forces, FSSs and LMSRs for the long term. Vigilance and adherence to the vision is a must in order to preserve the important gains made during the past decade for these important deployment assets.

PREPOSITIONING

"While fast sealift and RRF ships proved their worth, the stars of the Desert Shield buildup were the maritime prepositioning ships and the afloat prepositioning ships."⁷¹

Prepositioning of equipment has long demonstrated its value as the Return of Forces to Germany (REFORGER) exercises proved over and over again during the Cold War. Preposition of equipment offers speed and flexibility to deploying forces. The placement of vital stocks requiring only that forces meet up with their authorized equipment significantly reduces the overall time needed to employ combat forces and their associated support packages.⁷² This forward presence in Europe was validated again in 2001 by a General Accounting Office (GAO) report which stated: "A U.S. forward presence in Europe reduces mobility requirements, mobility costs, war-fighting risk, and time required for deployment to operations in Europe or Southwest

Asia. A reduction in any of the four elements of forward presence in Europe would have an adverse affect on mobility requirements, costs, and risk, according to Defense officials.⁷³

The practice of maritime prepositioning began in the early 1980s when the maritime prepositioning ships were created to deploy the Marines Maritime Prepositioning Force. Thirteen MPSs were assigned to three geographic areas in concert with the locations of the Marine Corps three Marine Expeditionary Brigades. Soon after these ships were designated, eleven more ships were designated the Afloat Prepositioning Squadron (APS) with the mission of carrying equipment for Army and Air Force units. Highly flexible and capable of rapid response, the MPSs and APSs were the first sealift-projected U.S. presence to arrive at the beginning of ODS/S.⁷⁴

The MRS recommended the Army support aboard prepositioning ships the equipment needed for a heavy combat brigade and an initial army logistics base. This force was to be the nucleus of the Army's contingency corps in theater.⁷⁵ The Army has followed these recommendations and the current preposition stocks include:

- APS-1 located in CONUS with sustainment stocks
- APS-2 located in Europe with two brigade sets in North-Central Europe, one brigade set in Italy and a battalion of self-propelled artillery in Norway
- APS-3 afloat vessels in the Pacific and Indian Ocean aboard 15 U.S. ships. These carry two brigade sets of equipment and a corps set of combat service support equipment, as well as 30 days' supplies for an Army corps.
- APS-4 in the Pacific with one brigade set in Korea as well as sustainment stocks in Japan and Korea.
- APS-5 in Southwest Asia with one brigade set in Kuwait and one brigade set and a division base set in Qatar.⁷⁶

The Marine MPS program has maintained its status since the size of the Marine Corps has not changed its congressionally mandated force structure. However, the value of MPS has been recognized and an additional LMSR has been designated for the Maritime Prepositioning Force - Enhanced (MPF-E) to provide additional capability to the Marine Corps.⁷⁷ The MRS-05 did not have any specific recommendations to improve the prepositioning portion of the mobility triad.

DO CURRENT CAPABILITIES MEET OUR NEEDS

"The Marines land in Kuwait. The Air Force bombs Saddam Hussein's command posts. Covert teams slip into Iraq. Army tanks rehearse crossing the Euphrates River. Navy crews

race to ready their warships for sea. Transport vessels laden with supplies stream unheralded toward the Persian Gulf.”⁷⁸ One person's view of what may come to be again in the Persian Gulf as the United States prepares itself for possible war with Iraq. Have we applied the lessons from the first Gulf War to better prepare ourselves for this second operation. I believe that the Department of Defense has made great strides in improvement but still remains in pursuit of its goal of global strategic mobility.

“Our ability to rapidly project power worldwide depends on four strategic mobility enhancements: increased airlift capability, additional prepositioning of heavy equipment afloat and ashore, increased surge capacity of sealift, and improved readiness and responsiveness of the Ready Reserve Force.”
1995 National Military Strategy⁷⁹

Airlift continues to be the main emphasis of needed improvements. With the drawdown and eventual elimination of the C-141 fleet the Air Force actually has fewer numbers of airlift aircraft than at the beginning of ODS/S, but the service has continually pushed for acquisition of the C-17. The current fleet of approximately 70 aircraft will grow to 180 aircraft but this remains short of a needed 222 aircraft based on MRS 05. C-5 reliability is still a problem after the toll placed by operations in ODS/S. The Air Mobility Command has initiated programs to improve reliability but the final results of the program have yet to be realized. The results of the improvement program will ultimately affect the total number of C-17 aircraft needed.⁸⁰ While initially following ODS/S the CRAF capability diminished, the efforts of Air Mobility Command to revive this critical capability has met with success. The bottom-line however, is that airlift requirements are not being met and DoD must continue to push for additional funding to improve and procure the aircraft and programs capable of providing rapid global mobility.

From the early beginnings in the 1980s of Marine Expeditionary Brigades aboard thirteen ships to today's afloat prepositioning force, the capability provided by this force is a vast improvement over pre-ODS/S posture. Today the Military Sealift Commands Afloat Prepositioning Force consists of 39 ships operating around the globe. Sixteen Maritime Prepositioning Ships carry equipment and supplies for the U.S. Marines Corps. Thirteen Combat Prepositioning Ships carry equipment and supplies for a U.S. Army heavy brigade and combat support/combat service support elements. Ten Logistics Prepositioning Ships are loaded primarily with Defense Logistics Agency fuels, Air Force ammunition, Marine Corps aviation support equipment and Navy munitions.⁸¹ As potential war with Iraq looms on the horizon, the Army has increased the amount of prepositioned equipment in Kuwait to be able to handle a brigade size - about 6000 troops- deployment.⁸² Even with its potential limiting factor

of correctly guessing where to preposition the equipment, the investment made by DoD in this area has been money well spent and should never be discounted.

“The Army moves by sea.” This comment was made by a retired general officer during a briefing at the U.S. Army War College. Sealift capability is another area that has made substantial improvements. This is the first capability to meet the requirements as set forth in the MRS BURU and remains about as equally capable based on MRS 05 requirements. From a force of zero to twenty LMSRs, the question of surge capacity has been met. The questions of operating status of the RRF that cropped up during ODS/S are being addressed. Since the Gulf War there have been 147 no-notice drills and only two ships failed to sail on time and then only by less than 10 hours.⁸³ The one area that remains a question mark is the availability of qualified crews to man the ships of the RRF. Implementation of the VISA and MPS programs are a step in the right direction but continued pressure from foreign shipping companies remain. This is a long term problem and must be continually monitored and programs to help alleviate it must be vigorously pursued.

The future of strategic mobility remains uncertain. The events of 11 September 2001 have accelerated the transformation efforts of DoD. The U.S. Army's vision of deploying a combat brigade in ninety-six hours and a division within 120 hours multiplies the demand on quick, agile mobility forces. While the Stryker brigades are a step in the right direction with its common chassis to help reduce the logistics requirement, the Army's Future Combat System (FCS) must continue this reduced logistics trend and leverage advance technology to reduce the required equipment needed on the battlefield. Validation of the FCS must be made in concert with a viable deployment methodology to ensure the right fighting force is delivered to the combatant commander at the time and place of their choosing. The efforts of the past decade following ODS/S have made possible the current force power projection capability. However, we can ill afford to rest on these past achievements or we risk once again falling into the pre-Gulf War deployment nightmare.

“Generally, he who occupies the field of battle first and awaits his enemy is at ease; he who comes later to the scene and rushes into the fight is weary.”

? ? Sun Tzu

Word Count = 6,206

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