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RESEARCH REPORT

STRATEGIC MOBILITY AND THE
DECLINE OF THE UNITED STATES MERCHANT MARINE

LT COL STEPHEN D. BOYCE

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AIR UNIVERSITY
UNITED STATES AIR FORCE
MAXWELL AIR FORCE BASE, ALABAMA

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STRATEGIC MOBILITY
AND THE
DECLINE OF THE UNITED STATES MERCHANT MARINE

by

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A DEFENSE ANALYTICAL STUDY SUBMITTED TO THE FACULTY
IN
FULFILLMENT OF THE CURRICULUM
REQUIREMENT

Advisor: Colonel Charles J. Jernigan III

MAXWELL AIR FORCE BASE, ALABAMA

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DISCLAIMER

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EXECUTIVE SUMMARY

TITLE: Strategic Mobility and the Decline of the United States Merchant Marine

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↳ The military strategy of the United States remains heavily dependent on our ability to rapidly deploy and sustain our combat forces in overseas theaters. While sealift must play a prominent role in the strategic mobility equation, our capability in this critical area has steadily declined to the point where it may no longer be able to support our global war plans. Impressive gains in Navy organic sealift have obscured an unprecedented decline in the United States Merchant Marine--the primary source of sealift to support defense needs in a war or national emergency.

This paper analyzes the strategic mobility triad and its components--strategic airlift, prepositioning, and strategic sealift. It explains the synergy these components must achieve and the important contribution sealift must make to support defense needs. The author then analyzes the factors which collectively have caused the decline in our sealift capability, traces how and why this has occurred, compares sealift requirements and capabilities, and offers both near and long term courses of action to insure we are able to meet defense needs while restoring the United States Merchant Marine to a position of strength and viability. *Merchant vessels marine transportation.*

(1720)

X

BIOGRAPHICAL SKETCH

Lieutenant Colonel Stephen D. Boyce (B.A., DePauw University; M.A., University of Maryland) is a career logistician with primary emphasis in the field of transportation. His experience includes aerial port assignments with the Military Airlift Command at Clark AB and Andrews AFB; command of a transportation squadron in Tactical Air Command at Howard AFB; plus staff transportation and logistic plans assignments with the Military Traffic Management Command, the Air Staff, and most recently with the Logistics Directorate of the Joint Chiefs of Staff. Lieutenant Colonel Boyce is a graduate of the Armed Forces Staff College and the Air War College, class of 1989.

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CHAPTER I

INTRODUCTION

*"The best fighting units in the world are of little value to the exercise of United States foreign policy and the protection of United States interests if they cannot be moved, landed, and supported where they are needed."
(Association of the United States Army, 1978)*

"Nothing happens until something moves." (Unofficial motto of the United States Army Transportation Corps)

In 1978 the Association of the United States Army published a special report entitled "Strategic Mobility; Can We Get There From Here--In Time?" While the conclusions reached in the study were by no means revolutionary, and certainly came as no surprise to professional transporters, the report was significant in that it graphically illustrated the collective shortfalls in our defense transportation system and the resulting impact on our ability to deploy and sustain our fighting forces in the event of a major war. The report addressed all modes of transportation with special emphasis on the strategic mobility triad of airlift, sealift, and prepositioning and made prudent recommendations to alleviate critical deficiencies. (25/1-22)

A decade later, despite the impressive revitalization of the US military under the Reagan administration, the prognosis for strategic mobility is, at best, only marginally better. While our gross capability has improved over the last ten years, this growth, when compared to increasing demands, still falls far short of requirements. Perhaps of even greater significance is

the lack of balance among the components of the mobility triad.

Relatively speaking, strategic airlift has perhaps fared the best. Several measures have been taken to enhance US strategic airlift capability. These include modifications to increase the cargo-carrying capability and extend the range of the C-141 fleet, a modification to strengthen the wing and thereby extend the service life of the C-5 fleet, the procurement of additional C-5 aircraft, and the introduction of the KC-10 fleet into the inventory. Collectively, these enhancements have resulted in a steady growth in overall strategic airlift capability towards the established goal of 66 million ton-miles per day. The near-term advent of the next generation of airlifter--the C-17 insures the continuation of this positive trend.

Likewise, prepositioning programs have proceeded and, while many of the weaknesses inherent in the overall concept of forward positioning of equipment remain, the current status of prepositioning today reflects a far greater capability than it did a decade ago. Levels of fill and readiness ratings for Prepositioning of Materiel Configured in Unit Sets (POMCUS) in the European theater continue to improve and maritime prepositioning in the form of the Afloat Prepositioning Force and the Maritime Prepositioning Ship program have likewise added considerable capability to overseas theaters while simultaneously reducing the remaining lift requirement that would have to come from the continental United States (CONUS).

Unfortunately, there is considerably less good news when we

focus on strategic sealift. Certainly, there have been changes that appear to offer increased capability such as the procurement and subsequent military conversion of the eight SeaLand SL-7 vessels--now designated Fast Sealift Ships, the increase in the number of ships in the Ready Reserve Force (RRF), and the development of logistics over the shore (LOTS) techniques. Unfortunately, however, these advances don't equate to an overall increase in sealift capability as they don't begin to compensate for several adverse developments within the commercial maritime industry--historically the major source of augmentation sealift to meet military requirements. These factors include the significant decrease in the number of ships in the US merchant marine fleet, changes in ship type which are less appropriate for most military cargoes, the erosion of US ship building and repair capability, and the rapidly declining number of merchant mariners necessary to crew a surge sealift requirement. The fact remains that the great preponderance of our sealift capability must come from the US merchant marine and this industry continues to decline at an ever increasing rate. If this negative trend in sealift continues, it is unlikely the United States will be able to support its wartime strategy. Indeed, sealift may well represent the proverbial achilles heel in our strategic mobility triad.

This paper will examine the strategic mobility triad with special emphasis on sealift and the precipitous decline in the US merchant marine. It will briefly discuss the components of the

strategic mobility triad and the all-important synergy this triad must achieve. It will then examine our sealift capability and explain what the shortfalls are; why they exist; and finally, address both near and long term corrective actions to alleviate our sealift shortfall.

CHAPTER II

THE STRATEGIC MOBILITY TRIAD

"The two principles of U.S. military strategy--deterrence and forward defense--place a premium on rapid deployability. They require that we have sufficient amounts of airlift and sealift, and of prepositioned material overseas, to maintain a credible deterrent while minimizing our peacetime presence in allied nations. They require that we be able to move major combat forces rapidly to endangered areas, and to support them for as long as their presence is needed."

(Caspar W. Weinberger, former Secretary of Defense)

The key to effective strategic mobility for the United States lies in the proper integration and coordination of its component elements--strategic airlift, strategic sealift, and prepositioning. Not only are all three components individually necessary, but they must also be in proper balance with regard to each other. With few exceptions, the component elements of this triad can not be substituted for each other. Each component has discrete strengths and weaknesses and accordingly has inherited particular roles and missions which capitalize on their respective abilities. Indeed, the axiom that the whole is greater than the sum of its parts fully applies in the strategic mobility equation and the achievement of synergism within this triad is absolutely imperative for the United States to successfully execute its global war plans. (27/26-30) Before addressing any individual component in depth, we must fully understand our basic underlying strategic mobility strategy and the unique attributes and limits of the individual components of the triad that must execute this strategy.

Essentially, US warfighting strategy in any major overseas confrontation envisions three stages of defense. In the first stage, forward defense will be prosecuted with in-place forces. Hopefully, these forward deployed forces will be able to contain the enemy until the second stage of defense arrives in the form of rapid airlift reinforcement. The first airlift will be dedicated to moving the initial forces contained in the supported commander's time-phased force deployment list--in theory the highest priority combat elements needed to quickly augment the in-place forces. To a large measure, this will consist of additional personnel who will marry up with overseas prepositioned equipment plus critical cargo shipments which must come from out of theater and which must arrive during the first ten days or so of the conflict--before sealift can deliver them. But the combination of in-place forces, prepositioned material, and augmenting airlift can not long support the massive quantity of requirements for more than a short time. These will only arrive after the third stage begins when the great bulk of equipment and supplies is delivered by strategic sealift. (2/112) Thus, each component of the strategic mobility triad has distinct advantages and separate responsibilities with regard to this overall strategy. Closer analysis reveals their respective strengths as well as weaknesses.

Strategic Airlift

The most outstanding attributes of strategic airlift are its speed and flexibility. No amount of strategic sealift or

prepositioning can accomplish this. The speed and flexibility of airlift are absolutely crucial factors to our forward defense strategy. With these characteristics, airlift serves as an effective force multiplier which may well be able to terminate a conflict quickly through rapid delivery of a relatively small amount of powerful fighting forces. In a small contingency, airlift alone may be able to deliver the necessary fighting force to successfully terminate the conflict on favorable terms. Thus, in some circumstances, airlifted fighting forces may be enough to negate the need for follow-on sealift. But we can not rely on this scenario and the specter of a large-scale conflict, where requirements would quickly exceed the delivery capability of our airlift force, is still a very real possibility. In Vietnam, despite the most massive airlift effort in our history, it was sealift which delivered the great majority of defense cargo. Today, even the most ambitious estimates envision airlift carrying no more than ten percent of the requirements in any large-scale conflict. (25/7)

Airlift is vitally needed and we must maintain its capability to deliver the first wave of reinforcing troops and equipment. Without its speed and flexibility, the United States would lose the war long before follow-on forces could be brought to bear. Thus, we must continue to improve our airlift forces, however, we must keep in mind that airlift alone can not satisfy strategic mobility requirements.

Prepositioning

In a sense, prepositioning is even faster than airlift as vital unit equipment and materiel are delivered to the theater in peacetime--before any potential conflict erupts. Thus, essentially, prepositioned assets seem to equate to in-place forces which only have to be married up with manpower to considerably increase warfighting capability in an overseas theater. The lift requirement for these forces is almost exclusively limited to personnel movement which, though considerable, is within the capability of our passenger airlift resources to achieve. Yet, there are many drawbacks and limitations to prepositioning which preclude it from being an overall solution to our strategic mobility shortfall.

First and foremost is the fact that it is not easy to gain and maintain necessary host-nation access to store our assets overseas. A prime example is Southwest Asia where negotiations to effect prepositioning in support of the US Central Command took several years before the first stocks could be placed in theater. Despite intensive and prolonged efforts, the amounts allowed by the Gulf Cooperation Council states remain far below what the theater commander requires. Additionally, once host-nation access is obtained, there is no guarantee this approval will remain in effect for any appreciable duration. On several occasions approval to preposition overseas has been rescinded by the host-nation involved and the US has been forced to remove assets which it took years to preposition. In other cases, host

nations allow prepositioning but place considerable restrictions on where, when, and how these forces may be used. A common precondition is the requirement that prepositioned assets be used only in defense of the host nation and then only after their use has been specifically approved and coordinated with the host. Depending on the stability of the government involved, our permission to preposition is often only a bullet away from abrogation. Indeed, in a worst case scenario, our assets may even be confiscated by an incoming hostile regime. (9/49-53)

Beyond the various political difficulties, there are several practical and fiscal problems as well with prepositioning. The storage of prepositioned equipment has proven to be a difficult and expensive task. In Europe, where environmental conditions dictate covered storage in humidity controlled warehouses, obtaining NATO infrastructure funding has been a long and tedious process. The shortage of proper storage facilities in Europe remains one of the key obstacles to increasing stocks in this theater. Likewise, prepositioning in Southwest Asia also requires special storage facilities to protect equipment from sand and severe heat. Even when these conditions are met, maintaining the readiness of prepositioned equipment is a tough proposition. Equipment items such as motor vehicles and water purification systems are not easy to maintain in top condition after extended storage and without the benefit of periodic use. Other prepositioned assets such as munitions, rations, and medical supplies have definitive shelf-life limitations.

Exercises and testing cycles provide only limited opportunities for equipment checks and rotation of perishable items. (9/49-53)

Another high cost associated with prepositioning is the need to dual-equip units supported by prepositioning--one set of equipment prepositioned and another set in CONUS to enable necessary training and the ability to deploy fully equipped units to other theaters if necessary. The Services have a rough enough time equipping their forces once, never mind twice. This factor has been a key roadblock to rapidly increasing the Army's POMCUS stocks in Europe. (25/18)

Finally, perhaps the most serious limitation to the prepositioning concept is its vulnerability to enemy preemptive strikes. (21/186) Given the size of our POMCUS storage sites and the importance of this equipment to our warfighting capability, these assets inevitably have become prime targets for our adversaries. Their safety becomes highly dependent on timely intelligence warnings and the political resolve to mobilize these assets despite the fact that such a move may well be viewed as escalatory by our enemies.

To some extent, prepositioning on ships versus on land negates several of the difficulties described above. However, afloat prepositioning is still costly as the ships, crews, and personnel needed to maintain the equipment are extremely expensive. Estimated costs exceed \$25 million per ship per year. (9/50) Additionally, there is still the requirement to dual-equip affected units which also increases costs. Finally,

though afloat prepositioning is more mobile than shore-side storage site it still represents large concentrations of valuable equipment and, hence, remains a lucrative target for enemy attack.

Once again, this is not to imply that the United States should not pursue prepositioning, only that it has its limitations which preclude it from being a cure-all for our strategic mobility shortfall.

Strategic Sealift

The most outstanding attribute of sealift is its capability to deliver the large amounts of unit equipment and sustaining resupply necessary to support our warfighting forces. Offsetting this capability is the extended delivery times associated with this relatively slow means of transport. Over time, however, analysis shows that these long delivery times are more perception than fact. Accordingly, sealift continues to play a key role in the strategic mobility equation for there is no other means to move the massive amounts of combat forces demanded by our war plans in the timeframes required by the respective unified commanders.

Historically, it has been sealift which has deployed the preponderance of our forces in time of war. Indeed, in World War II sealift carried essentially 100 percent of military cargoes. (25/7) And during Vietnam, despite the record airlift effort achieved by the Military Airlift Command, sealift carried over 95 percent of the dry cargo and 99 percent of the petroleum,

oils, and lubricants (POL) used in the war. (5/8) Mobility planners expect this heavy reliance on sealift to be the same in any future major military confrontation. To place this requirement in perspective, it has been estimated that a major confrontation in Europe would necessitate at least 3,000 ship arrivals per month to keep the allies in the war. (25/12)

That sealift can and must transport the majority of defense cargoes comes as little surprise to most people. What is often unrecognized, however, is the order of magnitude by which this statement is true. The Arab-Israeli War of 1973 is a case in point. In this conflict, the first ship that arrived in Israel carried more outsized cargo than the entire massive airlift delivered in the previous 19 days. (25/7) Additionally, because of its superior capability to move vast amounts of cargo, sealift can frequently accomplish the movement of large, crucial units faster than airlift. For example, the Association of the United States Army estimated that movement of an Army mechanized division to Europe would require movement of about 50,000 tons of cargo. Using airlift, they estimated this would equate to approximately 400 C-5 sorties and 1200 C-141 sorties. Assuming a bare minimum of two days per sortie, including positioning and repositioning time, they concluded this would add up to almost two weeks of undivided effort to move the unit via air. (25/6) Using sealift, however, the same unit could move overland to an East coast seaport of embarkation (SPOE), and via three fast sealift ships arrive in Europe in about twelve days. (14/52)

Without doubt, the first sealift deliveries take considerably more time to reach an overseas theater than airlift. Until this time, sealift contributes nothing to the war fighting effort. But once the sea lines of communication are established, given the volume of cargo to be moved from the CONUS, sealift becomes the principle mode to use.

In no way is this brief analysis and discussion of the strategic mobility triad intended to degrade the importance of strategic airlift or prepositioning, nor is it intended to imply that we should discontinue our progress in these two vital areas. Conversely, it also is not intended to inordinately elevate the role of strategic sealift. The key point is that these three elements of strategic mobility are a team that must be effectively integrated in order to achieve maximum force projection capability. To accomplish this, especially in a resource constrained environment, a critical balance must be maintained among the triad components. A quick analysis might seem to indicate that the United States has maintained a rough balance within the triad. Indeed, on the surface it appears that each component seems to be slowly but steadily increasing its capability. A closer examination reveals this may not be the case with sealift where the more visible improvements in Navy organic capability mask the serious decline in the US merchant marine.

CHAPTER III

SEALIFT--TELLTALE TRENDS AND TROUBLES

*" . . . There is a clear and growing danger to the national security in the deteriorating condition of America's maritime industries. The United States simply cannot continue to consider itself secure, much less retain leadership of the Free World, without reversing the decline of the maritime industrial base of this nation, a nation that would depend so heavily upon control and use of the oceans for concluding a protracted war on acceptable terms."
(First Report of the Commission on Merchant Marine and Defense, 1987)*

While the capability of the US merchant marine has steadily decreased since World War II, using certain compensations and various other work-arounds, on paper at least, defense planners can still generate the requisite amount of sealift necessary to meet the minimal requirements of our various war plans. A closer analysis, however, plainly indicates that we are being far too optimistic regarding this capability. There are six major factors which have caused the erosion of our sealift capability. They are: (1) a shortage of available ships, (2) changes in the type of ships which are far less appropriate for most military cargoes, (3) a serious shortage in trained merchant marine mariners, (4) a lack of US shipbuilding and repair capability, (5) changes in world trade patterns which reduce ship availabilities, and (6) lack of a strong sealift constituency to correct these problems. Given these very real and serious limitations, maintaining that our sealift capability satisfies present and near-term future requirements is paramount to a shell-game. The following analysis shows why.

The Shortfall in Shipping Assets

The factor most often cited to measure a nation's sealift capability is the number of ships it owns or controls in a national emergency. For the United States there are essentially five sources of sealift: the US-flag merchant marine fleet, the Military Sealift Command nucleus fleet, the National Defense Reserve Fleet (NDRF), the effective US-controlled (EUSC) fleet, and the merchant shipping of allies which conceivably could be made available to support operations in their respective theaters. How much can these sources contribute today?

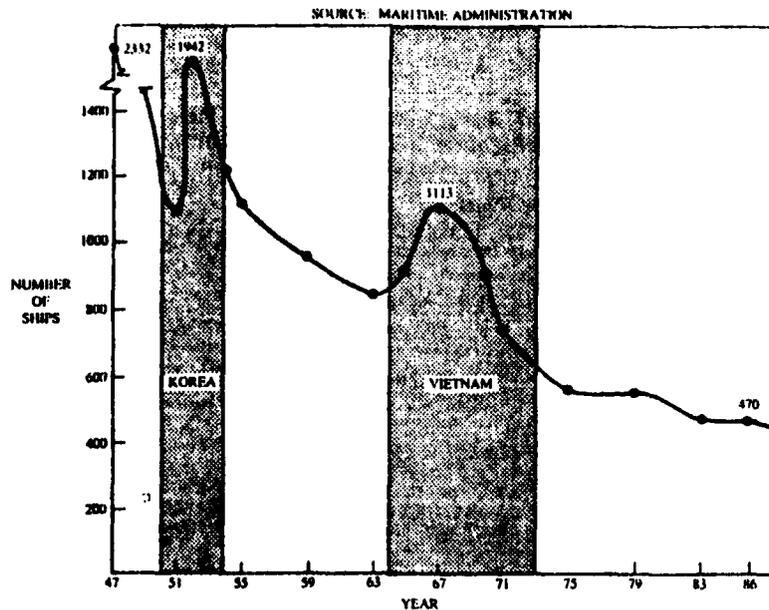
Historically, the primary source of our sealift has come from the American merchant marine. These vessels may be requisitioned to support military needs upon Presidential declaration of a national emergency. As critical as this source of sealift has proven in past wars and conflicts, America has allowed its merchant marine to erode to a mere fraction of its former strength. Indeed, the steady and rapid decrease in the number of seagoing vessels in our merchant marine is without precedent. At the close of World War II the United States possessed the world's largest merchant fleet comprising more than 3,000 active ships. (1/5) Today, barely more than four decades later, the active US merchant fleet ranks 16th in the world and numbers approximately 350 active ships. (5/28) Of these, only some 88 are engaged in overseas trade. In 1970 the US merchant marine supported 18 major shipping lines; only four remain today. (5/11) This precipitous decline is true for both dry cargo as

well as tanker vessels. The chart on page 17 graphically portrays this downward trend in the number of US-flag ships, a trend which is expected to continue at least through the year 2000.

A second source of sealift is the shipping contained in the MSC nucleus fleet. Though much smaller in number than the US-flag fleet, these ships are Government owned or controlled and thus readily available to support defense needs in a national emergency. This source includes ships owned or chartered by the Navy which are actively engaged in carrying military cargoes in peacetime as well as a smaller number of ships immediately available, but maintained in a reduced operating status. While perhaps our most modern and ready source of sealift, the number totals only 63 vessels--some of which are special purpose support ships which would carry limited if any sealift cargo. It should be noted that this fleet also includes the vessels in the Afloat Positioning Force located in the Indian Ocean and the Mediterranean. These assets would not be available to transport CONUS-based defense cargoes until they have discharged their prepositioned stocks and returned to the United States. (5/28-29)

A third source of sealift is the NDRF, a strategic reserve of ships that was created via the Merchant Ship Sales Act of 1946 which provided for the Government to purchase, store, and maintain vessels in support of national defense contingency requirements. The great majority of the NDRF, some 200 plus vessels, consists of older ships which include considerable

ACTIVE US COMMERCIAL SHIPS
1,000 GROSS TONS AND GREATER



* Includes commercial ships under MSC contract numbers of World War II Victory ships. Because of their relatively small tonnage capability, slow speed, and the excessive time required to activate these assets (estimated to be at least 60 days), current DOD planning considers the preponderance of the NDRF a strategic sealift resource suitable only for use as replacements for combat losses, for sustaining operations in the latter stages of a prolonged conflict, and for essential economic support of the civilian economy. (5/29) Plans call for scrapping most of these older vessels by the year 2000. The exception to this limited capability within the NDRF is the subset known as the Ready Reserve Force (RRF) which is comprised of considerably newer and more militarily useful shipping. These assets are maintained in a 5, 10, or 20-day readiness status and

thus would be available much sooner than the older NDRF assets. Currently there are approximately 86 ships in the RRF and, in response to the declining numbers of ships in the US-flag merchant marine fleet, the Navy plans to expand this force to some 116 ships by 1992. (5/29)

A fourth source of shipping is the EUSC fleet. It consists of ships which are majority-owned by US businesses but are registered in foreign "flags of convenience" nations. This practice allows ship owners to employ cheaper foreign crews and avoid various other Government regulations and operating restrictions. The number of ships in the EUSC fleet has declined over the last ten years, but still numbers approximately 300 vessels. Of this number, some 134 ships are considered militarily useful. Though technically requisitionable and included by DOD planners in the list of available strategic sealift assets, many authorities question whether or not these vessels and foreign crews would answer the call. Generally, the consensus seems to believe that at least a portion of EUSC shipping would become available on a country by country basis depending on the nature of the crisis, the issues involved, and the danger factor. (5/29)

Finally, there are the maritime fleets of allied nations who are expected to fully support our sealift reinforcement mission provided their own vital national interests and survival are at stake. The most important source of allied shipping is the agreement we have with our NATO Allies whereby they have pledged

to provide 400 dry cargo ships, 60 tankers, and the passenger ship capability needed to transport 21,000 troops in support of the rapid reinforcement of Europe. While this seems to represent a relatively significant and reliable source of sealift, the NATO nations are facing the same problems with their respective merchant marines as the United States is with ours--namely, a serious decline in the number of vessels as they lose more and more of their trade to third-world nations and as owners pursue transferring registry to various "flags of convenience" nations. The impact is significant. Between 1980 and 1985, scrapping and reflagging actions have decreased the combined fleet of our NATO allies by over 30 percent. (5/30)

While the combined capability from these five sources still represents a significant sealift force, the point which must be recognized is that the number of total assets is decreasing at a rapid rate. Were we to have a surplus of sealift, we could perhaps afford this decline. Unfortunately, such is not the case.

It should be noted that there is not a direct correlation between the decrease in gross cargo carrying capability and the decrease in number of vessels. This is because today's newer vessels are larger and more capable than the older vessels they have replaced. Despite this fact, overall sealift capability has decreased substantially. Furthermore, as will be addressed later in this chapter, the utility of these newer ships for defense needs is restricted by the fact that, without

modification, they are generally considered not as militarily useful as their older counterparts.

Changing Ship Types

In addition to suffering a tremendous decline in the actual number of ships is the fact that a growing percentage of the available shipping is not as militarily useful as it once was. This is an extremely critical factor which severely diminishes our ability to accomplish the sealift deployment requirements contained in our various war plans. (18/24-26)

Whereas our merchant marine fleet was once comprised almost exclusively of self-sustaining, breakbulk, dry cargo vessels and tankers ranging from 25,000 to 50,000 deadweight tons, our fleet today has very few of these types and sizes. What now predominates is an overwhelming preponderance of container ships and large tankers which exceed 100,000 deadweight tons. These newer vessels, though more viable for commercial peacetime trade, are not well-adapted to carrying the majority of military cargoes which would require transport in wartime. The traditional freighter was extremely versatile, could carry almost any type of cargo, operate in relatively shallow drafts, and load and discharge in unimproved ports using its own on-board cranes. Likewise, the smaller tanker vessels necessitated less draft and berthing space thereby allowing operations in a far greater number of the world's ports. (26/29-33)

In contrast, the newer container vessels, without adaptation, can not carry the outsized cargo and rolling stock

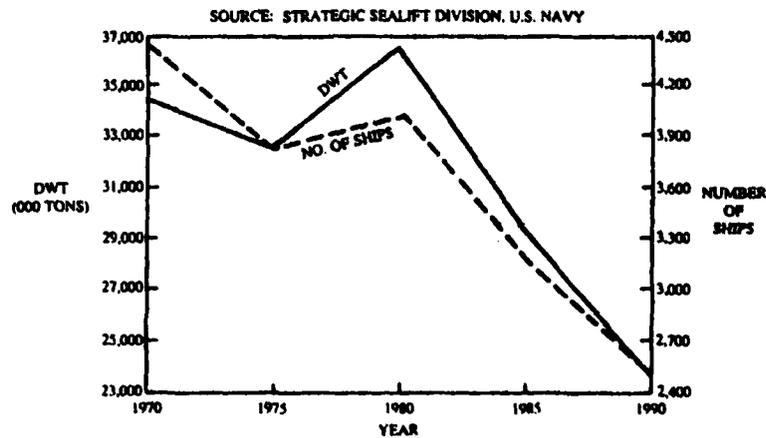
associated with most military unit moves. This poses a severe limitation on initial sealift surge requirements--two thirds of which can not fit in containers. In contrast, the relatively new roll-on/roll-off (Ro/Ro) vessels are excellent for this purpose, however, their small number does not begin to make up for the loss in breakbulk shipping. Container ships can carry the great majority of resupply cargo--three quarters of which is containerizable--more efficiently, however, this matters little if we can't first move the units who theoretically need to be resupplied. (26/29-33)

Regarding tanker requirements, the replacement of smaller tankers with larger vessels has placed a premium on the smaller ships remaining that can still utilize less developed ports and shallow anchorages. Unfortunately, there simply are not enough of these vessels left and DOD planners must now plan to "light-ship" many of the larger capacity tankers to reduce their draft in order for them to utilize a greater number of ports and in-stream discharge locations. (26/33)

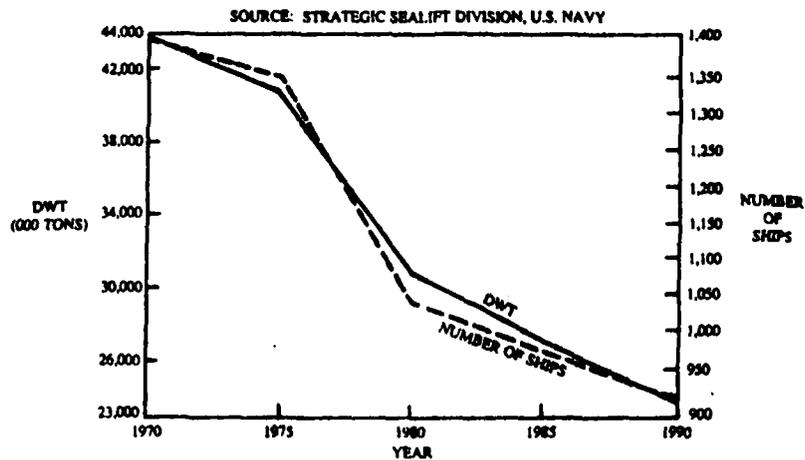
The magnitude of this changing composition of merchant ships is not insignificant. Only about 25 percent of the US-flag commercial fleet is considered militarily useful without modification. As the charts on page 22 portray, the picture is the same in the commercial fleets of our NATO allies. Between 1980 and 1987 the number of militarily useful ships decreased by more than 50 percent. (5/30) Projections through the year 2000 indicate this adverse trend will continue.

To cope with this situation, DOD planners have encouraged the development of various innovations in sealift such as seashed and flatrack systems to allow the carriage of breakbulk cargoes on container ships. (5/31) Unfortunately, thus far there is not nearly enough of these systems to modify more than a small percentage of existing container ships nor are the procedures fully established to effect rapid conversions.

TRENDS IN NATO FLAG FLEET
MILITARILY USEFUL DRY CARGO SHIPS



TRENDS IN NATO FLAG FLEET
MILITARILY USEFUL TANKERS



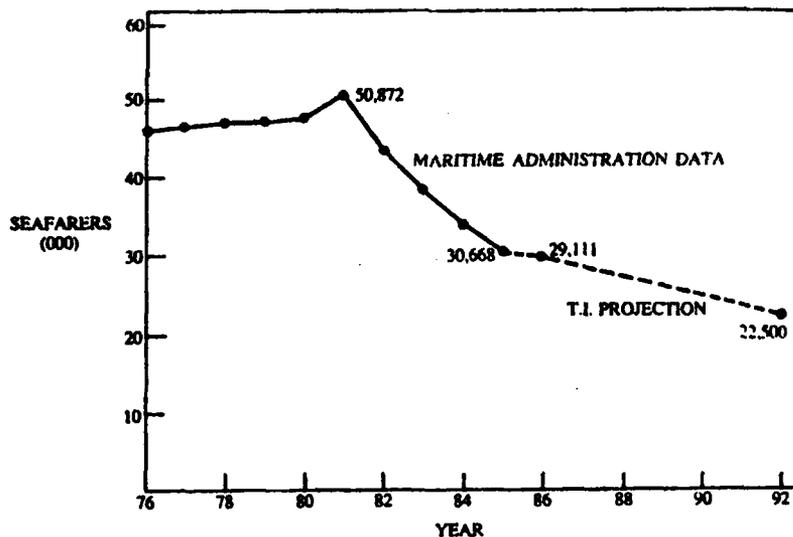
The Vanishing American Mariner

The problems which plague the US merchant marine and restrict our sealift capability are not limited to the numbers and types of ships. Equally important is the necessity to crew the ships with trained merchant mariners. Unfortunately, the number of American mariners is directly tied to the number of American ships in our merchant fleet. Thus, just as the number of vessels has steadily declined since the close of World War II, so has the number of mariners. Surge shipping requirements dictate the immediate availability of nearly 6,000 additional seafarers. (1/7) These people will be indispensable for carrying out the sealift effort in support of US defense strategy. They can not be replaced by common laborers, nor can they be replaced by Naval Reserve personnel should there be excess people in this pool. There is only one source for the highly trained and experienced American seafarers required in time of war: personnel who have been actively sailing on US ships in peacetime. Thus, even if the Navy compensates for the shortage of vessels in the US merchant fleet by procuring additional organic assets, there still remains a critical requirement to crew these vessels with experienced seamen. Unfortunately, these people represent a vanishing breed. (24/87-89)

The decline in the number of American merchant mariners parallels the decline in the US-flag fleet. Absent a strong merchant fleet and the personnel needed to crew surge shipping during war will likewise be missing. The chart on page 24

illustrates the gravity of this situation. At the close of World War II there were well over 200,000 trained US merchant mariners. By the late seventies the number stood at approximately 50,000 and today there are less than 27,000. (1/9) Additionally, with the decline of the American merchant marine, fewer and fewer young Americans are entering this field. Accordingly, a significant percentage of the remaining seamen, those who would be available for service during a major world conflict, are men in their late forties, fifties, and early sixties. Their ability to withstand the rigors of war is certainly suspect. (5/33-36)

ACTIVE SEAGOING WORK FORCE ON SHIPS OF
1,000 GROSS TONS AND ABOVE



Exacerbating this situation is the fact that today's more modern ships require far fewer mariners to operate. Increasingly, the composition of the American-flag merchant

fleet is changing as the less efficient, more manpower-intensive ships are retired. Unfortunately, however, it is these older ships which the Navy is purchasing for its reserve sealift force. Accordingly, this poses difficult problems if the United States needs to mobilize the more billet-intensive ships now being laid up for emergency use in the Navy's Ready Reserve Force. (5/33-36)

Optimists point to three alternate sources to satisfy wartime crewing requirements--naval reserve personnel, merchant mariners from allied nations, and foreign crews which now serve on EUSC ships sailing under flags of convenience. Unfortunately, none of these options are very viable. Using Naval Reserve personnel is not a good alternative as it ignores peacetime training requirements and the very pragmatic limits of reserve end strength. Using merchant seamen from allied nations is not practical as, like the United States, these countries also face a shortage in trained mariners. And the final option--use of foreign crews from EUSC shipping--while a likely source of some mariners, is not considered a reliable alternative given the numbers needed and the fact that such service may well require sailing in war zones. (24/87-89)

The Diminishing Shipbuilding and Repair Industry

Just as the number of merchant mariners has been diminished by the decline of the US merchant marine, so has the capability of the United States to build and repair ships. Once a strong and viable industry, the capability of American shipyards today is a mere shadow of its former strength and redundancy. In fact,

the United States has not been a major competitor in the world shipbuilding industry since the late 1950s. This has been caused primarily due to high labor rates, exorbitant material costs, and extended building times.

Traditionally, various Government-imposed regulations and subsidy incentives insured that, at least, the US merchant marine would remain a customer. With the severe decline in this source of employment, however, the only activity keeping American shipyards open today stems from the US Navy. During the 1970s the US merchant marine ordered an average of 25 ships per year from American shipyards. Since 1980, however, only 28 ship orders have been placed. The last commercial ship constructed in America was completed in 1986; no ship orders have been made since then, and there are none anticipated in the foreseeable future. (5/36) The results are as might be expected. During the past five years, 76 shipyards or repair facilities have closed taking with them over 52,000 skilled production workers--more than 30 percent of the industry workforce. This trend is expected to continue through the year 2000. (5/36-40)

As noted, the work that today sustains the American shipbuilding and repair industry is limited to that which directly supports the US Navy. But, here too, the long-term prognosis is not encouraging as the workload will be greatly reduced once the 600-ship Navy goal is reached. (7/109-119)

Just how essential is our shipbuilding and repair capability to national defense? World War II provides a vivid example.

Between 1940 and 1945 the United States built over 127,000 new vessels in support of the war effort. By May of 1942, new construction outnumbered monthly losses attributed to enemy action. Clearly, American shipbuilding capability was a key factor leading to allied victory. Unfortunately, we could not begin to repeat that performance in a potential World War III scenario. And, at the same time that shipbuilding capacity has decreased, the likelihood of losing ships at sea to enemy interdiction efforts has drastically increased. In World War II there were fewer than ten enemy submarines for every thousand allied merchant ships, yet we almost lost the war for the Atlantic. Today the ratios have increased to the point where there are approximately 50 Warsaw Pact submarines for every thousand ships in the combined NATO merchant fleet. (14/48)

As important as a viable shipbuilding and repair capability is to our overall sealift capability, this factor is seldom incorporated when assessing the sealift leg of the strategic mobility triad.

Changing Trade Patterns

Another factor which limits the capability of our sealift force concerns changing world trade patterns. While our primary overseas defense priority remains Western Europe, the great preponderance of ocean-borne trade has shifted from the Atlantic to the Pacific. Furthermore, this phenomena is not limited to US-flag vessels; but affects EUSC shipping as well as the commercial fleets of our NATO allies. Unlike cargo aircraft

which can be recalled from any overseas location to CONUS aerial ports of embarkation (APOEs) in a matter of hours, ships would take days and often weeks to reposition to CONUS seaports of embarkation (SPOEs). For example, a ship located in the busy far east trade routes--say in a Japanese or Korean port--at the outset of a major contingency would have to discharge its cargo and sail nearly half-way around the world to reach an Atlantic or Gulf coast port before it could on-load military cargo destined for Europe. This would take from two to three weeks depending on ship location and speed. (22/103-104)

Exacerbating this situation is the tenuous situation regarding the Panama Canal. In any major world conflict, defense planners can not with any assurance bank on the canal being open. Easily sabotaged and with relations with Panama at an all-time low, we may well be denied the rapid transfer of shipping assets between the Atlantic and Pacific oceans via the canal. Yet, without the canal, the passage from the Pacific to CONUS Atlantic and Gulf ports would necessitate at least an additional 15 to 21 days. (22/103-104)

Sealift's Constituency Shortfall

The final factor which has plagued sealift is the fact that it has never really had a strong advocate. Neither within the military, nor within Congress has there developed a viable sealift constituency. As a result, the military has been slow to improve Navy organic sealift while Congress has been equally slow to enact necessary legislation to rescue the failing American

merchant marine. Because of this lack of constituency, the precipitous decline in our sealift capability has been largely overlooked and ignored. Both military and congressional leadership have placed an inordinate reliance on such uncertain sources of sealift as the aging NDRF, flags of convenience shipping, and inflated assistance from allies. If sealift is so important to the US economy and national defense, why have we failed to establish a sealift constituency?

Lack of a strong sealift advocate in the military is the more easy to explain. Historically, the military has tried to use private as opposed to organic capability whenever possible. The logic behind this policy is that it is wasteful and expensive to duplicate existing commercial capability when the public sector can meet Department of Defense (DOD) requirements. Additionally, use of commercial capability helps support the US economy and allows the military to spend additional funds in areas where there is no commercial counterpart--mainly in combat force structure. To use transportation as an example, the Military Airlift Command has not procured great numbers of passenger carrying aircraft because the American airline industry, in both peacetime and wartime, can provide this service for the military. Likewise, the Military Traffic Management Command has not invested heavily in CONUS port facilities because military needs can be satisfied by using commercial ocean terminals. Until recently, the Navy has played the same game with sealift by electing to rely predominantly on the US

merchant marine versus organic resources to meet defense sealift requirements. So long as the merchant marine could meet these requirements, this was a sound policy. For several years now, however, merchant marine capability has fallen far short of the mark. The Navy is now investing more on organic sealift but the program is far from popular as it necessarily takes funds away from the Navy's long cherished goal of a 600-ship combat fleet. For years, the Navy preferred to ignore their sealift responsibility. (16/83-85) In fact, it was not until 1984 that the Secretary of the Navy finally designated strategic sealift as a primary Navy function on a par with its more glamorous missions of power projection and sea control. (2/112)

The lack of a strong sealift constituency in Congress is a more complex problem. Many would conclude that it's not the lack of a constituency, but in stead, too many constituencies representing different and often competing facets of the maritime industry. Shipping companies, for example, are interested in trying to be as competitive as possible in a very stringent world market. They fully support operating differential subsidies (ODS) and various cargo preference laws which encourage and sometimes mandate use of American shipping companies over cheaper foreign competition. But these same companies lose interest when subsidy funding is conditional and forces them to buy only the more expensive American-built ships. Likewise, support wanes when cargo preference legislation is tied to mandatory service over non-profitable routes. (13/28-30) Another

interest is that of the shipbuilding industry. This group too is interested in making a profit and fully favors construction differential subsidies (CDS) and various other incentives which lead to guarantees that a fixed amount of shipbuilding, maritime repair, and overhaul work will be done here in the United States. The fact that these programs increase construction and operating costs for American shipping lines is not their primary concern. Still other factions such as the merchant mariners, ship construction workers, and their respective unions also have separate axes to grind. Their interests are focused more on the short term such as wages and job security. They seldom take into consideration the longer term interests of the American shipping firms, our country's shipbuilding industry, or--for that matter--national defense needs. Finally, there are the shippers themselves who resist Government policies and regulations which specify use of more expensive American-flag shipping. All of these groups are represented by well-organized and powerful lobbies. Collectively, they have pushed and pulled Congress in many different directions.

Compounding the problem many-fold is the fact that there is no one office within the Federal Government responsible for providing centralized control and direction for maritime transportation. Currently, there are over 20 Federal agencies and congressional committees involved in one way or another with sealift. (23/17)

For a Congress pulled in these several different directions

and divided internally as well, the result has been a maritime policy plagued by bureaucratic and administrative fragmentation. Thus, in stead of serving as an effective sealift constituency, Congress and its maritime policy have rendered nearly as much harm as help for America's failing merchant marine.

The collective impact of these six factors clearly indicates the magnitude and gravity of our sealift problem. In the face of any sizeable sealift augmentation requirement, the United States might literally be dead in the water. In summary: the number of ships is declining rapidly; the majority of the ships we do have are not the right type; the preponderance of the US and allied commercial fleet is not in the right place to effect rapid on-load of defense cargoes; we face a growing shortfall in trained merchant mariners; we lack the requisite shipbuilding and repair capability to accomplish wartime tasks; and, to date, we have not developed a strong enough sealift constituency to insure we correct these problems.

CHAPTER IV

SEALIFT--HOW WE GOT TO WHERE WE ARE

*"Through the centuries, the American merchant marine has helped our country grow and safeguarded our security. During peacetime, the merchant marine has linked the United States in commerce with trading partners all over the world. In times of war or national emergency, merchant seamen have served with valor and distinction as the lifeline of our armed forces. Today, the United States is the leader in world trade and the bulwark of the Free World. The dual roles of the merchant marine in trade and defense remain crucial to our national interests, so the maritime policy of the United States must keep it strong and competitive."
(President Ronald Reagan)*

As President Reagan has stated, the United States Merchant Marine has a long and proud history. Its importance to the welfare of the country has been demonstrated many times. In peacetime the merchant marine has played a major role in allowing the United States to become the world's foremost economic power. In wartime the same merchant marine has quickly transformed itself into the nation's fourth arm of defense--a capability that was crucial to allied victories in World Wars I and II and equally necessary for the transport of defense shipments during the Korean and Vietnam conflicts. Unfortunately, both of these roles must be placed in historical context. Our merchant marine is no longer a dominant force in peacetime overseas commerce. Today it carries somewhat less than four percent of our international trade. (28/98) If its downward trend continues, projections indicate it will carry only one percent by the year 2000. (3/6) Likewise, its ability to significantly augment Navy organic sealift in wartime has steadily decreased since World War

It and is now inadequate to meet the deployment needs of even a single theater during a protracted conflict. (11/22-23) How did we lose this once great capability?

The importance of a strong merchant marine was immediately apparent in the history of America. The first explorers and colonists came to the new world in ships, used ships to communicate and trade with other countries, and ships were essential to the establishment of early industries in America. The more successful merchants in colonial America owned their own vessels finding it more profitable to control and direct their transportation operations as opposed to depending on foreign shipping to carry their products to Europe. In the war for independence these merchant ships became the foundation of the American Navy. While no match for the British Navy, they provided a clear indication of our future maritime strength. (23/3)

During the first fifty years of the nation's existence the merchant marine grew steadily and was highly competitive in the world trading market. American clipper ships were the fastest ships afloat and the least costly to build. Accordingly, they benefited the shipping companies as well as the shipbuilding industry. Through the mid 19th century the American merchant fleet carried as much as 70 percent of our overseas trade. (23/3)

The decline in our merchant marine can be traced as far back as the 1850s when American shipbuilding first began to lose its technological edge. Content with profits from the lucrative

clipper ships, we were late to employ such improvements as steel hulls, steam powered engines, and the screw propeller. Additionally, the decreased availability of wood for clipper ships significantly increased the price of American shipbuilding. By the close of the Civil War, America had forfeited its world lead in shipbuilding to Great Britain. Sealift also suffered during the second half of the 19th century when America focused on the expansion of internal versus overseas transportation. By the early 20th century, though the US-flag fleet was still a major force, it carried only one-tenth of the nation's trade. (23/4)

In response to this rapid decline, Congress passed the Military Transportation Act of 1904 and later, the Shipping Act of 1916. The former, better known as the Cargo Preference Act, stipulated that all Government agencies must use US-flag shipping for at least 50 percent of their ocean cargo shipments. (23/13) The latter, considered the first real piece of comprehensive merchant marine legislation, legalized American participation in lucrative world shipping conferences and established the US Shipping Board to monitor and regulate the industry. (12/21-22)

During World War I, US-flag shipping prospered, as did the American shipbuilding industry which constructed record numbers of ships to replace allied war casualties and to deliver US fighting forces to Europe. (12/22)

In a large measure, our experience in World War I reconfirmed the value of US-flag shipping and helped generate the

Merchant Marine Act of 1920. It contained an explicit statement of US national maritime policy which, in theory, is still in effect. This policy stated:

It is necessary for the national defense and for the proper growth of its foreign and domestic commerce that the United States shall have a merchant marine of the best equipped and the most suitable types of vessels sufficient to carry the greater portion of its commerce and serve as a naval or military auxiliary in time of war or national emergency, ultimately to be owned and operated privately by citizens of the United States; and it is hereby declared to be the policy of the United States to do whatever may be necessary to develop and encourage the maintenance of such a merchant marine. (Merchant Marine Act of 1920)

Included in the Merchant Marine Act of 1920 was its Section 27 which created what is referred to as the Jones Act. This legislation specified that all interstate (domestic) shipping be done in US-flag vessels with American crews. This rule of cabotage, similar to laws enacted by most maritime nations, has served to exclusively preserve this share of shipping for American firms. In other regards, however, this 1920 act fell short of the mark in its attempt to revitalize the American merchant marine. While it articulated a clear national maritime policy, it generally lacked the specific means to carry out its objectives. As a result, the US-flag fleet continued to decline between the wars and was especially hard-hit during the depression of the 1930s. (12/22)

In response to the depression era, Congress enacted the Merchant Marine Act of 1936. The most significant and comprehensive statement to date, it constitutes the present statutory base of US maritime policy. Providing the means to

achieve the goals of the earlier 1920 act, the 1936 act specifies that the nation's merchant marine shall be:

1. Sufficient to carry our domestic water-borne commerce;
2. Sufficient to carry a significant portion of our water-borne foreign commerce;
3. Sufficient to provide service on essential trade routes, and maintain the flow of domestic and international commerce at all times;
4. Capable of serving as a naval or military auxiliary in times of national emergency or war;
5. Owned and operated under the US flag by US citizens insofar as practicable;
6. Composed of vessels constructed in the United States;
7. Manned by US citizens; and
8. Serviced by efficient American-owned facilities for construction, repair, and insurance. (12/22)

Unlike the earlier 1920 act, the Merchant Marine Act of 1936 established specific ways and means to achieve its objectives. The primary strategy rested on a system of both operating differential subsidies (ODS) and construction differential subsidies (CDS). The intent was to level the playing field with foreign competitors by having the Government finance the difference in operating and construction costs. (12/23) Statutory limits were placed on the amount of ODS and CDS the Government would provide. For example, CDS were initially limited to not more than 50 percent of the vessel construction cost. (23/15)

Initially the Merchant Marine Act of 1936 proved successful. Its provisions, coupled with an unprecedented demand for additional seafight during World War II, rejuvenated the US-flag shipping industry and allowed the United States to become the premier maritime nation in the world with some 2,300 active ships in its inventory at the close of the war. Reflecting their

strength at this time, US-flag vessels carried over 50 percent of our overall foreign trade. (12/23-25) Unfortunately, this enviable position was not to be long enjoyed.

In the post-war era the United States began almost immediately to rebuild the ravaged economies of the allies. As part of this process, the Merchant Ship Sales Act of 1946 authorized the sale of ships to foreign countries to help restore their merchant marines. Under the provisions of this act 1,113 merchant ships were sold at prices averaging only 41 percent of what it had cost America to build them. (12/25) With this valuable assistance, foreign merchant marines quickly rebounded from the war and soon proved highly competitive with American shipping.

While the provisions of the Merchant Marine Act of 1936 appeared to be a comprehensive and far-reaching vehicle to insure the US merchant marine industry remained viable, its shortcomings and hidden weaknesses soon became apparent in the post-war years. The seemingly generous ODS and CDS offered by the Government were not unconditional. Indeed, to be eligible, shipping firms have had to comply with a host of operating and construction rules most of which are inherently impracticable and uneconomical. First, US ship operators must build and repair their ships in American shipyards where costs run two to three times higher than in many foreign countries. (8/105) Excessive building times, which average two years longer in America than in foreign countries, add to this cost. (23/15-16) These ships

must be built and maintained to comply with stringent American safety and anti-pollution standards which far exceed the world standard and drive costs up even higher. Statutes require that US firms crew their vessels at excessively high levels--20 to 40 percent greater than the International Maritime Organization requires. Additionally, these larger crews must be comprised predominantly of US citizens whose wages are higher than those of Japan and European nations and considerably higher than those of other developing countries. For example, Filipino crews are paid only about one fourth as much as their US counterparts. (7/113) Shipping companies receiving ODS funding also must forfeit considerable latitude in diverting their vessels from assigned trade routes in order to lift cargoes of opportunity. Likewise, obtaining approval to change schedules or routing on a permanent basis normally necessitates a lengthy Government review. (23/14) Where time is money, this too has mitigated against reestablishing the position of strength enjoyed earlier by our merchant marine.

Thus, while ODS and CDS were enacted with good intentions and resulted in the transfer of substantial funds to US shipping companies, the associated restrictions and conditions have had a decidedly negative effect on the ability of the American merchant marine to compete in the world market.

Under the burden of this excessive regulation, the US maritime industry continued its decline while owners sought ways to circumvent the system. One of the more common methods was the

practice of reflagging vessels in less regulated, "flag of convenience" nations such as Liberia and Panama. During the 1950s and 1960s this practice accounted for the loss of hundreds of ships from the US-flag fleet. (12/25)

An increase in the size of the US merchant marine did occur during both the Korean and Vietnam wars, however, these increases were transitory and the number of vessels in the US-flag fleet quickly returned to pre-war levels after each of these conflicts.

Another factor which significantly hurt the US merchant marine was the advent of container ships which are considerably more efficient than breakbulk vessels. Ironically, while America was at the forefront in helping to develop this new transportation technology, due to the extremely high cost of building ships in US shipyards, our shipping companies could not afford to purchase these new vessels in the numbers necessary to favorably compete in the world market. This low level of fleet replacement forced the retention of many older, less efficient vessels. America's merchant marine simply could not compete with other industrial nations whose fleets were not only growing in size, but considerably more modern and efficient than their US counterparts. The results were predictable. By 1967, the share of overall foreign trade carried by US-flag ships fell to 6.5 percent. (12/25)

This continuing decline, coupled with the recommendations of a Maritime Advisory Council and Interagency Maritime Task Force, resulted in passage of the Merchant Marine Act of 1970. In this

legislation, Congress attempted to revitalize the US merchant marine via increased construction subsidies and changes to the operating subsidies designed to stimulate reasonable bargaining and better labor negotiations between shipping companies and maritime unions. While some improvements were noted, the decline in the US maritime industry--as measured by percent of overseas trade carried--continued to decline. Seemingly, regulation was not the answer. (23/11-12)

The focus on how to save the American merchant marine has changed considerably during the 1980s. Consistent with the overall trend to deregulate the transportation industry, the Reagan administration elected to drastically reduce subsidies--especially construction subsidies. In fact, no CDS funds have been approved since 1982. (23/16) In so doing, the Government has made a clear statement that it intends to dedicate the limited funds available for maritime subsidies exclusively to ship operators as opposed to sharing this assistance with the shipbuilding industry. As a result, the US shipbuilding industry is now dependent almost exclusively on Navy construction. (7/109)

Additionally, under the Reagan administration, Congress passed the Shipping Act of 1984 which further reduced economic regulations by clarifying the antitrust immunity of conference agreements, simplifying and accelerating Federal Maritime Commission procedures, and allowing greater latitude in operating conditions. (12/29-30)

Despite these actions, the downhill trend for the US

merchant marine has continued. In 1987, US-flag shipping carried only 4 percent of US ocean-borne foreign trade and projections indicate that by the year 2000 the percentage will have dropped further to barely 1 percent. (3/6)

One aspect of US maritime history I have not addressed in this chapter is the growing proliferation in the number of federal agencies having responsibilities in maritime affairs. Currently there are over 30 Government agencies, departments, commissions, and Congressional committees exercising various degrees of control over transportation policies and programs. (23/17) Many authorities attribute the failure of the federal Government to articulate a comprehensive and viable maritime strategy to this fact and argue that, as there is no clear line of responsibility, there is no real accountability. Suffice it to say that this too has been a factor contributing to the decline of the American merchant marine.

In summary, while the capability of the US merchant marine has continued to diminish, federal maritime policy has vacillated between virtually no involvement on one extreme and comprehensive regulation on the other. Neither has served to arrest the precipitous decline of the American maritime industry--an industry vital to both the peacetime and wartime needs of the nation. Yet actions from Washington seem only to continue the trend of much rhetoric but little substantive action and have led one DOD logistician to describe federal maritime policy as "more jargon than judgement." (23/1) If there is one over-

riding reason to explain "how we got to where we are" in the US maritime industry, it is the lack of a strong, clear, comprehensive, and viable maritime policy.

CHAPTER V

SEALIFT--REQUIREMENTS VERSUS CAPABILITIES

"Moving a million and a half youngsters from North America and the United Kingdom into Europe is a mind-boggling chore but it is just the tip of the iceberg. Moving the the tonnages and maintaining that pressure of resupply so they are not going to run out--that's the task."

(Admiral Isaac C. Kidd, former CINCLANT commander)

The previous chapters have explained the critical importance of sealift to our national defense, identified the factors which have severely weakened our sealift capability, and traced the evolution of this decline. Where exactly do we stand today? How do the sealift requirements for a global war compare to the capabilities we could generate?

Requirements

Determining sealift requirements for a major war in terms of short tons for dry cargo and sea barrels for POL is a relatively easy task. However, translating these gross requirements into finite numbers of vessels, crews, and the requisite ship repair capability is infinitely more difficult. For several reasons, sealift requirements simply can not be analyzed in the same way that airlift requirements are.

Because of their speed, air planes can position themselves at CONUS aerial ports of embarkation in a matter of hours. Hence, essentially all the planes we have can legitimately be counted. But because of their slow speed, ships engaged in distant peacetime operations could take several days at the least and as much three or four weeks at most before they could return

to CONUS seaports of embarkation. Thus, availability becomes a key factor which precludes simply counting the number of ships in our overall inventory. Another factor which impacts on the availability of shipping concerns EUSC shipping. How many of these flags-of-convenience ships will answer the call? Of those that do, what percent of their crews will agree to sail these ships in wartime? Given the considerable potential of EUSC shipping to augment our sealift capability, the reliability factor here is critical.

Additionally, the proliferation of ship types, sizes, and speeds makes it equally difficult to establish a standard or "equivalent" ship. This is true for both dry cargo vessels as well as for tankers. Airlift requirements are often expressed in C-141 equivalents. Expressing sealift requirements in terms of ship equivalents, while this is often done in lieu of no better alternative, produces estimates which are invariably less reliable and subject to dispute. Different types and sizes of vessels also compound the problem of computing the necessary number of merchant mariners and shipyard repair requirements.

(5/17)

Given these limitations, it is not surprising that there remains a great deal of controversy over how much sealift capacity we need and how much we have. The lack of a definitive answer is not for lack of trying, however. During the last 50 years, Congress and DOD have commissioned well over 20 major study efforts to determine exact sealift requirements and to

assess existing capability. (5/17-19) The most recent, comprehensive, and universally-accepted studies are the DOD Sealift Study of 1984 and the DOD Sealift Tanker Study of 1985. Additionally, the 1987 First Report of the Commission on Merchant Marine and Defense: Findings of Fact and Conclusions, which uses considerable data from these earlier 1984 and 1985 studies, also serves as one of the more authoritative sources on this subject. The conclusions from these and other studies are far from encouraging.

The First Report of the Commission on Merchant Marine and Defense: Findings of Fact and Conclusions addressed sealift requirements for two time periods--current needs as of 1987 and projected needs in the year 2000. The dry cargo and POL requirements were provided by the Services. For 1987 they used the fiscal year 1992 baseline planning requirement contained in respective Service Program Objective Memoranda (POM). For the 2000 projection, they added to this baseline the anticipated realistic and fiscally-constrained force increases anticipated by that year. To equate requirements to required numbers of ships, mariners, and shipyard repair capability, the Commission established three standard ship types--a 23,000 deadweight ton, 700-foot vessel capable of carrying 3,200 short tons of unit equipment; a 23,000 deadweight ton, 700-foot container ship capable of carrying 17,000 short tons of containerized cargo; and a 27,500 deadweight ton tanker capable of carrying 200,000 sea barrels. (5/19-21)

Using the Service POM data, the 1987 dry cargo requirements for a global war were estimated at approximately 8 million short tons of dry cargo. Of this amount, about 30 percent was comprised of unit equipment and the remaining 70 percent was ammunition and resupply. POL requirements totaled about 70 million sea barrels. Using the standard ship types described above, the Commission estimated that 360 dry cargo ships and some 350 tankers would have been needed in a 1987 global war scenario. Of the 360 dry cargo vessels, at least 280 needed to be capable of carrying unit equipment. These numbers were in addition to the ships expected from our allies. (5/20)

Projected requirements for the year 2000 are estimated at almost 10.6 million short tons of dry cargo. Once again, the percentages of unit equipment and resupply are predicted to be about 30 percent and 70 percent respectively. POL requirements remained the same as the 1987 estimate at about 70 million sea barrels. Using the same standard ship types, the 2000 requirement translates to some 440 dry cargo vessels--350 of which should be capable of carrying unit equipment--and about 350 tankers. As for the 1987 estimate, these numbers are in addition to the ships expected from the allies. (5/20-21)

Besides these military sealift requirements, the nation must also provide shipping for essential economic support industries. Based on an Economic Support Shipping Study, this would require an additional 25 dry cargo vessels and nearly 200 tankers. This number of ships is for US domestic traffic only. It is assumed

that foreign-flag shipping will carry essentially the entire portion of US international wartime economic support cargo. It should be noted that if the provisions of the Jones Act are waived--thus allowing foreign-flag vessels to carry US domestic as well as international cargo--the above 225-ship requirement could be canceled provided this requirement could be absorbed by foreign-flag shipping. However, there are limits to foreign-flag capability--especially in wartime. Accordingly, it remains prudent to include the domestic portion of economic support shipping in our total sealift requirement. (5/21)

Adding the wartime national defense needs to the economic support needs resulted in a total 1987 requirement of 385 dry cargo vessels and 550 tankers. Assuming economic support shipping needs remain constant, the projected requirement for the year 2000 would be 465 dry cargo vessels and 550 tankers. (5/21)

In calculating the merchant mariner requirement, the Commission applied historical experience from World War II which indicated that wartime needs require about 1.5 times as many seamen as there are billets to be filled. Using the estimated number of ships provided above, and counting both military and economic support shipping needs, this equated to a need for a minimum of 34,600 merchant mariners for the 1987 global war scenario. The year 2000 global war projection totaled 38,100 seamen. (5/21-22)

Quantifying shipbuilding and repair requirements have proven more difficult than determining requirements for ships and

mariners. A variety of unknown but critical factors such as sealift attrition rates, overseas shipyard capability, and availability of essential maritime materials and end-item components all impact on American shipbuilding and repair industry requirements. Critical components of the industry include shipyard facilities, skilled workmen, and maritime materials and selected major ship components and systems. Collectively, they face wartime requirements which greatly exceed the peacetime needs of the US Navy and our diminishing merchant marine fleet. Tasks common in both the 1987 and year 2000 projection include: mobilizing the RRF portion of NDRF shipping; completing sealift enhancement modifications; repairing battle-damaged Navy and merchant shipping; accelerating on-going new construction programs; and reactivating the remaining, long-dormant portion of the NDRF. (5/22-24) Failure to achieve these requirements in a timely fashion would paralyze the US and allied mobility effort. Without the vast amounts of combat forces which require sealift movement, executing a conventional war beyond the first 10 to 14 days would be all but impossible and force either surrender or early escalation to nuclear levels.

It must finally be noted that these requirements were based on the current and projected disposition of US combat forces given no change in our present forward basing strategies. Yet, with perestroika, glasnost, and the overall improvement in US-USSR relations, the likelihood of conventional force withdrawals as a result of various arms limitations initiatives is a distinct

possibility. Returning even limited amounts of our combat forces from overseas to the CONUS would significantly increase strategic mobility requirements should conflict require their redeployment to overseas theaters. (10/34)

Capabilities

In assessing capabilities, the Commission counted sealift assets considered readily available for military use in a global war scenario. These included the US-flag merchant fleet, the MSC nucleus fleet, the RRF portion of the NDRF, EUSC shipping, and the number of allied ships to be provided in accordance with current agreements for US use in support of American forces. As for requirements, capabilities were determined based on existing data for 1987 and projected data for the year 2000.

Looking first at 1987, the total dry cargo capability of the above combined fleet equates to approximately 2.2 million short tons of unit equipment and about 12.6 million short tons of resupply. As requirements in 1987 totaled over 2.3 million short tons of unit equipment and roughly 5.7 million short tons for resupply, this equates to a slight shortfall in unit equipment capability and an abundance of resupply capability. Two qualifications must be made in this analysis. First, the cited 1987 capability was heavily dependent on full allied cooperation. Considered in isolation, US sealift assets alone could move only about a third of the necessary unit equipment cargoes and less than 65 percent of the required resupply. Second, it must be noted that the availability of all EUSC-fleet dry cargo assets

were assumed in this analysis. As EUSC shipping constitutes a considerable portion of the cited capability here, any degradation in this source of sealift would significantly decrease the capability cited above. (5/27-31)

Analysis of tanker capabilities indicated that existing assets about equalled the 1987 requirement for 350 vessels--the number required to lift 70,000 sea barrels of POL. However, while in gross terms tanker assets are sufficient to lift the POL requirement, there was a significant shortfall in the number of smaller, militarily-useful tanker assets. Additionally, as with dry cargo assets, a significant portion of tanker capability was sourced from allied and EUSC shipping. Their full participation and availability is critical to the capability cited above. (5/31)

For the year 2000 projection, the total dry cargo capability is estimated to be approximately 1.9 million short tons for unit equipment cargoes and about 16 million short tons for resupply. Against projected requirements of 2.7 million short tons for unit equipment and 7.9 million short tons for resupply, this equates to a substantially increased deficit in our ability to satisfy unit equipment requirements and a growing abundance of shipping suitable for resupply. As in the 1987 analysis, allied participation is essential as the projected US capability alone could lift only about a quarter of the required unit equipment and a mere 15 percent of the resupply. Likewise, the dependence on EUSC shipping remains critical to US

capability. (5/31-33)

While tanker requirements in the year 2000 are estimated to remain roughly the same as for 1987, expected reductions in both the US and allied fleets indicate a tanker shortfall will emerge. Against a requirement for some 350 tankers, projections indicate a shortfall of at least 25 vessels. Again, however, this is contingent on full allied participation and the availability of all EUSC tanker assets. Any reduction in either of these sources of tanker assets would increase the shortfall. (5/32-33)

Regarding merchant mariner capability, the Commission counted American seamen who had sailed at least one day during the year on an oceangoing US-flag merchant ship of 1,000 gross tons or greater. Using this criteria, the US merchant mariner force totaled roughly 28,000 seamen in 1987--nearly 20 percent short of the 1987 requirement of 34,600 mariners. While the year 2000 requirement is expected to increase to over 38,000 seamen, the anticipated capability is estimated to be approximately 12,000 seamen--less than a third of what's needed to fill critical seagoing billets. (5/33-34) This adverse trend in the number of experienced American mariners should come as no surprise. It merely parallels the precipitous decline experienced by the US merchant marine since the close of World War II. Furthermore, as priority for the dwindling number of merchant mariner billets has been given to those workers with seniority and tenure, the age of the American seagoing workforce has risen dramatically. Today, the preponderance of American

seamen are between 50 and 60 years of age. (5/34) Seeing the handwriting on the wall, few young people are encouraged to seek a career in the American merchant marine. Thus prospects to increase the number of US seamen appears bleak. The alternate sources most often considered to augment American merchant mariners are allied merchant mariners, foreign crews, and Naval Reserve personnel. Unfortunately, allied merchant mariners will most likely already be committed to the war effort; foreign crews offer a potential pool of trained seamen, however, the degree to which they will volunteer to serve in wartime is questionable; and use of Naval Reserve personnel is constrained by end-strength limitations and lack of necessary training. (1/15)

To assess the shipbuilding and repair capability, the Commission considered facilities, numbers of employees, and the likely availability of maritime materials and critical end-item components in a wartime environment. These same factors were used for the year 2000 projection based on current trends in the merchant marine and shipbuilding industries.

In a 1987 global war scenario, given the requirements identified earlier in this chapter, the American shipbuilding and repair industry possessed considerable capability but still suffered from significant shortfalls in capital equipment and plant facilities, trained personnel, and the uncertain availability of key materials and end-item components. The number of shipyards has declined considerably since the early

1980s and, with the termination of CDS funding in 1982, this trend has accelerated. (28/97-100) In 1987 there were about 50 major shipyards and some 60 smaller or ancillary facilities. (5/37-38) While this number of facilities and the skilled workers they employed would have provided substantial capability, shortfalls and delays would have been common and not all tasks would have been accomplished in desired time frames. It must also be noted that a significant portion of the capability credited in the 1987 assessment was from facilities which had been closed down during the preceding five years but which the Commission believed could likely be reactivated in an emergency. Still, the United States would have been unable to accomplish the heavy demands of a wartime environment and would have had to rely to a large extent on foreign overseas assistance. (7/101-123)

The year 2000 projection for shipbuilding and repair capability is considerably less optimistic. With peacetime work limited almost exclusively to Navy vessels, the industrial base supporting this industry is expected to decline drastically over the next decade. The number of active facilities has already dropped considerably from what was available only a few years ago and this trend is predicted to continue and accelerate over the next decade. Additionally, those facilities already closed down will have deteriorated to the point where it will not be possible to reactivate them in time of conflict. As the shipbuilding and repair industry continues to decline, so too does the number of skilled workers employed by the industry. And, as is the case

with merchant seamen, those that remain in shipyard employment tend to be older workers who are nearing the end of their careers. Additionally, the American shipyard supplier base to include basic raw materials such as steel for hulls and finished end items such as ship engines, electronic components, and marine propellers has declined at an unprecedented rate since the early 1980s. Were it not for Navy construction and repair business, this essential component of shipbuilding and repair capability would likely cease altogether. (5/39-42)

In summary, an objective appraisal of requirements versus capabilities leaves little room for encouragement. Analysis indicates our sealift forces could barely achieve the mission presented in a 1987 global war scenario and, given current trends, will fall far short of the mark in satisfying projected year 2000 requirements. Increasing shortfalls in militarily-useful shipping necessary to deliver critically important unit equipment and POL, a shortage of trained merchant mariners, and the remnants of the once-strong US shipbuilding and repair industry preclude our ability to execute deployment plans in required time frames. Unless these trends are immediately reversed, the United States will soon face major constraints in its ability to deliver necessary sealift cargoes to the war.

CHAPTER VI

SEALIFT--NECESSARY NEAR-TERM MEDICINE

*"The decline in size and capacity of the United States merchant marine has been a major concern of national security planners. . . . In this era of constrained resources, if there were no United States flag merchant marine, it would have to be replaced by a government owned and operated sealift fleet--at considerable additional expense to acquire and operate."
(Admiral W.J. Crowe, USN, Chairman, Joint Chiefs of Staff)*

The steadily eroding capability of the US merchant marine has not been ignored by the Defense Department. In response to the diminishing size of the US-flag commercial fleet, the Navy has begun to do exactly what Admiral Crowe said would be necessary--increase the number and capability of organic sealift assets owned and controlled by the Military Sealift Command.
(16/85)

Sources of Military Sealift Command (MSC) shipping primarily come from two sources: the MSC nucleus fleet of Government owned and long-term chartered vessels currently operating in support of peacetime military operations; and the National Defense Reserve Fleet (NDRF) of ships maintained in reserve for contingencies which exceed the combined capability of the MSC nucleus fleet and the US-flag commercial fleet. Included in the latter category is the Ready Reserve Force (RRF)--a subset of NDRF ships which are maintained in an upgraded material condition which permits them to be activated in a 5, 10, or 20-day readiness status.

Perhaps the most significant upgrade to MSC capability

involves the increased lift capacity and improved readiness status of the RRF. In 1987 this force contained 77 dry cargo ships, 8 tankers, and 1 schoolship that could be used as a troopship. Realizing the necessity of compensating for the decreasing number of US-flag commercial vessels, the Navy has programmed an increase in the size of the RRF to 121 ships by 1992. The Navy has also stated its intention to further expand the RRF beyond 1992 by acquiring 16 additional tanker assets. (5/29)

Improvements in MSC capability have not been limited to increased numbers of ships. Equally important have been improvements in the type of vessels as well as their associated lift and operating characteristics. Receiving the most attention has been the acquisition and subsequent conversion of eight SeaLand SL-7 container vessels which are now designated Fast Sealift Ships or FSS. These ships, formerly the largest container vessels in the world, have been converted to a predominantly roll-on roll-off configuration and can carry the equipment of an entire Army mechanized division. With speeds in excess of 30 knots, they are far less susceptible to attrition from enemy action and can sail from the east coast to Europe in 96 hours. (12/144) Likewise, the majority of ships contained in the RRF represent the more modern and most militarily useful vessels in the American inventory. They include roll-on roll-off vessels, barge carriers, selected breakbulk ships, specially modified tankers, and crane ships to facilitate the discharge of

containers from non-selfsustaining containerships and logistics over the shore operations. (5/29)

Thus, to alleviate the sealift shortfall and to help meet the needs deemed essential for national defense, the United States has essentially replaced the sealift capability lost from our commercial merchant marine with increased organic capability in the US Navy. Is this the best way to insure we have the necessary sealift to support national defense requirements? Analysis indicates both positive as well as negative ramifications from this course of action.

On the positive side, organic military sealift assets represent a more assured capability. As these ships are owned by the military, the time-consuming and politically sensitive requisitioning process to obtain commercial vessels from private industry is avoided. Thus, beyond the Maritime Administration who maintains the NDRF, there is no middleman involved in the process to place these ships at DOD's immediate disposal. Additionally, as the great majority of these ships are not actively engaged in world trade, they will not have to be recalled from distant corners of the world. Tied up at or near major CONUS SPOEs, theoretically they will be ready to accept outbound cargoes sooner, can subsequently sail sooner, and ultimately arrive sooner in overseas theaters. Owning its own ships also allows the military to determine what types of ships it acquires and thereby insures a greater number of militarily useful vessels thereby avoiding the expensive and time-consuming

requirement to modify many commercial vessels to accommodate defense cargoes.

Unfortunately, there are several offsetting factors and compelling reasons why over-reliance on Navy organic sealift may not be in the best interests of the United States. Perhaps the most important consideration is the fact that this practice will equate to placing one more nail in the coffin of the United States merchant marine thereby degrading rather than promoting American economic strength. Defense transportation policy has traditionally sought to promote the commercial transportation industry and not to duplicate existing or potential private capability. Over-reliance on organic sealift violates this principle, hurts commercial industry, and forces the DOD to expend critical defense dollars buying capability that may already exist or, given a viable national maritime policy, could conceivably be induced from the commercial sector. (15/1-3) Indeed, it costs about \$600,000 per year to maintain a ship in the RRF, and \$1.5 million to activate. (14/52) If the necessary sealift capacity can be obtained from private industry, then the extensive funding necessary to create an expanded organic capability could be applied to other strategic mobility needs in the airlift or prepositioning arenas, or the funds could be used to procure more combat forces.

Additionally, as the majority of organic vessels would be laid up awaiting contingency use, they do little or nothing to support our ailing shipbuilding and repair industry. Likewise,

as they are not actively engaged in peacetime commerce, they do nothing to support the existence of the very necessary numbers of US mariners which are needed to support surge shipping requirements. (11/23) Indeed, as noted earlier, there is already a shortage of merchant mariners in the United States. Over-reliance on organic sealift will only exacerbate this problem. Possessing organic sealift vessels is, to a degree, reassuring, but if we can not crew these vessels, they equate to little more than phantom sealift capability.

What's the final verdict--good or bad--on the trend to expand our organic sealift capability and rely less on our commercial merchant marine? The answer is both. In the near-term the United States must take the measures necessary to insure we have the sealift needed to support our national strategy and to be able to deliver the required amounts of fighting forces to overseas theaters. Indeed, in the wake of the precipitous decline in the US merchant marine and the absence of a viable national maritime policy to reverse this situation, DOD would be remiss not to develop alternate sources for sealift. But if the decline in the US merchant marine can be reversed and this industry restored to a position of strength, it would prove a far more cost-effective and reliable sealift source than attempting to procure, maintain, and--upon mobilization--activate Navy organic vessels in support of national defense. In all likelihood, some organic sealift capability will always be needed, but we should first insure we maximize the capability

which can be generated by a strong and viable US merchant marine fleet.

CHAPTER VII

SEALIFT--THE OPTIMAL LONG-TERM CURE

" . . . there is no more militarily efficient, cost effective, and reliable way to provide the majority of the military sealift requirement now and in the future than through an active United States flag merchant marine. The ships should be militarily useful and operating, engaged in peacetime in carrying commercial cargo, and manned by United States crews." (First Report of the Commission on Merchant Marine and Defense, 1987)

While acknowledging the various advantages of DOD organic sealift and conceding that possessing some military-owned sealift is likely necessary, every major US sealift study has concluded that the optimal long-term solution to our sealift dilemma rests in revitalizing the US merchant marine. The preceding chapter discussed the merits and drawbacks of DOD organic sealift. What are the corresponding advantages and disadvantages of active, commercial sealift and a revitalized US merchant marine?

On the positive side, there are seven compelling reasons why active US-flag merchant ships are preferable to reserve DOD organic vessels.

First, active shipping is immediately operational and capable of providing reliable service. Thus, its use is not dependent on activating ships held in reserve by the military. While active shipping may have to be recalled from trade routes around the world, this process may well take less time than breaking reserve DOD ships out of storage. (5/61)

Second, active ships provide a cadre of trained merchant mariners which can be used in wartime to crew both active and

reserve vessels. Thus, if we can restore a strong and viable US merchant marine, the shortfall in merchant mariners will be greatly reduced if not totally resolved. (1/15)

Third, active ships help maintain the industrial shipbuilding and repair base so necessary in time of war. Reserve vessels need these services only in wartime, however, active vessels need these services in peace as well as in war. In fact, an active US merchant fleet is probably the only way to guarantee that the necessary facilities, shipyard workers, and maritime materials and end-item components are available when needed to meet surge shipping requirements. (7/113-117)

Fourth, active ships are usually more modern and require less maintenance and crewmembers than reserve shipping. Accordingly, they will be less susceptible to mechanical breakdowns during war and will pose less demands on the scarce supply of trained merchant mariners. (5/61)

Fifth, a strong US merchant marine composed of active, US-flag vessels significantly reduces American dependence on allied shipping and on potentially unreliable EUSC assets. This benefit would be realized in both peacetime and wartime. (23/16-17)

Sixth, active ships and a healthy US merchant marine will pay for themselves while reserve shipping pays no return and imposes significant yearly costs for storage and periodic maintenance. (5/61)

Seventh, a healthy US merchant marine with a viable fleet of active ships helps support the US economy by providing jobs for

mariners and shipyard workers, by paying taxes, and by contributing favorably to the balance of payments. (5/61)

Unfortunately, while nearly all authorities agree that rebuilding the US merchant marine is the optimal, long-term sealift solution, achieving this goal has proven extremely elusive. Two factors often cited as major disadvantages of commercial, active shipping help explain this situation. One is the belief that the United States can not afford the cost necessary to restore a strong and viable US merchant marine. The other factor is the criticism that, even if these costs could be borne, the type ships necessary for an economically viable merchant marine in peacetime--predominantly non-selfsustaining containerships and large tankers--would be of little value to the military in time of war because they are not militarily useful. Closer analysis suggests these constraints may be overcome. The key, however, is to establish a strong and viable US maritime policy. The following are some of the more important initiatives which will lead to the establishment of an effective US maritime policy and, in turn, will promote an affordable US-flag commercial fleet capable of serving both the peacetime and wartime needs of the nation.

Development of an effective sealift advocacy is critically needed and necessary for the establishment of an effective federal maritime policy. In this regard, the military has taken a major step forward with the creation of the United States Transportation Command (USTRANSCOM). Designed to serve as an

honest broker among all modes of transportation, USTRANSCOM will provide centralized strategic mobility planning in peacetime and coordinated deployment actions during conflicts. The US Congress desperately needs to follow suit and consolidate maritime matters in one primary federal agency with the requisite power and authority to promulgate a strong, comprehensive, and consistent US maritime policy.

The primary purpose of US maritime policy must be to rebuild our ailing merchant marine. To do this, effective fiscal strategies must be developed and then rigorously adhered to. As discussed earlier, subsidies to both shipping companies as well as shipbuilding firms have been an integral component of US maritime policy since the Merchant Marine Act of 1936 yet, to date, have failed to arrest the decline in the maritime industry. However, supporters of the subsidy programs contend that such mechanisms as CDS and ODS can significantly help the American maritime industry if not encumbered by the many associated conditions and regulatory restrictions incorporated in these programs. To alleviate this situation, the United States should fully fund the subsidy programs as established in the Merchant Marine Act of 1936. However, to insure this assistance achieves its desired effect, excessive trade restrictions and regulatory measures such as crew size, trade route limitations, and inordinate pollution and safety standards must cease. There is no reason why US-Flag vessels should operate under conditions more stringent than the world standard. Insisting that they do

is counterproductive and serves only to impose an unfair disadvantage when US shipping attempts to compete on the tough world market. (6/81-89)

US maritime policy should attempt to maximize the productivity of selected DOD organic shipping by allowing US commercial industry to operate these vessels in peacetime. Taxpayer money built these ships. It makes more sense to use them and thereby improve our peacetime economic posture than to let them sit idle waiting for a military contingency. For US shipping firms now operating in the red, provisions whereby they could lease ships free of charge would significantly enhance their chances for economic revival. Additionally, such a program would insure DOD owned ships are operationally ready in time of war, would increase the pool of trained merchant mariners, and stimulate the US shipbuilding and repair industry. This essentially is nothing more than a form of construction subsidy whereby the Government builds the ships and commercial industry maintains them and guarantees their availability in times of conflict. Despite the fact that these ships may not be the best suited for commercial trade, at zero construction costs, they would still be a bargain for private industry.

US maritime policy must also establish a prudent balance between DOD organic sealift and US merchant marine sealift. Some DOD organic shipping--essentially a fixed number of RRF vessels designed primarily for extremely unique military needs--is and likely always will be necessary. However, the military,

Congress, and the US maritime industry must work together to limit this number of ships to the bare minimum. The optimal solution is to draw as much capability as possible from commercial industry. Building ships is an expensive proposition. America can not afford to build one fleet for the military and another for our merchant marine. We must build only one fleet and place it where it can benefit both the peacetime economy as well as national defense needs. That place is in the private sector.

The United States must fully exploit the advantages offered by such innovations as seasheds and flatracks whereby ships which are economically viable in peacetime can be made militarily useful in war. These innovations have proven their use in modifying existing container ships to accommodate the breakbulk shipments associated with vital unit moves. We should now quickly expand the numbers of these assets, insure a greater number of vessels are modified to accept this equipment, and develop procedures to insure these modifications can be accomplished in a timely manner should surge shipping requirements necessitate such augmentation. Capitalizing on the benefits of such innovations as seasheds and flatracks offers a low-cost means to make US-flag commercial vessels both economically viable in peacetime and militarily useful in times of war.

Likewise, the United States should fully promote increased emphasis on advanced sealift technologies such as that offered by

surface effects shipping. This new form of sealift uses self-generating, air-cushioning techniques to achieve high speeds and low draft requirements. With these attributes it offers the potential to carry increasing amounts of breakbulk cargoes at speeds approaching 60 knots. When viewed from the perspective of productivity, as measured in numbers of ship sailings and cargo delivered during a set period of time, the apparent high price of this endeavor may well prove cost-effective and the best means to expedite sealift shipments, decrease transportation costs, and reduce sealift attrition. (2/116)

In summary, while recent DOD actions to expand the size and capability of Navy organic sealift are prudent given near-term defense needs and the current shortfall in commercial capability, in the long term the nation will be better served, both in peacetime and wartime, by a strong and viable US commercial fleet. Some organic, military capability will likely always be required, however, the preponderance of US sealift capability should reside in the commercial sector. The means exist to restore the US merchant marine to a position of strength and vitality. The measures outlined above are not all inclusive, but would go a long way to achieving this worthy goal.

CHAPTER VIII

CONCLUSIONS/RECOMMENDATIONS

*"The military necessity for a healthy Merchant Marine in our national and naval strategy is clear and unassailable. Measures taken by the military to meet their appropriate share of the responsibility for sealift are well-known. Much more needs to be done jointly to revitalize the commercial aspects of our merchant fleet to meet the balance of the military and economic requirements for sealift in time of national emergency."
(VADM Rowden, former commander, Military Sealift Command)*

The credibility of America's military deterrence, as well as our ability to fight and win should deterrence fail, require more than combat readiness and national will. Equally important is our ability to project combat forces to war zones worldwide in an efficient and timely manner. Sealift plays a central role in this process. As in the past, it will be required to deliver the great preponderance of dry cargo and POL shipments in any future conventional conflict. Yet, with the unprecedented decline of the American merchant marine, the capability of our sealift forces to meet wartime defense needs remains highly suspect today and, given projected trends, will be woefully inadequate by the end of the next decade. The United States simply can not afford to forfeit our ability to rapidly deploy and sustain our fighting forces. Nor should Defense planning continue the trend to rely more and more on costly DOD organic sealift, unreliable EUSC shipping, and conditional support from allies. The optimal sealift solution is to rejuvenate and restore the US merchant marine to a position of strength and vitality. This alternative

offers significant benefits in both peacetime and wartime and is likely the only way to assure America has enough ships, mariners, and shipbuilding and repair capability to meet national maritime needs. The following conclusions and recommendations support this position and offer feasible methods to improve America's strategic mobility posture and sealift in particular.

1. Both the Congress and the military must realize that the capability of our fighting forces, both as a deterrent to war as well as the means to win a war if deterrence fails, is of little or no value if these forces can not be delivered to the battlefield in a timely manner. As elementary as this statement seems, we continue to build and approve war plans which are evaluated as marginally capable from a transportation standpoint. Accordingly, our ability to wage war is limited by our strategic mobility capability. DOD must insure our Congressional leaders understand this fact and the resulting importance of the US merchant marine. Within DOD, we must insure we correlate increases in our fighting forces with corresponding increases in strategic mobility capability. With every procurement action should be a deployment analysis to insure we have the means to deliver new weapons systems to the field of battle. If new systems are intended to replace older systems, then perhaps additional lift is not needed. If additional lift is needed, however, we may well discover that increasing our warfighting capability can only be accomplished by increasing our strategic lift assets or by prepositioning additional assets overseas.

Hence, it may be prudent to buy less combat force structure and more lift capability. In short, we must exercise force structure constraint to make sure we don't buy more than we can carry.

2. In delivering combat forces to the war, defense planners must remember that there is a critical balance within the strategic mobility triad which must be maintained to reap the most benefit from the potential synergistic effect of airlift, sealift, and prepositioning. An increase in one component's capability at the expense of a decrease in another may destroy this essential synergy. As indicated earlier, each component of the strategic mobility triad has discrete strengths and weaknesses. They can not be easily substituted for each other. Accordingly, logisticians must remember to mode-optimize our deployment plans and insure we make every attempt to properly balance the capabilities of respective elements of the strategic mobility triad with the lift needs of our combat forces.

3. At present, the synergy so necessary to the effectiveness of America's strategic mobility triad may be out of balance. While tangible progress has occurred in the areas of strategic airlift and prepositioning programs, sealift seems to be lagging behind. US sealift forces, even when coupled with substantial allied support, face critical shortfalls in the number of ships, mariners, and in shipbuilding and repair capability.

4. The United States must establish a viable sealift advocacy in both Congress and the DOD to effectively manage and oversee the challenge of rebuilding the US merchant marine and insuring

we have enough sealift to meet potential wartime needs.

From a military perspective, the creation of USTRANSCOM represents a giant step forward in establishing an effective advocate for sealift as well as the other elements of the strategic mobility triad. Additionally, this unified command offers the potential to truly integrate strategic mobility planning and execution. While it is too soon to rate USTRANSCOM performance, we must be ready to make necessary adjustments as needed to give this organization the responsibility and authority it needs to carry out its considerable mission. In this regard, the current practice of dual-hatting the MAC commander and CINCTRANS seems inappropriate given the combined workload of these two positions as well as the history of Service rivalry and parochialism within the transportation arena. To improve USTRANSCOM effectiveness, the commander position should be a separate four-star billet and this position should be rotated among the Army, Navy, and Air Force to insure a multi-modal perspective to strategic mobility.

From a Congressional perspective, the nation can no longer afford to fragment maritime affairs among multiple agencies and committees. The importance of sealift and the precipitous decline in the US merchant marine dictate consolidation of maritime affairs in a single Congressional agency with both the responsibility and power to provide strong, clear, and comprehensive maritime policy. Certainly, several Congressional bodies will of necessity retain collateral responsibilities

regarding maritime matters, however, one central authority is critically needed.

5. Once a strong and proper maritime advocacy is established, they must develop and promulgate an effective federal maritime policy sufficient to meet both peacetime and wartime national needs. The history of federal maritime policy has ranged from complete deregulation and benign neglect to extensive Government participation and micro-level involvement. Neither has worked. In part, this is due to vacillation between the extremes of these opposite policies. Additionally, the effectiveness of subsidies and other forms of Government assistance have been reduced by the simultaneous application of counter measures such as inordinate operating standards and excessive regulatory restrictions. A strong, clear, comprehensive, and consistent policy is critically needed if the United States is to rescue its dying merchant marine. Given the state of the our merchant marine and the competition it faces from foreign commercial fleets--most of which are heavily subsidized by their respective governments, substantial federal assistance to the US merchant marine appears both prudent and necessary. Accordingly, we should review and, where necessary, restructure maritime subsidy programs. The CDS and ODS programs embodied in the Merchant Marine Act of 1936 may well prove sufficient if not encumbered and diluted by over-regulation and insistence on operating restrictions which far exceed international standards.

6. Federal maritime policy must also strike a proper balance

between DOD organic and US commercial sealift. The efforts of the military to reduce the sealift shortfall have been laudatory, however, near-term enhancements within the Military Sealift Command's organic fleet and various other sealift work-arounds such as expanded use of EUSC shipping, while important to our overall sealift effort, can not replace the capability lost by the US merchant marine over the last 40 years. Likewise, organic military shipping can not equal the potential offered by a restored and rejuvenated US-flag fleet. There will always be a requirement for some organic military sealift, however, DOD and Congress must realize that the majority of our sealift capability should, if at all possible, be drawn from US-flag commercial shipping. Such a policy promotes the economic well-being of the country while supporting the principle of not duplicating in the military capability that can be provided by private industry. DOD, Congress, and the US maritime industry must coordinate their efforts to achieve this end.

7. US maritime policy must also aggressively support and expand US efforts to develop new technologies in the area of sealift. DOD in particular must continue to support such innovations in existing sealift as seasheds and flatracks to insure the maximum amount of the ever-increasing number of container ships are made militarily useful. Additionally, DOD should fully promote the development and testing of surface effects ships.

8. If the United States is to continue as the world's greatest

military and economic leader, we must possess a merchant marine capable of supporting the nation's considerable peacetime needs and wartime obligations. Yet today, more than 96 percent of US oceanborne foreign trade is carried on foreign vessels and execution of our conventional military strategy and associated war plans is heavily dependent on considerable allied support and additional augmentation from unproven and unreliable flags of convenience shipping. This need not be the case. The US merchant marine can and should be restored to a position of strength. We have the means and ingenuity to achieve this worthy objective. What's needed now is commitment and action.

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