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Strategic Mobility and Our National Military Strategy:

Can We Get There From Here?

Longer Essay

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Longer Essay
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Strategic Mobility and Our National Military Strategy:

Can We Get There From Here?

Strategic Agility: *The force needed to win is assembled by the rapid movement of forces from wherever they are to wherever they are needed. US Forces stationed in CONUS and overseas will be fully capable of worldwide employment on short notice.*

Power Projection: *Our ability to project power, both from the United States and from forward deployed locations has strategic value beyond crisis response. It is a day in and day out contributor to deterrence, regional stability, and collective security. It becomes an even more critical part of our military strategy since overseas presence will be reduced and our regional focus has been enhanced. (National Military Strategy 1992)¹*

Today's debates are focused on the appropriate national military strategy, service roles and missions, force structure, increases or decreases of carriers, tactical aircraft, tanks, artillery pieces, and other conventional sinews of war. Without sufficient strategic lift these debates including our national military strategy can be summarized in one word - irrelevant. We are continually decreasing the size of our overseas forces and bases. We are now beginning to gap our forward deployed naval presence in some regions. We are a maritime nation which is flanked on either side by two large tank ditches called oceans. Without sufficient strategic lift to transport conventional power across the oceans to the potential areas of conflict, strategic agility and power projection become bankrupt terms. A military

strategy dependent on forces which lack the ability to close quickly with sustained combat power into a theater of war is a military strategy without teeth.

The purpose of this article is to address the strategic lift challenges which face our nation today, highlight positive initiatives which are underway as of this writing, examine some disturbing trends, and look at those aspects of the strategic lift problem which remain to be fixed.

As the Cold War came to a close and the remaining forces from Desert Storm returned to the United States after one of our largest strategic deployments in US history, military planners and civilian leaders had to come to grips with a changing multi-polar world. Our geopolitical thinking would had to be reoriented from our preoccupation with containing the former Soviet Union and its proxies to protection and enhancement of other national interests around the world. As the threat of global war diminishes pressures increase to reduce our forward presence and place a higher priority on problems at home. A defense budget previously focused on a Cold War strategy becomes an a tempting resource to solve domestic problems.

The Clinton Administration took office on a political platform to place domestic issues as a high priority by increasing employment and reducing deficit spending. President Clinton's Secretary of Defense, Les Aspin asked the basic question, "What do we need defense for? For decades we had no reason to ask such fundamental questions about defense. The

Soviet threat had supplied the answers."²

To answer this question, Mr Aspin directed the Office of the Secretary of Defense, the Joint Staff, Services, and the unified commanders to conduct a "Bottom Up Review (BUR)." Much of the BUR looked at our force structure, probable threats, and matched forces to these threats regionally as potential Major Regional Conflicts (MRC). The nature and scope of a possible MRC presented by Mr Aspin often made comparisons to a Desert Storm sized MRC. The most prominent of the MRC models in the BUR are the Southwest Asia (Middle East) and the Northeast Asia (Korea) scenarios. Other MRCs were considered as well as other potential operations less than MRC's designated Lesser Regional Conflicts (LRC). Discussions in the media prior to and after release of the BUR developed into a discourse over how many MRCs the US could handle. One notion offered a WIN-WIN or two simultaneous MRCs, another, a WIN-HOLD-WIN, or winning one MRC while holding a second MRC until forces from the first MRC could be redeployed to the second MRC. Eventually, Mr Aspin chose the force packages and policy in the BUR that required a U.S. capability to win two nearly simultaneous MRCs.

The issue as to which strategy was adopted and the precise definition of what "near simultaneous" means is critical to the strategic lift problem. Specifically the challenge is to define g how much lift we need and how much we can afford. In political terms the advertised capability to win two "near simultaneous" MRCs provides a hedge or deterrent against a potential adversary

attacking a neighbor. This is a possibility while the U.S. is responding in another region, or this accounts for the possibility of the US confronting a larger potential coalition. One analyst believes that more emphasis is being placed on "near" rather than "simultaneous" and that a gap of at least four to six weeks would occur before heavy forces could be redeployed from one MRC to another.³ A study which had been ongoing prior to the BUR is the Mobility Requirements Study (MRS) which was mandated by the Congress in 1991 and directed by the Joint Staff for the Secretary of Defense to determine future strategic mobility requirements and an integrated plan to meet these requirements.⁴ While the BUR has not yet officially changed the MRS, it did establish a new strategic framework for further study. The outcome will be a MRS/BUR update due in October 1995.⁵ The MRS took advantage of the strategic lift data and experiences of Operation Desert Shield/Desert Storm (ODS) concluding that the deployment had been a success but that mobility forces had "imposed considerable risk" and that in the future "the United States needed to deploy its combat power more quickly and with a more robust level of support and force deployment."⁶

The premise of this article is that the legs of strategic lift: primarily intertheater airlift, amphibious lift, sealift, and enhanced throughput measures such as Joint Logistics-Over-The-Shore(JLOTS) need additional sourcing just to maintain the ODS capability or in other words the ability to move a one MRC force.

The Strategic Mobility Problem (Figure 1)

The BUR identified four phases of U.S. combat operations: Phase 1: Halt the Invasion, Phase 2: Build Up U.S. Combat Power in the Theater While Reducing the Enemy's, Phase 3, Decisively Defeat the Enemy, Phase 4: Provide for post-war stability.⁷ The MRS divides forces into early risk - primarily forward deployed or forward leaning forces and late risk - forces such as heavy divisions, theater support, additional carriers and Air Force fighter squadrons. Importantly, strategic lift is significant during all four phases. As depicted in the diagram in Figure 1, a myriad of strategic lift assets are orchestrated and surged to the region of the conflict in order to close forces on a potential adversary to minimize the enemy's military advantage. The sequencing of the surge and its prioritization of arrival into the theater are directed by the supported unified commander-in-chief (CINC). The strategic lift resources are provided by the supporting CINC, U.S. Transportation Command (USTRANSCOM) through his component commanders, Air Mobility Command (AMC), and Military Sealift Command (MSC). Throughput and ground transportation assistance are provided by Military Traffic Management Command (MTMC).

Although scenario dependent an illustrative strategic deployment situation can explain the strategic lift problem (Figure 1). On the day deployment begins (C-Day), afloat prepositioning ships (APS) such as the Maritime Prepositioning Ships (MPS) sail towards the theater objective area. A forward

deployed Amphibious Ready Group (ARG), supported by carriers, could land to evacuate U.S. nationals. Depending on the threat, the ARG could secure or deny enemy occupation of seaports or airfields. U.S. Army airborne forces delivered by strategic airlift could secure additional ports, airfields or other vital objectives to ensure the unimpeded flow of forces. Surge amphibious forces from the Continental United States (CONUS), Marine Expeditionary Forces would deploy to join forward deployed amphibious forces if forcible entry beyond the ARG's capability is required to seize ports and airfields from occupation by hostile forces. Accompanying supplies, equipment and sustainment for surge amphibious forces would be sent from CONUS or forward bases aboard MSC chartered ships or the Ready Reserve Force (RRF) ships administered by the Maritime Administration under the operational control of MSC.

Significant amounts of airlift are required during the early risk period to move forces to the theater to marry up with MPS, unload the ships and stand up a combat ready brigade at a secure port or airfield. U.S. Army light forces would deploy by strategic airlift to link up with ashore prepositioned supply sites [Prepositioning of Material Configured to Unit Sets (POMCUS)] if available in theater. Heavier U.S. Army units and equipment not matched to a POMCUS would deploy from CONUS aboard strategic airlift and additional MSC chartered or RRF ships. Afloat Prepositioning Ships provide initial ammunition and logistic support for U.S. Air Force fighter squadrons. Additional

fixed wing squadrons self-deploy with tanker support to theater airbases if available. Additional aviation ground support and logistics are brought into theater by a combination of strategic airlift and sealift. Strategic airlift provides the sustainment bridge for forces in theater until the arrival and unloading of sufficient supplies from afloat prepositioned ships, or other additional surge shipping.

During the early to late risk period, additional (MSC) chartered and RRF ships move accompanying supplies and sustainment for all Services. U.S. civil liners are hired to bring personnel to support amphibious task forces or forces who could not fly into theater due to enemy damage to airfields. Additional U.S. Flagged ships (outside of MSC Chartered and RRF) are hired to carry additional sustainment and resupply. Foreign charters, if necessary, are hired to fill shipping shortfalls which cannot be met by U.S. flagged ships. Other vessels returning from the early risk period are returned for second sailings. Large amounts of shipping are required to move heavy U.S. Army theater logistics which will eventually provide common user supply support such as subsistence, fuel and ground ammunition for all services in theater.

Should a potential adversary seize the initiative in the early stages of deployment and render seaports temporarily or permanently unusable, Navy Logistics-Over-the-Shore (LOTS) capability as part of an amphibious task force would begin construction of elevated causeway piers to begin throughput in

the amphibious objective area. Joint LOTS with additional U.S. Army causeways, lighterage, and materials handling equipment would fall in on the Navy LOTS and assume responsibility for throughput after termination of the amphibious objective area.

The Desert Storm Mindset

While the above deployment scenario unfolds rather nicely consider that during ODS we had significant cooperation from two major parties to make this strategic lift work. One was the Kingdom of Saudi Arabia which made available to us the ports of Ad Damman and Al Jubayl among the larger seaport facilities in the world. These Saudi ports have significant ship berthing capacity, ship refueling, repair, drydocking, practically unlimited staging, concrete hardstands, warehousing, and an abundance of materials handling equipment from forklifts to large modern container handling systems. Navy LOTS and JLOTS were therefore not employed for ODS.

The Saudis also provided us with Dharain, a very capable airfield to receive our strategic airlift. Through the foresight of good planning by U.S. Central Command (USCENTCOM) and concurrence by the Saudis prior to ODS, prepositioning of U.S. equipment and supplies and the availability of infrastructures such as facilities and electric power greatly reduced what would otherwise have been a significant lift requirement. Additionally the Saudis provided us with host nation support including locally available large bulk items such as water, food, fuel, and line haul trucks. What is significant about this support is not simply

that it was provided and enhanced our capability to fight but rather that we did not have to lift it from CONUS.

The second major party to make this strategic deployment work was our adversary. Saddam Hussein gave the coalition forces significant multipliers in the strategic lift problem; time, approximately 161 days of deployment prior to offensive operations and his decision not to move Iraqi forces south in August 1990 to threaten these critical Saudi ports, airfields, and host nation support infrastructures. Airlift and sealift lines of communication were not threatened nor did strategic transporters encounter combat attrition. Because the Suez canal was kept open ships only travelled a total distance of 9,000 vice 12,500 miles per trip around Africa.⁸ Most importantly there was no concurrent MRC.

The ODS experience provided us with other salient lessons. We learned that we may have to deploy great distances with very little warning. By air, U.S. forces travelled 7,000 miles from the east coast and 10,000 miles from the west coast. As we look at the geopolitical map, distances from CONUS to future potential MRCs as delineated in the MRS/BUR do not vary significantly from ODS. We have also learned from history that today's allies might not be tomorrow's friends. Despite the tremendous international outcry over Iraq's invasion, the coalition was held together on sometimes shaky ground. We may not be so fortunate in a future MRC. There could be much less popular support. We may have to enter a country that has neither the host nation infrastructure

support available nor the willingness to allow geo-prepositioning of U.S. supplies and equipment in peacetime prior to the conflict. There may be less than adequate availability of ports and airfields available. There may not be the availability of foreign flag vessels in a politically unpopular conflict. During ODS, foreign flag ships moved 27% of U.S. unit equipment and 20% of dry cargo.⁹

Therefore it is very possible that we may have to deploy U.S. Forces unilaterally, with a substantially larger lift requirement with reduced allied support and fewer lift assets available as compared to ODS.

The Airlift Problem

The airlift provided during ODS was significant. Airlift accounted for the transport of 99% of all U.S. personnel in Saudi Arabia and 5% of all cargo. If ODS is to be used as a paradigm for any future mobility studies for potential MRCs, consider the sheer volume moved by airlift to from August 1990 to March 1991:¹⁰

<u>Passengers</u>	<u>Cargo (Tons)</u>	<u>Sustainment (Tons)</u>	<u>Avg Tons/Day</u>
500,720	334,916	205,125	2400

Consider some possible airlift closure requirements for early arrival stated in the MRS for the airlift surge of our early risk forces. The MRS defines early risk as arrival within the first 2 weeks from C-Day:¹¹

<u>Forces</u>	<u>Closure Time (Days)</u>	<u>C-141 Sorties</u>
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Marine Air Alert Force	4	94
Marine Expeditionary Brigade	10	249
Army Light Brigade	4	279
Army Light Division	12	1350
Air Force Squadrons	15	270

The key issues associated with the airlift problem are the determination of the quantities of passengers/cargo which must be lifted stated in millions of ton/miles per day (MTM/D) and the most operationally feasible and affordable aircraft mix to get us there from here. Other key factors include but are not limited to aircraft crew and support personnel, intermediate support base availability, airlifter refueling ability, flyover rights, throughput capability at the aerial ports of debarkation (APOD), and availability of material handling equipment/personnel at the APOD. Cold War planners assessed a strategic airlift requirement of 66 (MTM/D) primarily to support the transport of U.S. reinforcements to Europe. Actual available airlift at the end of the cold war was approximately 52 MTM/D. For the post cold war world the MRS did not state a requirement but rather set a target of 57.5 MTM/D as a cost based mobility solution with an accepted moderate level of risk due to budgetary constraints.¹² The BUR anticipates the same level of capability as ODS for a future MRC.¹³

As depicted in Figure 2, the retirement of the aging C-141 core intertheater airlifter will be completed by the year 2006. There are a total of 209 C-141's today. The rest of Figure 2 depicts the options which are being proposed to fill the gap caused by the retirement of the C-141. The proper mix, type, and

most cost effective aircraft is perhaps the most contested and possibly the most critical aspect of the strategic lift problem today. The options under consideration include the following:

Continued production of the C-17: MRS has validated production of 120 C-17s. Five C-17's have been delivered to date.

Purchase of Non-Developmental Airlift Aircraft: (NDAA). Purchase military useful versions of commercial aircraft or purchase of additional existing military aircraft such as the C-5B which require no additional development. Commercial versions must be capable of carrying palletized and oversize cargo such as wheeled vehicles. NDAA is not a specific type of aircraft but rather an alternative or supplement to the C-17.

Purchase or lease excess commercial aircraft: The benefits would be immediate availability, and lower cost relative to development and production of another aircraft like the C-17.

Extend service life of C-141: This would extend an existing aircraft with older technology, lower capacity and less efficiency.

Increased reliance on Civil Reserve Air Fleet (CRAF). This would increase the number of civilian aircraft contracted by the government to support the military during wartime.

The C-17 Dilemma

The C-17 was to be the CINCTrans answer to its core airlift requirements. The idea behind the development of the C-17 was to find an aircraft that could carry large payloads over a long range, be able to airdrop personnel and cargo, like a C-141, land

on short, unimproved runways, conduct low altitude parachute extraction drops like a C-130, and carry large outsize cargo like a C-5. In other words, to a somewhat greater or lesser degree, the C-17 was to possess virtually all the capabilities of existing airlifters rolled into one.

The outcome of 13 years of development and testing of the C-17 has been acquisition gridlock. The Joint Requirements Oversight Council (JROC) in August 1993 confirmed key C-17 performance parameters to include delivering a 130,000 pound payload 3,200 nautical miles, landing 160,000 pounds on a 3000 foot runway, conducting a 180 degree turnaround in 90 feet on the ground. The C-17 would have the ability to back up on the ground under its own power while climbing a 2% grade which would reduce aviation ground support equipment and allow the C-17 to turn around on narrow expeditionary runways. The JROC requirement validated the ability of the C-17 to perform airborne missions to include airdrop of 102 paratroopers, 110,000 pounds of equipment or 40 container delivery bundle systems. And like the C-5, the C-17 must carry outsize cargo.

The most significant advertised capability of the C-17 is the combination of all these features: to fly cargo directly to the forward battle area without the time consuming downloads of cargo at large intermediate airbases for further transport by smaller intratheater airlifters like the C-130's. This concept is known as "direct delivery." ¹⁴The C-17, through its design can extensively improve the maximum on the ground(MOG), number of

aircraft at a single airfield(See Figure 3). The acquisition cycle has surfaced many problems with the C-17; however, program advocates argue that none of the problems are insurmountable. Depending on which account one believes, there is plenty of blame to be shared by the manufacturer, McDonnell-Douglas, for cost overruns (approximately \$1.2 Billion), late decisions by the government to add new capabilities, alleged micro-management by the Air Force, and waning support by Congress and OSD.¹⁵

Other detractors include the significant cost of the aircraft. GAO estimates a cost of \$300 million to \$350 million per aircraft. In fact, according to GAO, " a plausible argument could be made that the unit cost of the C-17 would preclude its use as a direct delivery aircraft[because it is too expensive]."¹⁶

Frustrated by the C-17 program's progress, in December 1993, the Secretary of Defense announced a decision to give the C-17 program and contractor 2 years to improve their performance. At this juncture in the acquisition cycle, November 1995, there will be a total of 40 C-17s delivered or on order. Concurrently the MRS BUR update mentioned previously will revalidate airlift requirements. Subject to contractor performance and revalidation of requirements by the MRS/BUR update, 40 to 140 additional C-17s could be purchased or the equivalent lift capacity achieved by purchase of NDAA.¹⁷

Herein lies the C-17 dilemma. As acquisition decisions delay production of C-17s, by the year 2001, 34 C-17 equivalents will

have to be built in addition to the MRS validated 120 to keep pace with the loss of lift capacity resulting from the retirement of the C-141s. Since there is presently no commitment from the government to the contractor to fill additional orders for the C-17 beyond 1995, it is likely that the current unit cost will only increase.

Further, as peacetime operational tempo continues with routine exercises and support of LRCs such as deliveries to Somalia and airdrops in Bosnia, the accelerated retirement and reduction of C-141 lift capacity is exacerbated. In May 1993, for example, CINCTrans restricted the entire fleet of C-141s to 74% maximum payload. The overall maintenance capable rate of the C-5 today is approximately 66%.¹⁸ Another study showed that during ODS the availability rate of the C-5 was 68% due to maintenance and supply problems and sometimes as low as 50%. Even more significant is the fact that the lower availability rates were experienced during October 1990 during critical airlift surge periods. The C-5 was flying over 3 times its normal cycle.¹⁹

Finally, a crucial factor in the intertheater airlift equation is the reduction or near elimination of en route basing for strategic airlift in Europe. These bases were essential for refueling strategic airlift as well as for providing a holding area to await openings at the crowded Saudi airfields. Loss of these bases would adversely affect a potential Southwest Asia MRC. Zaragoza, Spain which handled 18% en route basing for ODS is gone. Torrejon, Spain (31%) is questionable after FY 94 and Rhein

Main, Germany (27%) is under increased domestic pressure to reduce traffic due to noise abatement.²⁰ These factors increase the relevance of the C-17's direct delivery capability.

Buy or Lease Commercial Airlift Options:

While the acquisition of the C-17 is adjudicated, planners are looking at alternatives should the program fail or be significantly reduced. The NDAA commercial option and the buy/lease option have the advantage of using existing aircraft without significant development and at less cost than a C-17. For example, a 747 could be purchased for approximately \$140 million. The disadvantage is that today's commercial aircraft have very limited capability of carrying outsize cargo. The Air Force estimates that 85% of the cargo carried by airlift during ODS could not fit or was extremely difficult to load on civil aircraft.²¹ Also, any commercial aircraft purchased today would require upgraded militarily compatible navigation systems, and larger, heavier doors and floors to handle military cargo. Nor would commercial aircraft be capable of aerial refueling or landing on unimproved runways. Many of these modifications would eventually add to the base price of the aircraft.

Commercial aircraft would not be capable of unloading without compatible materials handling equipment. Existing materials handling equipment such as K-loaders are not compatible with commercial aircraft in most cases. Existing military airlifters have rear ramps which can be lowered to the ground facilitating unloading. Commercial aircraft alternatives do not

have rear ramps.

Finally, and one of the most significant problems for commercial aircraft, is the inability to conduct airborne operations for personnel and cargo. The "T" tail on commercial aircraft makes parachute drops nearly impossible. Without a rear ramp, air dropping cargo with existing air cargo delivery systems is not feasible.

The other NDAA option of purchasing additional C-5B aircraft would on the surface appear to be a cost effective alternative by reopening a pre-existing production line. Placing the C-5B back on the production line would, however, require development costs and subsequent modernization. More than likely development would include a new engine.²² While this option would continue to fulfill airlift requirements for outsize cargo, and positively impact the MTM/Day requirement the C-5 would still be limited to airfields with long runways and still continue to run the risk of maintenance delays as experienced in ODS.

Extending the C-141

Besides the cargo weight restrictions mentioned earlier, the C-141 fleet is presently undergoing depot level maintenance to correct "weep hole" cracking in the wings. It is anticipated that 156 of the 209 aircraft in inventory will likely have restrictions lifted by April 1994 with the remaining aircraft being completed by December 1994.²³ The extension of the C-141 service life has the advantage of leveraging a proven workhorse with an impressive safety record and a large inventory of trained

aircrews. The disadvantage would be placing scarce dollars into older technology that has approximately one half the lift capacity and cargo size of the C-5 or the C-17.

The CRAF Option

Based on a 1951 agreement civilian airlines promised air carrier support during wartime in exchange for guaranteed business during peacetime. For the first time in history USTRANSCOM CRAF Stage I during ODS. Later in January 1991, Secretary Cheney activated CRAF Stage II. In all, CRAF moved approximately 55% of the passengers and 20% of all cargo moved by air during ODS.⁴ Activation of each level of CRAF provides significant additional lift. (See figure 4).

There were, however, several problems encountered during the overall successful CRAF activations in ODS which have led to difficulties in negotiating future CRAF arrangements. A large obstacle has been Title XIII Insurance and Indemnification Reserves currently totalling \$53 million which is inadequate to cover the loss of even a single 747. Many CRAF airlines sublease aircraft from other airlines which means the lessors may consider CRAF too risky in a potentially hostile environment without sufficient insurance coverage. As air carriers diverted aircraft to ODS, other foreign carriers encroached on previously US held international routes. Most importantly due to fixed cost prices, CRAF assets which were activated were not compensated for lost revenue for potential business when they sat idle. Economic realities have put former large CRAF contributors such as Pan Am

out of business.

While the CRAF has the advantage of providing significant surge lift in wartime at relatively low upkeep during peacetime it has the disadvantage of questionable reliability. This is due to large fluctuations in size of aircraft fleets relative to the business climate. Since ODS, there have been some positive initiatives. CINCTRANS now has the authority to activate CRAF Stages I, II, and III with Secretary of Defense concurrence.²⁵ The FY 94 CRAF contract requires only 15% of each CRAF airline's inventory to be committed so that the playing field is level and carriers don't go broke when activated. A Secretary of the Air Force initiative is exploring access to military bases for CRAF participants for weather and technical stops where landing fee and surcharges are waived.²⁶

The Sealift Problem

Unlike the strategic airlift problem which awaits the outcome of the C-17 dilemma, the sealift program has more bright spots in terms of funding and steps towards "getting well" but there are still many challenges ahead. The fact that during ODS sealift carried 95% of all cargo makes it imperative that U.S. military sealift gets well and stays healthy. Unfortunately, it took a war to initiate sealift reform. The sealift requirements and present acquisition program to meet those requirements are depicted in Figure 5. The MRS calls for a total requirement of 16 million square feet (sqft) although the eventual goal will be 20-22 million sqft depending on the outcome of the MRS/BUR Update.²⁷

The Commander Military Sealift Command describes three operating sealift strategies for the supported warfighting MRCs; afloat prepositioning, surge, and sustainment sealift.²⁸ (See Figure 5) APS contain readily available equipment and supplies which remain afloat and can be diverted to an MRC before hostilities begin. The APS includes 25 ships: 13 MPS divided into three squadrons with 30 days of supplies and equipment each for a 16,500 Marine Expeditionary Brigade; and 12 ships which contain readily available supplies, cranes and barges to the Army, Navy, and Air Force. The MRS has called for the construction of nine Large medium Speed Roll On/Roll (LMSR) ships, totalling 2 million sqft of capacity. These LMSRs will contain a prepositioned U.S. Army Heavy Armor Brigade (HAB). Additionally the HAB (LMSR PrepO) will include 2 container ships for theater logistics.²⁹ In order for the APS programs to be successful, significant surge strategic airlift with personnel and equipment must arrive ahead of the APS for unloading and staging.

Surge sealift includes MSC chartered ships including the eight existing Fast Sealift Ships (FSS). Likely, surge shipping will include other MSC chartered ships and RO/RO ships from the Ready Reserve Force (RRF) ships under the operational control of MSC. The surge ships move additional heavy outsize vehicles such as tanks, artillery pieces and trucks.

Sustainment containing supplies and combat service support infrastructure follow the surge ships primarily using any remaining RRF and commercial U.S. Flag ships. The MRS calls for

an increase of 11 LMSRs(3 million sqft) to support surge lift of heavy Army divisions and support from CONUS. The RRF will eventually increase from 96 ships to 142 by FY98. Since Desert Storm ,12 RO/RO ships have been added to the RRF with four more being added this year.³⁰ In all, a total of 20 LMSRs will be constructed through 1999 at an estimated cost of \$11.6 billion.

The procurement of ships and the subsequent infusion of 11.6 billion dollars into the maritime industry through 1999 appear on the surface to be a boost to the military sealift problem, however, there are some disturbing future trends. Looking at Figure 5, there is a noticeable drop in sealift capacity as the year 2006 approaches due to scheduled ship retirements. By that time there may not be a Desert Storm or its equivalent fresh in the minds of planners and lawmakers. The U.S maritime industry is not a self-sustaining entity today like our commercial airline industry. The maritime industry requires subsidies in order to survive. Cheaper foreign flag ships with lower wages and safety standards reduce the ability of commercial U.S. flag shipping to compete domestically and internationally. Even more problematic are the higher subsidies that countries such as Japan, Germany, and Korea pay to their respective shipping industries. Even worse is that they appear unwilling to stop.³¹

More disturbing are the trends in our shipbuilding at home. As of June 1, 1993 there were a total of 375 oceangoing ships in the United States, a decrease of 14 from 1992. During the same period there was only one commercial ship under construction in

the United States. Of these ships, USTRANSCOM estimates that 260 could be useful for military purposes.³²

The trend in international commercial shipbuilding today is more towards internodal containerships and less towards break-bulk and RO/RO ships. In order to save costs many of these container ships are built as nonself-sustaining which means they do not have their own ship's cranes and must be unloaded with shipside or shoreside cranes.

While the military is attempting to increase containerization particularly for bulk supplies such as ammunition, there is still a large surge demand to carry vehicles and other critical equipment which are not feasible for containerization. Although there are temporary quick fixes such as flatracks to secure vehicles aboard container ships, it is time consuming and the flatracks are not always readily available at the right time and place. Of the 2010 flatracks available during ODS only 1230 were used.³³ More than likely, the speed and utility of loading a militarily compatible and available ship was preferred to breaking out or locating the cumbersome flatracks.

In fact, it was the high surge demand for RO/RO and break bulk ships which led to the heavy demand for foreign flag vessels during ODS. Interestingly, none of the 99 available U.S. commercial ships in the Sealift Readiness Program (SRP) were activated during ODS (Figure 6).³⁴ The SRP is a reserve of U.S. commercial ships belonging to carriers which receive some form of federal subsidies and agree to commit 50% of their ships to MSC

during war. The major limitation was the fact that 74 of the SRP were container ships. Foreign RO/RO and break bulk ships were in higher demand because they could haul militarily compatible cargo and they were readily available.

Other shipping resources include the Effective U.S. Control Ships (EUSC) (Figure 6) of 44 militarily useful and dry cargo ships and 66 militarily useful tankers. These ships are owned by U.S. citizen companies and registered in nations whose laws do not preclude the U.S. from requisitioning those ships.³⁵ Other sources which could be called upon would be approximately 400 ships from NATO countries. These ships are still on the books for reinforcement to Europe, however, the use of these ships would have to be part of a NATO approved operation. MARAD would coordinate the use of these ships on behalf of MSC.³⁶ Beyond these resources, ad hoc arrangements similar to the ODS Special Middle East Sealift Agreement (SMEASA) with four major carriers to carry sustainment could be created.

The use or dependance on foreign shipping continues to spark a debate beyond the ODS mindset. The argument goes to the very root of the debates over our national strategy. During ODS on one given day, February 25 1991, there were 168 dry cargo ships in use ; 74 were foreign flag and 25 were privately owned U.S. flag ships or 15% of the total. The other 69 ships were owned by the U.S. Government.³⁷ A recent GAO report recommended DOD study sealift options with greater reliance placed on foreign ships.³⁸ The issue is whether or not the U.S. should be able to respond to

a crisis unilaterally and possess the strategic lift to support unilateral response.

Another trend is the steady decline of U.S. qualified merchant marines to run the ships. MARAD predicts that by the year 2000 the nation will be short 1,600 seaman to operate the RRF. Of the approximately 9,700 licensed and unlicensed seamen today, MARAD predicts there will be less than 3,200 by the year 2000. There would be a shortage of 1,600 seaman to operate the RRF and possibly 7,200 short to operate the commercial ships necessary for sustainment operations.³⁹ Some hints of the seriousness of these manpower shortages were felt during ODS. Of the 74 RRF ships recalled 40% arrived available to load on time, 40% were seven days late and 20% were 30 days late or longer. While manpower shortages were not the single contributor to the late arrivals, it was certainly a factor.⁴⁰ Exacerbating the issue is that U.S. seaman feared losing their current jobs since they presently do not enjoy reemployment rights like military reservists.

Many positive initiatives are underway which may alleviate some of the sealift shortfalls. The larger problem of maintaining our maritime infrastructure of ships, shipbuilding, shipyards, size of the merchant marine and weaning away from subsidies will take major surgery. A Merchant Marine Reemployment Act to encourage seaman to participate in future wartime emergencies has been passed by the House and is now before the Senate.

USTRANSCOM will invest approximately \$1 billion in the U.S.

maritime industry to provide internodal and specialized transportation services to DOD. Also, containerization has become the standard for ammunition and sustainment for cargo destined to ports which can handle containers.

Another issue which is contentious between USTRANSCOM and MARAD is the Maritime Security Program(MSP). Favored by MARAD, this program provides payments of \$1 billion to ship operators over the next ten years for 52 ships at \$2 million to \$2.5 million per ship, per year. Funds for this program would be sourced or offset through an increased tonnage tax of \$100 million per year on ships entering the U.S. from foreign ports during their first five visits. Ships participating in this program must be militarily useful and less than 15 years old. Foreign ships less than five years old can also participate. USTRANSCOM favors continuation of the Operating Differential Subsidy which is a higher direct payment to ship operators without offset.

In a step towards maintaining readiness, USCINCTRANS has initiated "no notice" activations of RRF ships to preclude the tardiness encountered during ODS. Six ships were activated between September and November 1993 and all six met the required readiness criteria.

Amphibious Shipping

To avoid the ODS mindset of free and easy access to modern seaports and airfields, it is imperative that our forward deployed Amphibious Ready Groups(ARGs) are maintained and that a

forcible entry capability is maintained from the sea. ARGs generally consist of sailors and a Marine Expeditionary Unit (MEU) aboard three to four ships. The ARG ships normally consist of a large ship with helicopter deck (LHA/LHD), a ship with secondary aviation (LPD/LX) and one or more ships as required to support ARG requirements.

While amphibious ships (gators) are not used in the same strategic sealift vernacular as those assets retained by MSC making multiple surge trips in the transport mode, the gators do carry Marines, vehicles and 15 days of supply. The gators are nonetheless a strategic lift asset which enables other lift assets to conduct unimpeded unloading of follow-on forces in a theater opposed by hostile forces ashore.

In order to maintain the current forward presence of four ARGs on station, a 12 ARG requirement has been universally accepted to maintain a forward presence, compensate for training cycles, permit turnover at sea from the ARG currently on station to a replacement ARG, and support shipyard rotation.⁴¹ The current Navy Posture Statement reflects a requirement for 11 ARGs. For example, beginning this year U.S. Central Command will have five ARGs to fill a two ARG on station requirement in the region. Fleet schedulers will soon have ARGs extended in distance from their normal stations or gaped in order to meet the requirement.

By late 1994 the number of gator ships available will be down from 60 in 1993 to 35 at the end of 1994.⁴² Also jeopardized

will be the stated MRS requirement of 2.5 Marine Expeditionary Brigades or the surge amphibious capability required for forcible entry capability. The accelerated retirement of these gators was accepted to allow for funds to build new ships for the Gator Navy. According to one account, from now until the year 2002, the Marines will be limited to a lift capacity of approximately 1.7 MEBs. In order to make up for the lost square footage Marines may have to trade off space normally allocated on ships for landing craft, vehicles, equipment or a combination of both to retain a 2.5 MEB capability.

Logistics Over the Shore

A final hurdle to overcome the ODS mindset is to be prepared for a scenario whereby seaports in the theater of operations are either not available or rendered temporarily useless by enemy damage or chemical warfare. This situation could become more likely in the future due to the increased proliferation of weapons of mass destruction. In such circumstances LOTS operations would give the unified commander the flexibility to accomplish throughput of supplies and equipment across a shoreline. Joint LOTS operations would take place when two or more services conduct LOTS.

Since there are no recent wartime experiences for LOTS to draw comparative analysis, the challenge is to retain the current levels of capability and ensure that JLOTS continues to be exercised in peacetime and does not fall victim to the budget cuts. While the current MRS does not state a JLOTS requirement,

the data is being gathered at this writing for inclusion in the forthcoming Volume III of the MRS. Recent JLOTS exercises have revealed some shortfalls which need to be addressed.

Causeway sections used for building barges and piers are in some cases incompatible between those used by the Army and the Navy. There are some incompatibility problems between the Army's landing craft and the Navy's elevated causeway system. Either insufficient or incompatible communication systems exist between Army and Navy landing craft causing lack of control of lighterage."

Positive initiatives include designation of USTRANSCOM to perform oversight for JLOTS issues with the Services and the supported CINCs. There is an initiative underway by USTRANSCOM and the Joint Staff to establish Joint Research and Development efforts to ensure future interoperability. Also recommended has been the inclusion of JLOTS exercises with normally scheduled exercises rather than as "stand alone" exercises.

Conclusions

The construction of 40 vice the originally MRS validated 120 C-17s will create an unacceptable gap to meet the loss of airlift caused by the retirement of the C-141. Even if an NDAA substitute is approved, there will be a gap caused by the time it takes for the aircraft to reach the fleet. Purchasing or leasing "off the shelf" commercial aircraft might give a boost to our airline industry and meet some of our airlift needs but will fall short in meeting military needs. Increased reliance on CRAF to meet

surge airlift is wishful thinking because CRAF still lacks cargo capacity and is risk dependent based on its ties to economic swings. CRAF is very efficient, however, for moving passengers. While the C-17 has become expensive, its military utility is unmatched by the other options.

The shortage of airlift and the C-17 dilemma could negate many of the positive sealift initiatives. The addition of two million square feet of afloat prepositioning for the Heavy Armor Brigade added to the existing three MPF squadrons will be of little use without an airlift bridge to meet the ships and sustain the forces until the ships can be unloaded. While it is unlikely that all prepositioning ships will be unloaded simultaneously and that forces will likely be sequenced by the supported CINCs, the tremendous distances to be travelled to potential MRCs today with a shrinking airlift fleet may become a bridge too far.

While the improvements in sealift capability are helpful, the larger issue of a self-sustaining U.S. commercial shipping industry to augment future military lift does not look good. Direct subsidies of the shipping industry through tonnage taxes or direct purchase of ships for MSC charter will fix the short term but not the long term sealift problem.

Lessons learned from OSD can be extremely valuable provided we pay attention to all the lessons. Future conflicts will not likely allow us carte blanche access to modern ports and airfields particularly in lesser developed countries or against

potential enemies with weapons of mass destruction and advanced conventional missiles. In this regard we must maintain an airlift fleet which can land on multiple, shorter, unimproved airfields and conduct airborne operations. We must retain forward deployed amphibious forces which can establish a toehold at these key throughput facilities or surge additional amphibious forces should forcible entry be required to take them back. We must be prepared to conduct LOTS operations should ports become damaged or destroyed. We must be capable of surging heavy, sealifted cargo without reliance on foreign ships. We must be capable of getting there from here unilaterally.

Finally, we must be realistic in the assessment of our ends and means in the determination of our national military strategy. The MRS is a positive step in determining our means. The resolve and resources to attain those means will determine the limits of our ends. While declaring a policy that we can win two "near simultaneous" MRCs may have deterrent value, it is not realistic in terms of our current or near future strategic lift capability. According to General Hoar, CINCCENT, "Strategic lift in this country is broken right now; the shortage of long range military cargo planes and fast cargo ships is so severe the military would be hard pressed to fight even one war."⁴⁴

We'll get there from here but we'll win only if we get there soon and win quickly.

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