STRATEGY RESEARCH PROJECT

MEETING THE STRATEGIC SEALIFT NEEDS OF THE U.S. WITH A LIMITED MERCHANT MARINE

BY

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ABSTRACT

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The ships and mariners of the U.S. merchant marine have played an important role in every war that the U.S. has entered this century. However, the U.S. merchant marine has been in a protracted decline. From a high of 3500 in 1945, the number of U.S.-flag ocean-going vessels has declined to 322 in 1997. And over the last 10 years, the number of active U.S. merchant seaman positions has fallen from 28,000 to 7,600. While the U.S. government has compensated for the decline in the numbers of ships by acquiring an organic strategic sealift fleet, no coordinated effort has been made to maintain an adequate pool of merchant mariners to man the ships. Currently, U.S. Maritime Administration estimates show that a shortfall of mariners available for strategic sealift will manifest early in the 21st century. Ironically, in the face of declining merchant marine, the U.S. is more dependent than ever on strategic sealift due to a reduced overseas presence and need the to have a force-projection military. This report frames the issue of the declining pool of mariners as a crisis that threatens to undermine the nation's ability to project military power in support of the National Security Strategy.

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MEETING THE STRATEGIC SEALIFT NEEDS OF THE U.S. WITH A LIMITED MERCHANT MARINE

> *Sealift is essential both to executing this country's forward defense strategy and to maintaining a wartime economy. The United States' national sealift objective is to ensure that sufficient military and civil maritime resources will be available to meet defense deployment, and essential economic requirements in support of our National Security Strategy.*
>
> -U.S. National Sealift Policy

The ships and mariners of the U.S. merchant marine have played an important role in every war that the U.S. has entered this century by bringing supplies to the foreign soils where soldiers, sailors, marines, and airmen fought the nation's battles. It is noteworthy that the merchant marine, a civilian commercial force, has been so integral to the successes of the U.S. Armed Forces. Because of the continuing need for strategic sealift, the relationship between the Armed Forces and the merchant marine is of vital importance to U.S. national security.

The fall of the Berlin Wall in 1989 marked the end of the Cold War and the beginning of a period in which the U.S. has emerged as the world's lone superpower. National security strategies centered around the desire to contain communism have given way to the current U.S. strategy based on global engagement[1]. Although the Armed Forces have many roles to play as outlined in the National Military Strategy (NMS), the lack of a peer competitor has allowed for significant reductions in end-strength, forward deployment of troops and equipment, and overall Department of Defense (DOD) funding. With these reductions in place, the U.S. has shifted from a forward-deployed force to a power projection force. "Toward this end, the United States must have jointly trained and interoperable forces that can deploy quickly from a posture of global engagement – across great distances to supplement forward-stationed and forward-deployed U.S. forces -- to assist a threatened nation, rapidly stop an enemy invasion, and defeat

an aggressor, even in an environment of NBC weapons threat or use."[2] The U.S. remains committed to maintaining the ability to fight and win two nearly simultaneous major theater wars.

Plans to support these ambitious goals have increased reliance on the sealift capabilities of the U.S. It is expected that equipment and supplies for five Army divisions, as well as the corps and theater support elements, must be deployed to each major theater war, primarily by sea.[3] Significant sealift will also be required to ensure that the Marines, Air Force, and Navy have all of their required assets in-theater.

It is ironic that the U.S. has adopted a national security strategy so dependent on sealift when the U.S. merchant marine, both in numbers of ships and mariners, is at an all time low and continues to decline. The decline has not gone unnoticed. It has caused the U.S. government to react by creating of a fleet of government-controlled "organic" sealift ships. This reaction to sealift shortfalls is part of a continuing pattern of government actions in the 20th century, all of which have failed to ensure a sustainable strategic sealift capability.

The excerpt from the National Sealift Policy which leads this introduction captures the essence of what strategic sealift should be. First published in 1989, it remains valid today. However, whether or not the nation currently possesses adequate sealift capabilities continues to be debated. There are credible doubts regarding the availability of sufficient U.S.-flag ships and qualified merchant mariners.[4, 5, 6, 7, 8] Even the buildup of organic sealift ships during the past two decades cannot overcome the crisis created by the limited number of mariners qualified to crew the ships. Additionally, several U.S. and international shipping regulations aimed at improving mariner qualifications and ship management practices will come into force between now and 2002, exacerbating the problem of a declining merchant marine (i.e., the Standards of

Training, Certification, and Watchkeeping (STCW) for Seafarers Convention and the International Safety Management (ISM) Code).

The purpose of this report is to explore the current strategic sealift problems related to operating with a limited merchant marine so that the reader will appreciate the gravity of the situation. It will not attempt to solve the problems; however, it will provide a foundation for understanding the issues. The report will summarize the 20th century history of strategic sealift, reviewing the most recent improvements based on lessons learned from the Gulf War and noting, in particular, the growing trend of reliance on organic strategic sealift ships without the necessary emphasis on sustaining an adequate pool of mariners to crew the ships. Ultimately, it will demonstrate to the reader that the declining pool of mariners presents a crisis which threatens to diminish the nation's ability to project military power, as well as, to undermine the National Security Strategy.

SEALIFT BY REACTION; THE TWENTIETH CENTURY LEGACY

> *The United States merchant marine is a small industry that has played a disproportionately large role in national and international affairs. Twice during the past fifty years, the United States has been compelled to undertake massive shipbuilding programs to meet military needs overseas. Following each World War, the U.S. government has attempted to foster the development of a privately owned and operated U.S. merchant marine that would carry a substantial portion of the nation's peacetime trade and be available for future emergencies. On both occasions, it has encountered severe difficulties and achieved only partial success.*
>
> -Samuel A. Lawrence (1966)

The link between maintaining a viable U.S. merchant marine as an economic and strategic (national security) backbone has been recognized throughout the 20th century. For the most part, economic market forces have been allowed to dictate the strength of the merchant

marine, and foreign shipping has proved to be cheaper even for the world's largest maritime trading nation, the U.S. The result is that about 95% of U.S. maritime commerce is conducted on foreign-flag ships, typically constructed overseas at a lower cost and manned with lower wage foreign crews.[9]

While the impact of a declining U.S. merchant marine on the overall economy of the U.S. appears to be minor, the strategic impact is clearly negative. It is vitally important to recognize the two pronged nature of the problem – both number of ships and number of mariners – in dealing with a limited merchant marine. From a high of 3500 in 1945, the number of U.S. privately owned ocean-going vessels has declined to 322 in 1997.[10] And over the last 10 years, the number of active U.S. merchant seaman positions has fallen from 28,000 to 7,600.[11, 12]

Despite the fact that the link between the viability of the merchant marine and national security had been recognized, the U.S. has a history of ignoring its importance this century. The century began with the U.S.-flag ships loosing out to foreign competition because of U.S. owners' reluctance to shift from wooden clipper ships to the steel steamships already popular with European shippers.[13] When the U.S. entered World War I in 1917, it suddenly found it could not move troops and supplies without the assistance of foreign ships. Foreign-flag ships were called home to support their own countries' war needs, and war material simply piled up at U.S. ports. The U.S. reacted by instituting the Shipping Board to oversee a large shipbuilding program. Although only a few ships were completed prior to war's end in 1918, shipbuilding continued until 1921 after 1,275 ships had been delivered.[14]

The shipbuilding boost provided by the Shipping Board, combined with the destruction of the German merchant fleet in World War I, gave the U.S. a temporary period of international shipping prosperity. However, things quickly deteriorated because it was economically more

favorable for competitors to build ships overseas and operate them under less restrictive foreign registries.[15]

In 1936 the U.S. took what seemed to be a major step, passing the Merchant Marine Act (MMA). It introduced language providing a foundation for a coherent national sealift strategy that unfortunately has never been achieved. Section 101 of the MMA reads that the U.S. shall "have a merchant marine sufficient to carry its domestic water-borne commerce and a substantial portion of the water-borne export and import foreign commerce of the United States... and capable of serving as a naval and military auxiliary in time of war or national emergency."[16]

The MMA established the Maritime Commission and called for the construction of 500 ships to be built over the next 10 years. World War II interrupted the program and redirected the Maritime Commission overseeing an even more ambitious program resulting in the construction of 5,777 ships, all manned by civilian mariners. Some of these did not survive the war because of German U-boat attacks, and those that did were of limited value since they were designed for a service life of only 5 years. After the war, many were placed in an U.S. military reserve fleet. Others were offered for sale with the unintended effect of putting 1,113 inexpensive ships into the hands of foreign commercial shipping competitors.[17]

The Korean and Vietnam Wars brought to light another aspect of effective sealift – the port infrastructure. Neither country had modern ports and that hampered off-loading operations; at times, leading to one to two month delays in ships being able off-load their war supplies. (This has caused the U.S. to refit several large ships as auxiliary crane ships to provide that off-loading capability for situations where the port infrastructure is under-developed or destroyed.) Ultimately, the Korean War required us to buy back several World War II ships to meet sealift needs; the Vietnam War never tested the surge capacity of the U.S. strategic sealift capability.[18]

The next great need for strategic sealift this century was, of course, the Gulf War in 1990/91. However, the intervening years between the Vietnam and Gulf Wars were marked by a rapid decline of the merchant marine. The U.S. government reacted to this decline by creating an organic government sealift fleet. That effort, which completes the 20th century legacy, is chronicled in the next two chapters.

SEALIFT BY NECESSITY; THE MODERN ERA

The development of a permanent, government owned sealift was never contemplated.

-Robert W. Kestelfoot, USN(Ret.)

As the Vietnam War ended and the owners of those aging U.S.-flag sealift ships sought employment of their ships in commercial trade, they found themselves in competition with modern ships flying foreign flags. The U.S.-flag ships which supported the Vietnam War disappeared virtually without replacement, and so did the ocean-going mariner positions. This decline in the U.S. merchant marine occurred abruptly in the late 1970's, and for the purposes of this report, marks the beginning of the modern era for strategic sealift.

What identifies the era more than anything else is the notion that sealift shortfalls related to a limited merchant marine could be effectively mitigated by government organic ships. The modern era is also marked by a pre-occupation with number and types of ships, to the exclusion of maintaining the pool of mariners to crew the ships.

In 1981, peacetime awareness of sealift shortfalls was heightened when President Reagan established a Rapid Deployable Force capable of responding to global security threats by moving combat and combat support equipment on short notice.[19] The Navy had the responsibility for sealift; however, when they looked to the merchant marine for support, they found an industry

not only in decline, but one in which containerization was revolutionizing cargo transportation. Container ships are not conducive to moving large numbers of wheeled and tracked equipment such as trucks and tanks.

The Navy reacted by forming a Strategic Sealift Branch to develop interim measures to ensure adequate sealift *until the U.S. flag merchant marine could be revitalized.* Unfortunately, there was no government strategy to revitalize the merchant marine. The Sealift Branch, which was largely unfunded the first 2 years (1982/83), began to receive line item funding and immediately started to acquire militarily useful ships. These included the following:

- Eight SL-7 container ships for partial conversion to roll-on/roll-off (Ro/Ro) loading;
- Eight container ships for conversion in auxiliary crane ships;
- Two oil tankers for conversion into 1000 bed hospitals; and
- Various ships (twenty-five in all) to support the need by all services to have equipment and supplies prepositioned at sea. [20]

All of these were available at the start of the Gulf War. Additionally, the U.S. Maritime Administration (MARAD) had custody over ships in the Ready Reserve Force (RRF). The RRF, at that time, was an unmanned sealift fleet with ships maintained for activation in five, 10, or 20 days. The fully inactive RRF numbered 96 ships (i.e., 83 dry cargo, 11 tankers, and two troop ships).[21]

The hypothesis of the modern era in strategic sealift was severely tested by the Gulf War. And it was U.S government organic ships, manned by civilian merchant mariners, which provided the decisive sealift surge. Organic prepositioned ships arrived in the Gulf as planned. The SL-7s, or Fast Sealift Ships (FSSs), performed superbly with seven of the eight arriving in the Gulf 11-14 days after loading in the U.S. They averaged 27 knots and carried more cargo per

voyage than any two U.S. or foreign chartered vessels combined, having delivered 13% of all cargo on 32 voyages by the end of the ground war.[22] The same cannot be said about the RRF which had only 78 ships activated, and only 27% of the RRF ships were activated within their assigned periods, due mainly to cumulative repairs which had been deferred while the ships were in the inactive status. Once operating, however, the RRF provided 28% of the sealift.[23]

The organic ships could not meet all of the U.S strategic sealift needs and the limited ability of U.S.-flag ships to provide sealift became painfully apparent. U.S.-flag ships were initially contracted, but U.S. sealift needs could not be met without contracting with foreign-flag ships. In all 209 ships were chartered, 177 of which were foreign-flag.

The decision to develop organic sealift and the way the ships were employed in the Gulf War was certainly a success story for U.S. strategic sealift. However, the critical factor in the success was the thousands of merchant mariners who signed on to crew the FSS and RRF ships. Many of these came from an aging population of retired mariners, with the necessary experience to run the older stream engines and deck equipment found in the RRF. Others came from the pool of mariners employed in an U.S.-flag merchant fleet which was 50 percent larger than the ocean-going fleet today. Unfortunately, that outpouring of qualified mariners could not be replicated today because there is no longer a glut of retired mariners, and the increased complexity of licensing requirements has made it more difficult for inactive mariners to maintain their licenses (see STCW discussion in subsequent chapter, "Sealift In Dire Straits; More Trouble on the Horizon").

SEALIFT BY THE NUMBERS; WINNING THE LAST WAR

Almost immediately after victory had been achieved, key Department of Defense (DOD) personnel began to formulate plans to obtain the additional sealift required to close the gap that had been all too clearly demonstrated. They had learned a lesson and, in spite of a declining defense budget, they began a determined effort not to be caught short again. While the planners concentrated on developing programs to obtain the necessary ships for a future emergency, little thought was given to the means of ensuring that a supply of trained personnel would be available to man them.

–Andrew E. Gibson (1992)

Sealift during the Gulf War was an impressive accomplishment. By the time it was over, 3.8 million tons of cargo had been moved into theater; 95 percent of the cargo was moved by sea on 500 ships, including U.S. organic ships, and U.S and foreign-flag ships under charter.[24] However, the Gulf War also confirmed what dozens of studies had concluded – that the U.S. had insufficient sealift to deliver the required weapons, support equipment, and ammunition in an acceptable timeframe.[25]

DOD, while still basking in the glow of victory, moved quickly to establish programs designed to deliver additional organic sealift. Efforts effectively capitalized on two of the most glaring vulnerabilities. First, the general dependence on foreign flag shipping; and second, the specific dependence on contracted Ro/Ro ships -- predominately foreign. The focus on numbers and types of ships continued.

Because of the global unity of the alliance against Iraq in the Gulf War, most foreign governments were allies of the U.S., and they were very willing to allow ships flying their flags to support U.S. sealift needs. The fact that agreement among such a large and united coalition is unlikely in future wars underscores the vulnerability of dependence on foreign-flag shipping.

Additionally, even with the global unity, there were situations which caused legitimate concern.[26]

- Several nations did not allow their ships to be used for deploying American forces, including the USSR, while Germany only chartered four ships and Japan (even though there were 426 Ro/Ro ships in their registry) did not allow the U.S. to charter any ships.
- The U.S. chartered ships from nations that it is probably unwise to rely upon in the future, including Togo, Poland, Yugoslavia, and Bangladesh.
- For a variety of reasons – political, religious, pay disputes, and , most commonly, fear of entering the combat zone – crews on at least 13 foreign-flag ships carrying U.S. cargo delayed in entering and one fully refused to enter the area of operations. (Only the U.S. *is not signatory* to the International Transport Workers Federation Seafarers Section Resolution which gives seafarers the right to *decline* to enter a war zone.)[27]
- There were problems coordinating operations of foreign ships caused by language difficulties and ships owned by a number of interlocking shell companies. For example, when the crew of the Quatari-flag ship, Trident Dusk, refused to sail into the Gulf, the U.S. Military Sealift Command did not know who the owners and operators were to get the crew replaced.
- U.S. commercial shipping is largely containerized; however DOD needs were substantial for the delivery of wheeled and tracked equipment. Foreign Ro/Ro's were in great demand and the U.S. had to hire large numbers of aging foreign Ro/Ro's with no other alternative.

The points above are among the most salient and persuasive lessons learned from the Gulf War sealift effort. The list is by no means complete. This deployment has been studied extensively throughout the 1990's in the Mobility Requirements Study (MRS)[28], the MRS Bottom Up Review[29], and the Defense Quadrennial Review.[30] The studies have made recommendations which have been heeded in large measure serving to shape the nation's strategic sealift as it exists today.

> Operation Desert Shield/Storm is also the model for how DOD plans to deploy in the Post Cold War Era. All of the major systems devised during the 1980s to enhance strategic mobility have been used, in many cases for the first time, so that the current deployment [Gulf War] is acting as a field test for the future. In addition, the military traditionally prepares for the last war, so the current deployment is the base from which future planning will likely start. Given the nature of the Post Cold War Era, future conflicts which the U.S. becomes involved with are not likely to be of a scale greater than the current deployment.[31]

The U.S. is currently relying on four groups of organic sealift ships to address the need for strategic sealift, particularly in the build-up, or surge phase. These ships have differing missions, response times, and extent of permanent crewing. By group, the ships are detailed below:

Afloat Prepositioned Force (APF).[32] The APF ships are strategically located throughout the world and are loaded with munitions and heavy equipment to support Army, Marine, Air Force, and Navy at the start of a conflict. They are ready to sail with only four hours notice. There are three basic groups of ships within the APF. Twelve Afloat Prepositioned Ships (APS) carry enough equipment, food, water, and other supplies to support elements of two Army heavy divisions – up to 34,000 personnel – for up to 30 days. The APS ships are prepositioned near Diego Garcia, near Guam, and in the Arabian Gulf. Also, thirteen ships are specifically designed for transporting Marine Corps supplies and equipment. These ships are known as Maritime Prepositioning Ships (MPS) which are divided into three squadrons, each carrying everything

needed to provide 30 days' support for a Marine Expeditionary Brigade of 17,000 personnel. Additionally, seven other vessels comprise the Logistics Prepositioning Ships. These ships contain equipment to support Air Force combat, a Navy field hospital, and military fuel.

Fast Sealift Ships (FSSs).[33] The eight FSSs ships are maintained in reduced operating status in the U.S. with partial crews and can be ready to sail within 96 hours of notice. They are capable of speeds approaching 35 knots, nearly double the speed of other ships of their size. Combined, the eight FSSs carry the equipment equivalent to one Army mechanized division. FSSs are ideal for transporting tanks, helicopters, and other bulky military equipment.

Large Medium-Speed, Roll-on/Roll-off Ships (LSMRs).[34] The third group is the 19 LMSRs that are currently being procured and built. The Ro/Ro design is particularly well suited for rapid loading and unloading of heavy self-propelled military equipment. Eight of these ships will displace ships in the APS fleet which will be returned to ports in the U.S. to join the Ready Reserve Force (RRF). The other 11 ships will be spread strategically through U.S. ports and maintained in a status similar to the FSSs.

Ready Reserve Force (RRF) Fleet.[35] The final group is the RRF, numbering 91 ships, maintained and crewed by MARAD. They are assigned readiness based on the need to activate within four, five, 10, 20, or 30 days of notification. The four and five day activation ships have a partial crew; the 10/20/30 day activation ships have no crew assigned. The RRF includes Ro/Ro cargo ships, breakbulk ships, barge carriers, auxiliary crane ships, tankers, and two troop ships. The shortage of Ro/Ro ships in the U.S. merchant marine makes the RRF especially valuable. Up until this year, the RRF was planned for an expansion to 100 ships; however, with the addition of the LMSRs, MARAD estimates that only 77 ships may be necessary by 2005. RRF ships are fleeted near major U.S. deployment ports.

SEALIFT IN CRISIS; SHIPS WITHOUT CREWS

"... putting less than half of the emergency fleet [RRF] in service has nearly exhausted the nation's supply of merchant mariners."

-Sam Skinner (1990)
U.S. Secretary of Transportation

For those close to strategic sealift issues, the words of Secretary Skinner rang true when spoken during the Gulf War build-up, and have echoed loudly in the intervening years. The fact that the number of mariners was perilously low has been acknowledged, but not fully appreciated. Little has been done about the mariner shortage problem in sharp contrast to the resources devoted to developing the organic sealift capacity as described in the previous chapter.

Despite the ongoing investments in hardware, it takes people – civilian merchant mariners – to man the ships. It may be surprising to some readers that although the organic sealift is controlled by the U.S. Military Sealift Command, once activated, the ships are contracted to commercial "operating companies " which, in turn, contract with civilian maritime labor unions to man the ships. The operating companies are required to keep ships in compliance with all U.S. and international shipping laws, including manning. These are the same laws which apply to ships purely in commercial service. (Since the organic sealift ships are government owned, technically they are "public vessels;" however, they have never been operated as such. In a time of national crisis, they could be operated as "public vessels" freeing them from compliance with the laws, but serious problems are likely to arise. The problems will range from objections by U.S. maritime labor unions to possible objections from foreign governments that could lead to denial of access to foreign ports or key waterways. The public vessel option is one which has never been seriously considered.[36])

The term that the shipping industry uses to describe the number of mariners it actually takes to crew a ship is the "establishment." The U.S. establishment is approximately three crews for two ships, or a ratio of 1.5 mariners for each seagoing billet. This accounts for the fact that many commercial ships operate 24 hours per day, 365 days per year; requiring mariners to work for four to six months straight, and then have a "vacation" period of similar length before returning to sea again. This means that considering those on vacation or on sick leave the current U.S. establishment is roughly 11,300.[37]

It is estimated by the U.S. Maritime Administration that it will take 2,638 merchant mariners to activate the full RRF, and 4,000 to operate the ships beyond four months. It is further estimated by the Maritime Administration that there were 7582 seagoing billets on ocean-going U.S.-flag vessels, including billets on organic sealift ships which were filled based on active or reduced operating status.[38] It is, therefore, unlikely that there will be enough merchant mariners to meet both the countries' future commercial and organic sealift needs, including the RRF. The harsh reality is that both fleets, the organic and the commercial, will compete for crews from the same limited pool of merchant mariners. Current Maritime Administration estimates show that a small shortfall will emerge in 2001, and will continue.[39] (The growth of the shortfall will depend on whether or not the RRF expands to 100 ships as planned or is reduced to 77 as is most recently being discussed.)

The most effective way to ensure that there are an adequate number of mariners is to "grow" the pool. For every billet created, the establishment provides 1.5 mariners (some estimate the ratio to be as high as 1.75). Increases in the number of fully crewed organic ships helps in modest measure; however, it alone does not do enough to ensure the availability of

mariners to round out the reduced operating status crews and to man the RRF. Growing the pool in any substantial way can only be done by developing a more robust U.S.-flag merchant marine.

Although increasing the nation's merchant marine has been an elusive task, Congress did at least slow the decline by passage of The Maritime Security Act (MSA) of 1996.[40] The authorizes a new 10-year assistance plan for U.S.-flag vessels – the Maritime Security Program (MSP). Under the MSP, Congress has authorized the expenditure of $100 million per year for 10 years to retain a fleet of about 47 militarily useful commercial sealift ships.[41] The MSP has already facilitated the reflagging to the U.S. of 11 foreign ships, all seven years old or less.[42] This immediately has the impact of modernizing the commercial sealift capability, and brings the benefit of new billets to assist in growing the pool of mariners.

Another effort, which has emerged to stem the sealift crisis caused by the decline of the merchant marine, is the Voluntary Intermodal Sealift Agreement (VISA).[43] VISA was approved by DOD in January 1997 to provide "assured access" to commercial intermodal (containerized) capacity to move ammunition and sustainment cargo. VISA acknowledges the fact that removing a ship entirely from commercial trade is not practical because foreign competitors will capture the trade and make it difficult for the U.S.-flag ship to return to commercial employment. Rather than requiring the ship itself, VISA requires instead that cargo capacity be made available in times of national emergencies. MSP participants *must* be enrolled in VISA, although other ships may be enrolled.

VISA is similar to the Air Force's Civil Reserve Air Fleet (CRAF) Program in that stages are incrementally called-out as the national emergency escalates. Commercial ship operators can volunteer capacity in VISA Stages I and II, but in Stage III participants must commit at least 50 percent of their capacities for non-MSP ships, and 100 percent capacity for MSP enrolled ships.

VISA participants get the advantage of profiting from transportation of DOD cargo during peacetime. That helps to ensure their viability, such that the ship, crew establishment, and cargo handing network are available for strategic sealift purposes.

SEALIFT IN DIRE STRAITS; NEW TROUBLE ON THE HORIZON

If sufficient sealift capability is to be assured for the next war, advocates must begin to turn the tide of the declining merchant mariner pool. While the MSP and VISA programs discussed in the previous chapter may have provided a sense that sealift problems are being effectively stemmed, there still is no reason to think the problem is solved. In fact, recent changes to domestic and international shipping laws aimed at improving merchant mariner proficiency and the quality of ship management will actually exacerbate the mariner shortage.

The inter-related issues affecting the mariner shortage problem are often confounding. This has certainly contributed to the U.S. government's inability to reverse the overall decline of the merchant marine. This chapter will serve to introduce the reader to some of the key impacts related to recent changes in shipping laws, highlighting the complexities of the problem in total.

The Standards of Training, Certification, and Watchkeeping (STCW) for Seafarers Convention, strongly supported by the U.S., will be in full force by 2002. The STCW contains sweeping international requirements aimed at improving skill levels of mariners through implementation of several broad objectives: dynamic assessment of proficiency, establishment of instructor and examiner standards; establishment of quality standards for courses and schools; improvement of training record keeping; and verification of medical fitness.[44] The resulting impact to U.S mariners is that additional training and expense will be incurred to maintain their qualifications. This will certainly cause employers to train only those mariners that they

definitely need, and will reduce the number of "inactive" mariners who maintain their own qualifications while employed shoreside (in case they later desire to return to sea-going employment). Additionally, centers training Great Lakes and inland waterways mariners will not have to train to STCW standards, for the first time creating a group of U.S. mariners which will not be immediately available for manning sealift ships until STCW compliant qualifications are obtained.

The International Safety Management (ISM) Code, also strongly supported by the U.S., will be in full force in 2002. The ISM Code is aimed at making improvements in ship management. Although not directly targeting mariners, the code requires that companies make a substantial investment in their shipboard personnel. Each company needs to establish training programs that meet the objectives of the company's own written safety and environmental protection policy, and will have to establish a continuous improvement process and educate all of its personnel , afloat and ashore, in its use.[45] Companies must obtain internationally recognized documentation, and be scrutinized by third-party audits, to demonstrate their compliance with the ISM Code. The impact on the available pool of mariners for sealift is indirect, but very real. Mariners will be more highly valued by individual companies and could become less interchangeable among types of ships due to requirements ship managers have for more highly trained crews. In addition, the operating companies for U.S. organic sealift ships (some which have skeletal or no crew) will need to ensure compliance with the ISM Code. This will be very difficult with "unqualified" mariners.

The 1996 Telecommunications Act eliminated the requirement for U.S.-flag ships to carry radiotelegraphy equipment if the ship is equipped with the Global Distress and Safety System (GMDSS).[46] As a result, all licensed U.S. deck officers must be able to operate the GMDSS,

requiring training through an approved course to certify competency. This will certainly lead to the elimination of the radio officer position, and could lead to a reduction in overall manning levels. Regardless of the outcome, it does highlight the fact that additional requirements continue to be added to mariner qualifications, thereby making it harder to maintain a qualified pool of mariners who can quickly be pressed into service for sealift manning.

The cumulative effect of these three legislative changes on the merchant marine deck officers of the near future is summarized in the table below. The comparison is valid for the typical U.S. organic sealift Ro/Ro ship. Some estimates of the additional training costs run as high as $20,000 per mariner considering course fees, per diem, and loss of wages.[47]

Deck Officer Requirements

1996	2002
1. U.S. Coast Guard License	1. U.S. Coast Guard License
2. Radar Endorsement	2. STCW Endorsement
	3. Radar Endorsement
	4. ARPA Endorsement[1]
	5. FCC GMDSS License[2]
	6. GMDSS Operator Course Endorsement
	7. Bridge Teamwork Course Endorsement
	8. Basic Safety Competencies[3]

Table 1

Notes:
1. ARPA: Automatic Radar Plotting Aid
2. GMDSS: Global Maritime Distress and Safety System
3. Basic Safety Competencies: Proficiency must be established in the four elements of basic safety (firefighting, first aid, personal survival, and personal safety/social responsibility)

Although there are obvious benefits to the world shipping community because of the requirements for better mariner training and improved ship management, the U.S. strategic sealift mariner pool is nonetheless heavily impacted by the changes. The impacts are potentially negative in both the absolute numbers of fully qualified mariners and the interchangeability of crewmembers serving on different types of ships (an important aspect of crewing a RRF ship).

Since the ships will not be operated as "public vessels," foreign port officials have the right to expect full compliance with the international conventions and laws. As mentioned earlier, less than full compliance puts U.S. sealift ships in jeopardy of being denied access to foreign ports, critical canal transits, and otherwise detained for unseaworthiness.

CONCLUSION

> *We would not be at this critical juncture except for the complexities of the problem and the gridlock of vested interests. Sealift planning that focuses only on hulls and ship numbers ...is shortsighted. No shipbuilding or conversion program, although worthy in itself, addresses the equally important manpower issue. Only an active trading Merchant Marine of adequate size can attract and hold people in maritime careers. Americans must push their leaders to commit to the maritime industry so we do not loose the existing skill base.*
>
> -Steven Hertz
> Citizen

Throughout the 20th century, the U.S. approach to providing strategic sealift has been reactive. Having sufficient numbers and types of ships has been the measure of success. Massive ship building programs were the answer to sealift shortages in World Wars I and II; re-purchasing of U.S. ships sold to foreigners was the answer for the Korean and Vietnam Wars; and, a government organic fleet was the answer for the Gulf War. In particular, the organic fleet has been expanded based on the rigorous quantification of cargo capacity needs in the (post-Gulf War) Mobility Requirements Study[48] and Bottom-Up Review Update.[49] Approximately 10 million square feet of cargo capacity will ultimately be provided by the organic sealift fleet,[50] all aimed at ensuring there is enough surge sealift capacity for the U.S. Armed Forces to fight and win two nearly simultaneous major theater wars.

It has been the case this century that, even on short notice, the mariners needed to man the sealift ships were available. However, as the 21st century approaches, the U.S mariner ranks

have been depleted in proportion to the continuing decline of the numbers of U.S.-flag commercial ships. The MSP and VISA programs have provided some very timely assistance to stem the decline; not to reverse it. They will prove to be nothing more than short-term benefits unless they are included as part of a more comprehensive fix designed to grow an adequate pool of qualified merchant mariners. That pool must be large enough to crew the government organic fleet, while at the same time, providing for the country's national security and economic needs with U.S.-flag commercial ships.

Developing *and implementing* a cohesive strategy to address the nation's sealift needs is not an easy job. The words that capture the right message are already well known as quoted from the Merchant Marine Act of 1936 in an earlier chapter and a from the excerpt of the current National Sealift Policy which introduces this paper. Both of these clearly capture the essence of what strategic sealift *should be.* However, despite acknowledgment in words, the U.S. has failed in its actions to achieve the balanced maritime emphasis necessary to sustain strategic sealift into the 21st century.

The U.S. finds itself facing a crisis in strategic sealift caused ultimately by the demise of the U.S.-flag merchant marine. A clear strategy must be attached to the National Sealift Policy, in contrast to the reactive path that has prevailed this century. The objectives of the strategy must address the underlying issue that only growth of U.S.-flag merchant ships will increase sealift capability while at the same time growing the pool of mariners.

Although the situation has clearly reached extremis, a solution to the mariner shortage problem is not without hope. Even for the short-term, several proposals have been made including: expansion of the MSP/VISA program, thereby increasing U.S.-flag ship numbers and growing the mariner pool; shifting the emphasis of the Naval Reserve (merchant marine) to

support members maintaining civilian mariner qualifications; and, creation of a civilian merchant mariner reserve program, drilling and training to maintain qualifications. A discussion of these proposals is beyond the scope of this report, but is conducted elsewhere.[51,52,53] The bottom line with any of these ideas is that a substantial commitment money must be made. But what other choice is there to ensure that the strategic sealift capacity is available when needed?

The time is now for the U.S. to implement a strategy to ensure the nation's strategic sealift needs are met, even in view of the limited merchant marine. The U.S. Armed Forces are critically dependent on sealift to project force. Currently, the pool of mariners to crew the U.S.-flag and organic sealift ships is perilously small and continues to shrink. Additionally, changes to international and domestic shipping laws will have further negative impacts on the size and usability of the pool in the very near future.

The U.S. has a capable, well-conceived, array of sealift ships to both surge and sustain wartime sealift when the organic fleet and U.S.-flag VISA participants are considered together. The nation cannot afford to have everything ready to fight and win the next war, only to find that it does not have the mariners needed to get the equipment and supplies to the battlefield.

Word Count: 5868

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