



**STRATEGY  
RESEARCH  
PROJECT**

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**MERCHANT MARINE SEAMEN SHORTAGE AND  
ITS IMPACT UPON STRATEGIC SEALIFT**

**BY**

**LIEUTENANT COLONEL EDWARD J. FISHER  
United States Army**

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USAWC STRATEGY RESEARCH PROJECT

**Merchant Marine Seamen Shortage and Its Impact Upon Strategic Sealift**

by

LTC Edward J. Fisher  
United States Army

Colonel Paul Plemmons  
Project Advisor

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

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## ABSTRACT

AUTHOR: LTC Edward J. Fisher

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The current National Security Policy's broad purpose is to ensure that the U.S. maintains the capability to meet sealift requirements in the event of a crises or war. Can the United States win different types of future conflicts using only the existing numbers of merchant seamen?

Definitely no is the answer, mainly due to past conflicts (Persian Gulf War, Kosovo, and in our own Merchant Marine Exercises) The problem also expands to our Maritime shipping laws which hamper our shipping industry and recruitment of Merchant Marine Seamen. This policy must be adjusted to account for not only change here in the state's but also a global change. Numerous laws and policy changes have been attempted but to no avail, you must have the complete backing of Congress to enact this all to important legislation. This study will examine the history, laws and existing merchant fleet in order to find the specific problems and offer adequate solutions. The security of the United States and it's allies depends on a capable and effective merchant marine. Our country's ability to transport the necessary force to conduct large scale theater or theaters of operation is critical for us to defeat the enemy. The merchant marine must be included in this Strategic Triad. Our nation must rally behind the Merchant Marine Seamen in order to address their problems.



TABLE OF CONTENTS

ABSTRACT .....iii

LIST OF TABLES .....vii

MERCHANT MARINE SEAMEN AND THEIR IMPACT UPON STRATEGIC SEALIFT .....1

    INTERMODAL TRANSPORTATION .....4

    FOREIGN POLICY .....5

    DEPARTMENT OF DEFENSE POLICY .....5

    CARGO PREFERENCE LAWS AND THEIR AFFECT ON STRATEGIC SEALIFT  
    INDUSTRY .....10

    THE COSTS OF CARGO PREFERENCE LAWS TO THE FEDERAL GOVERNMENT ....12

    THE EFFECTS OF CARGO PREFERENCE LAWS ON THE U.S. MERCHANT MARINE12

    SOLUTIONS.....15

ENDNOTES .....17

BIBLIOGRAPHY .....21



## LIST OF TABLES

TABLE 1 PORT CAPABILITIES.....	6
TABLE 2 MAJOR U.S. SHIPBUILDING.....	7
TABLE 3 SHORTAGE OF EQUIPMENT.....	8



## MERCHANT MARINE SEAMEN AND THEIR IMPACT UPON STRATEGIC SEALIFT

The U.S. Merchant Marine and the entire Marine Transportation System (MTS) is not only vital to our economy, but to our national defense as well. This system has been vital to the sealift operations of the Department of Defense throughout our history and continues to grow in importance. Our need to maintain domestic shipping and an industrial shipbuilding base for national defense purposes must be a priority. The requirement that U.S. flag vessels be U.S. built, U.S. crewed, and U.S. citizen owned ensures the continuation of a domestic merchant marine and a shipbuilding industry. It also ensures the availability of U.S. vessels and merchant mariners to crew for our Ready Reserve Force and Department of Defense strategic sealift ships in times of national emergency. It is the goal of this system to "be the world's most technologically advanced, safe, secure, efficient, effective, accessible, globally competitive, dynamic and environmentally responsible system for moving goods and people."<sup>1</sup> In reality, however, this has not been the result. The main problem with our current system is one of logistics; our marine transportation system is in decline and suffering from a shortage of vessels, and most importantly, qualified, experienced seamen. Today, despite some improvements in recent years, this system has become the Achilles' Heel of our national defense. The United States must make it a priority to rectify this situation before the negative effects of this trend are felt in the context of a national emergency.<sup>2</sup>

Throughout American history, the U.S. flag fleet-ships built in America, owned by Americans, and crewed by American seafarers-was justly renowned as the nation's vital fourth arm of national defense. Possessing a strong marine transportation system is integral to our national security.<sup>3</sup> Though the WWII merchant marines have not received the recognition they deserved, even though they played a tremendous role in winning the Second World War.<sup>4</sup> This was the prime source of wholesale resupply to the theaters of war. Many ships were lost and many men and women sacrificed their lives. This system was also used in the Korean and Vietnam Wars, using left over ships from WWII. No real sealift problems were experienced during the Korean War (1950-1953) other than the need to re-mobilize forces so soon after the post-World War II stand-down. During this conflict, some 31.5 million tons of war material were shipped from U. S. ports to Far East destinations. Of this amount, 95 percent were ocean shipments. Eighty percent of the shipments were carried aboard privately owned U.S.-flag vessels, with the remaining 15 percent assigned to Military Sea Transportation ships. Significantly, all of the vessels involved in this massive, sustained logistical sealift were crewed by civilian American seafarers. About 700 ships were activated from the National Defense

Reserve Fleet for services to the Far East, as well as to meet emergency shipments of coal to Europe during these first years of the Cold War. From 1953 on, however, the downward spiral of the U.S. flag merchant marine continued. By the early 1960s, the U.S. Merchant Marine confronted the twin problems of extensive block obsolescence of the World War II Victory and Liberty-class merchant vessels and lackluster performance in the carriage of U.S. ocean borne foreign commerce -- from more than 20 percent to just 5.6 percent in 1969 -- in the face of increasingly fierce competition from abroad.<sup>5</sup>

The Vietnam War (1965-1973) resulted in full demand for the active merchant marine to transport 65 percent of the dry cargo commodities to support our war efforts in Vietnam. The remainder of the dry cargo was carried aboard Government-owned vessels and required mobilizing 172 World War II era Victory ships from the National Defense Reserve Fleet crewed by some 15,000 U.S. merchant mariners. However, this proved to be no more than a brief interlude in the merchant marine's contraction since the 1860s. Although the vast majority of military shipping movements experienced no problems, several foreign-flag ships refused to carry U.S. cargoes to the war zone. And even during the 1973 Yom Kippur War, U.S. owned, foreign-flag ships did not respond to the need to carry cargo to Israel. In fact, the government of Liberia issued a decree specifically prohibiting its flag fleet from participating in the resupply of Israel. These instances raised doubts - - How reliable would foreign-flag and the so-called "effective U.S.-control" ships be in the future?

During the next quarter-century, an intermodal "revolution" saw vertical and horizontal integration of rail, truck, and water-borne transportation "modes" and many other dramatic technological innovations generated by the U.S. maritime industry. American carriers pioneered the design, construction, and operation of specialized ships, containerization, double-stack rail cars, specialized containers, electronic equipment identification, satellite tracking and in-transit visibility, and highly integrated, just-in-time, door-to-door services that significantly reduced inventory and warehousing costs for American industry.

Although operational efficiencies were dramatically enhanced and despite the further infusion of shipbuilding funds (as a result of the Merchant Marine Act of 1970), by 1990 American-flag ships carried just four percent of the country's seaborne commercial tonnage. U.S. ship owners had continued to "flag-out" their ships to take advantage of less onerous tax and regulatory systems and lower crew costs offered by foreign registry. On the eve of Operations Desert Shield/Desert Storm, which validated the need for massive strategic sealift capabilities in the post-Cold War era, the active, privately-owned, oceangoing U.S. flag merchant fleet comprised 377 ships of 17.8 million tons capacity.<sup>6</sup>

In addition to the nagging flags-of-convenience issue, throughout the late 1970's and early 1980's Defense Department planners worried about the remaining U.S. flag fleet's ability to meet its national security missions. Increasingly, the merchant marine comprised of highly efficient container ships, barge carriers, and LASH (Lighter Aboard Ship) vessels that had questionable "military utility." And while the new Roll-On/Roll-Off (RO/RO) ships were seen as having the potential to carry any sort of military vehicle, increasingly scarce were the older, less efficient, but self-sustaining breakbulk ships that could meet the varied transportation needs of the military: carrying tanks, armored fighting vehicles, artillery, helicopters, trucks, ammunition, and all of the stuff -- "beans, bullets, and black oil" -- needed for war.

Thus, U.S. Navy and Maritime Administration programs during the 1980's saw \$7.4 billion "invested" to upgrade the government's rapid-response sealift forces and to ensure that whatever U.S. flag shipping was available would be capable of handling military cargoes. The goal was to have three squadrons of 13 Maritime Prepositioning Ships for Marine Corps equipment; 11 Afloat Prepositioning Ships for Air Force, Army, and some Navy needs; eight (former Sea-Land) Fast Sealift Ships; as many as 140 ships in a Ready Reserve Force; hospital and other specialized ships; cargo discharge systems; and a variety of sealift "enhancement" programs for the active merchant fleet. The intent was to ensure the speedy movement of U.S. military equipment, munitions, provisions, and fuels to support rapid-deployment forces and sustain combat in forward areas where U.S. or allied bases were not available. In essence, Washington had all but given up on relying upon the operating merchant marine as the nation's "fourth arm of defense."<sup>7</sup>

Two world wars and numerous crises during the Cold War confirmed the critical role of the U.S. merchant marine in military strategies. From World War II on, some 95 percent of all-military equipment and material sent to crisis and combat theaters was carried by sea. The nation's response to Iraq's invasion of Kuwait in August 1990 -- the first post-Cold War crisis-conflict -- dramatically confirmed the need for the merchant marine to satisfy defense requirements, and underscored the compelling demand for dramatic solutions to ensure these requirements will be met in the future.

Probably the greatest show of the need and capability of our marine transportation system and sealift power was demonstrated in Desert Storm. Operation Desert Shield -- from August 7, 1990 through January 15, 1991 -- was the fastest movement and build-up of combat power across greater distances than at any other time in history. Operation Desert Storm -- 15 January to 10 March 1991 -- sustained the more than 540,000 U.S. forces in the theater until Iraq's will was broken. General H. Norman Schwarzkopf, Commander-in-Chief of the U.S. Central

Command, noted "It was an absolutely gigantic accomplishment, and I can't give credit enough to the logisticians and transporters who were able to pull this off."

"Much of the unrecognized credit for the success of Operation Desert Shield must be given to the Department of Transportation's Maritime Administration, the Navy's Military Sealift Command, and the commercial merchant mariners who manned many of the ships."<sup>8</sup> During the Gulf war, these agencies conducted the largest and fastest sealift in history moving nearly 10 million tons 85% of the total cargo in support of the war.<sup>9</sup> The government's Fast Sealift Ships -- operated by private U.S. companies and manned by American merchant-marine crews -- did the work of 116 World War II breakbulk Liberty vessels and at speeds that averaged greater than 27 knots. The first Fast Sealift Ship to arrive in theater, the USNS CAPELLA, delivered nearly 15,500 tons of cargo on its initial run, equal to 300 C-5 Galaxy strategic airlift aircraft flights over the same distance. Seventy nine Ready Reserve Fleet (RRF) vessels manned by more than 3,000 volunteer U.S. merchant mariners carried 21 percent of all dry cargo, one-third of all military unit equipment, and, despite some frustrating difficulties in the initial mobilization, achieved a 93.5 percent reliability level, exceeding Defense Department expectations. Nearly 80 percent of the RRF ships were late in breaking-out, with ships broken out later in the crisis averaging 10 days longer to get on line than those in the first three months. Significantly, the 21 previously activated ships averaged 8.2 days to activate while the 53 ships not previously activated averaged 18 days. More than half of the RRF ships were steamships over 20 years old, which presented problems with regard to their material condition, especially propulsion piping and boilers. Of the 79 Ready Reserve Force ships activated, only 21 had ever been broken-out and tested, and some had never been operated in the 14 years before the "Storm." Based upon limited pre-war planning, the government estimated that it would take less than a million dollars per ship for a real-world breakout; in reality the average cost was about \$1.8 million.

It must be capable of supporting our objectives since the projection of U.S. military force and their sustainment depend almost entirely on sealift deployment.<sup>10</sup> In peacetime, the military moves 90 percent of its equipment and supplies by sealift. During wartime this increases to over 95 percent.<sup>11</sup> Our military depends on the marine transportation system to be their lifeline for equipment and supplies.

## **INTERMODAL TRANSPORTATION**

Over 90 percent of all equipment and supplies for Desert Storm were shipped via our inland and coastal waterways from U.S. strategic ports. Our commercial merchant marine is

vital to this since commercial transportation assets decrease the cost of meeting military transportation requirements.

## **FOREIGN POLICY**

The changes that have occurred in our foreign policy objectives since the end of the Cold War have greatly increased these needs. With the collapse of the USSR, our foreign security concerns changed from focusing on one part of the world (Europe), to situations and rogue nations all across the globe. Because of this, the forward presence of troops and equipment no longer make strategic sense. Therefore, many overseas bases closed and our military concentrated on domestic bases. As a result, the importance of quickly moving people and supplies anywhere at any time increased along with longer Lines of Communication (LOC). "The result of these factors is that strategic transportation and logistics demands and related movement requirements facing America's armed forces are at an all time high. Today, more than ever, the U.S. military must rely on intermodal transportation systems located in the United States..."<sup>12</sup> As more overseas bases are closed, the military's demand on our domestic and commercial mobilization plans and operations increases. "Clearly, if the United States is to effectively and successfully project military power around the world, the nation must possess the most advanced and integrated intermodal transportation and logistics system. Failure to keep this system on the cutting-edge of technology and business efficiency, and ahead of demand requirements inherently threatens the strategic stability of the United States and its allies worldwide."<sup>13</sup> There have also been many closures of military-owned and operated ports such as Bayonne. You cannot place a cost upon the ability to deploy from a strategically located port with multiple deployment capabilities. This has put an increasing reliance on U.S. commercial ports for the deployment of military forces and crisis response capabilities. "The United States fulfills its national security or global security missions through a safe and effective marine transportation system. Since the national military strategy has shifted from forward presence to force projection, security planners are placing increasing demands on marine transportation, particularly at strategic ports."<sup>14</sup> This infrastructure and services must be able to ensure rapid, secure, and effective military mobilization.

## **DEPARTMENT OF DEFENSE POLICY**

The United States remains committed to a policy of engagement abroad to promote peace, and safeguard democracy.<sup>15</sup> Because the overwhelming majority of material to sustain overseas operations needs to move by sea, the logistical backbone for the all-season rapid loading and transport of American forces and material relies ultimately upon our marine

transportation system. To meet these ends, the Department of Defense spends over \$2 billion each year on commercial freight services. Our commercial shipyards provide the Department of Defense access to critical infrastructure that is needed to build new military and commercial sealift vessels, as well as maintain and repair the U.S. fleet of vessels needed to support mobilization efforts. The value of these systems is often understated.<sup>16</sup> It is up to Department of Defense military planners to determine the level of commercial sealift required to meet military deployment, and to track commercial market forces. "Changes resulting from these forces could compromise the Nation's ability to respond to national security interests."<sup>17</sup>

The current state of our nation's marine transportation system is not one, which could fulfill these needs in time of national emergency.<sup>18</sup> The assets of this system are owned, staffed, and managed by many different segments. The commercial sector is owned and operated by many businesses, some registered in the U.S., some in foreign countries. This sector of the marine transportation system has been working with the Department of Transportation, specifically the Maritime Administration to provide for the use of these assets and infrastructure for national security; this relationship will be discussed in more detail later. The Maritime Administration has also put together the Ready Reserve Force that can be utilized by the Department of Defense and currently has about 90 vessels. Because of the importance of the marine transportation system, the Department of Defense established a military contingency under the U.S. Navy, but responsibility for this is increasingly being assumed by the Military Sealift Command (MSC). The MSC is one of three component commands, together with the US Army's Military Traffic Management Command and the US Air

U.S Ports Handling More Than 10 Million Tons in 1997				
Coastal Region	Number of Terminals	Percent of Total	Number of Berths	Percent of Total
North Atlantic	421	22.0	761	24.1
South Atlantic	197	10.3	349	11.0
Gulf	484	25.3	786	24.9
South Pacific	223	11.6	414	13.1
North Pacific	249	13.0	365	11.6
Great Lakes	340	17.8	483	15.3
<b>Total</b>	<b>1914</b>	<b>100.0</b>	<b>3158</b>	<b>100.0</b>

Source: U.S. DOT, Maritime Administration

TABLE 1 PORT CAPABILITIES

Force's Air Mobility Command reporting to the joint-service US Transportation Command. The MSC operates more that 130 ships, crewed by civilians. When a Sealift Program is needed, the

MSC first seeks to charter ships. If suitable US-flagged commercial vessels are unavailable, it can activate the ready Reserve Force vessels. Along with the use of commercial vessels, in support of military assets, the Department of Defense also uses commercial ports and supporting infrastructure such as shipyards, dry-docks, etc. The ports with the greatest capacity are the ones deemed as strategic ports and a list of shipbuilding and repair bases with would be used by the military in support of a sealift operation can be found in Table 2.

Major U.S. Shipbuilding and Repair Base as of October 1998						
	East Coast	Gulf Coast	West Coast	Great Lakes	Non-Contiguous <sup>s</sup>	Total by Type
Shipbuilding	5	8	3	3	0	19
Repair w/ Dry-dock	13	8	7	2	3	33
Topside Repair	10	19	8	2	1	40
Total (By Coast)	28	35	18	7	4	92
*Alaska, Hawaii, Puerto Rico, and Virgin Islands						
Source: U.S. DOT, Maritime administration, Office of Ship Construction						

TABLE 2 MAJOR U.S. SHIPBUILDING

As effectively as the Maritime Administration has structured these assets to work together in times of national defense, our system is still not large enough to cover the demand of our military in many scenarios. Even though many deem the sealift operation during Desert Storm as a success, a closer look would reveal the many shortcomings of our marine transportation system. The reason that the sealift appeared successful was because we had access to the modern Saudi ports and Saddam Hussein failed to threaten the ports and strategic logistical operations; he allowed us seven months to build up our forces in the region. The sealift operation took over 200 days to complete, 75 days for such an operation is optimal.<sup>19</sup> In the future, in less perfect circumstances, this sealift will not work if we have to deal with limited port access. "Although the United States realized many successes, strategic mobility planners must temper their euphoric reactions with reality. Without augmentation from international maritime assets, the United States deployment of forces would have been extended. Additionally, there are few areas in the world that can receive military deployments with the extensive infrastructure in place that the United States realized in Saudi Arabia."<sup>20</sup> The two main causes are; shortage of equipment and infrastructure and shortage of qualified seamen. The later is what the

remainder of this paper will concentrate on, though a table documenting the growth in marine traffic as compared to the growth in the necessary vessels is documented in Table 3.

World trade Growth Compared to Fleet Growth 1998-2002		
Vessel/Trade	Trade %	Fleet %
Dry Bulk	3-4	1-2
Tanker	2-3	1-2
Product	4-5	3-4
Crude	1-2	0-1
General Cargo	6-7	2-3
Container	8-10	8-10
Total	3-4	1-2

Source: Adapted from McGraw-Hill Companies and the U.S. Department of Commerce, 1999

TABLE 3 SHORTAGE OF EQUIPMENT

The shortage of qualified mariners is arguably the most serious problem facing the marine transportation system. As illustrated above the shortage of vessels is an issue too, but new ships can be built faster than we can build a pool of experienced seamen. Even with the growth of technology, people remain the most important element in making the marine transportation system run smoothly. "The need for a qualified work force will be crucial to meeting the emerging requirements of the private, public, and military users of the MTS. Some MTS stakeholders indicate that a critical shortage of such qualified labor currently exists on a worldwide level."<sup>21</sup> There are reasons for this shortage. Worldwide, the shipping industry has not been able to recruit large pools of workers since new generations are less willing to put up with the hard life of a mariner when the worldwide economy (at least in Western nations), has been fairly strong for the last few decades.<sup>22</sup> In the United States, the shipping industry has been in great decline, mainly due to companies switching their headquarters to foreign countries due to cheaper insurance and registration fees, therefore having a direct impact on labor assets here.

Like the rest of world, the U.S. also has the same training problems "there are inadequate programs to recruit, retain, and educate an expanded MTS workforce, including seafarers, longshoremen, shipyard workers, intermodal operators, and military personnel."<sup>23</sup> Recruiting is the first step to maintaining a strong maritime work force. Both the commercial and military sectors are finding it very difficult to find young men and women interested in pursuing a maritime career. On the military side, there has been an overall decline in those interested in joining any branch of the U.S. armed forces. No matter what the reason for the shortage of qualified maritime workers, the situation has a direct effect on our national security, especially

for strategic sealift operations. The reliance of our military on the marine transportation system reinforces the need to attract and retain qualified personnel, in both the military and commercial sectors. These work forces of the ports, waterways, intermodal connectors, ship construction and repair facilities, and ship crews and operators are necessary to support deployment capabilities. For the reasons discussed earlier, the pool of maritime labor is shrinking and could prevent the United States military from effectively mobilizing and projecting its forces and equipment at a time of national emergency. If this ability is hampered, our national security is at risk.

Maybe the Marines have the key because they are the only service to have remained on target in meeting their recruitment goals. "The resulting sacrifices and demands placed on the military family are causing people to question career decisions and maybe push them over to the civilian side."<sup>24</sup> Together, the U.S. armed forces must recruit 200,000 new people each year to sustain their forces. Until recently, they have been finding this impossible during the lowest unemployment in 30 years and an increase in those attending college. In recent surveys, only 25% of youth consider a job in the military, down from over 1/3.

The commercial sector is having similar problems. The Vice President of American Maritime Officers explained that, "unless we take corrective action soon, it will only reach a point from which we will not be able to recover. This has major national security implications because the commercial maritime industry provides the extra mariners needed to activate and crew government-owned sealift ships for military contingency operations."<sup>25</sup> Again, because of strong economy, less young people are interested in pursuing the rough life of a mariner. Commercial mariners can spend anywhere over four months at sea, followed by a couple of months ashore. This short time ashore is taken up with schooling and training. It is also this percentage of seamen that are ashore who would be expected to aid in military sealift operations. Few families want to be subjected to this lifestyle.<sup>26</sup> Young people are less prepared to spend long times away at sea than previous generations. Above all, in the U.S. the major factor has been a great economy.<sup>27</sup> Those who are looking for a job, or looking to change jobs, are in short supply. This is causing fierce competition to acquire the best workers. Additionally, the industry has traditionally recruited for unlicensed labor from the underprivileged population, however, in recent years it has become difficult to find those in this group that can pass the required drug tests.<sup>28</sup>

The problem of labor shortages extends beyond the U.S., particularly in Europe. European shipping experts note that the decline of the last decade in the available number of mariners can also be related to fewer members to recruit from in post-Baby Boomer era. There

are also geographic supply issues. "The number of seafarers from European countries has sharply declined, while seafarers from the Far East have increased."<sup>29</sup> Mariners from the Far East will become a major source of worldwide supply for the global shipping industry. This has critical national security repercussions for the United States military that will be discussed in further detail later.

There has also been a retention problem in the industry. The most experienced mariners, worldwide, are clustered among the older age groups. Over the last decade, and in the coming years, the best segment of the maritime industry is retiring.<sup>30</sup> This is devastating for the shipping industry, as well as for the military. "Like in the military, the maritime industry cannot go into the open market and hire middle grade management or supervisory personnel. We must gain an accurate account status of our mariners and over time go out on our own in order to produce a second mate, able-bodied seaman. Once we experience a shortage in attracting or retaining personnel we, like the military, must live with this shortfall for at least five years."<sup>31</sup> Again the human factor in our marine transportation system must remain a crucial linchpin. Technological changes in the industry have made it even more important to develop new and better-trained managers and technical operators. We depend on the sea for our strategic security and we must maintain a properly educated and trained workforce of merchant marine officers and seafarers, especially since this shortage crisis extends globally, particularly among our allies.

## **CARGO PREFERENCE LAWS AND THEIR AFFECT ON STRATEGIC SEALIFT INDUSTRY**

Another reason for the decline of the maritime workforce in the United States is the decline of the American shipping industry. There are currently significantly fewer U.S. -flag ships as companies are finding it harder to remain competitive under U.S. maritime laws. Since the first cargo preference law--the Cargo Preference Act of 1904 (P.L. 198)--was passed, the Congress has repeatedly reaffirmed its intent to promote a strong U.S. Merchant marine industry and has passed cargo preference legislation in response to general downturns in the merchant marine industry. In general, the purposes of the laws are to ensure a U.S. merchant fleet sufficient to provide a naval auxiliary in time of war or national emergency and to participate substantially in the carriage of foreign and domestic commerce.

To help the U.S. merchant marine industry compete, the Congress has enacted a number of laws supporting the industry, including cargo preference laws, which require that most government owned or financed cargo that is shipped internationally be carried aboard U.S. flag vessels. This cargo is known as preference cargo. Cargo preference laws guarantee a

minimum amount of business for the U.S. merchant fleet; this additional business, in turn, promotes the remainder of the maritime industry because U.S.-flag vessels are required by law to be crewed by U.S. mariners, are generally required to be built in U.S. shipyards, and are encouraged to be maintained and repaired in U.S. shipyards. However, because U.S. flag vessels often charge higher rates to transport cargo than foreign-flag vessels, cargo preference laws increase the government's transportation costs. Cargo preference laws have long been controversial both from an economic and a political point of view. The proponents of cargo preference laws point to this nation's economic dependence on waterborne transportation for international trade and the role that merchant vessels play in transporting military supplies during wartime. They maintain that a strong merchant marine industry is vital to the nation's economic and military security and that cargo preference laws help to counter the subsidies that many foreign countries provide to their merchant fleets.

The primary cargo preference laws in effect today are (1) the Cargo Preference Act of 1904, which generally requires that only U.S. flag vessels be used to transport supplies by sea for the U.S. Armed Forces and (2) the Merchant Marine Act of 1936 (P.L. 835), as amended by the Cargo Preference Act of 1954 (P.L. 664), which generally requires that at least 50 percent of any U.S. government-controlled cargo shipped by sea be carried on privately owned U.S. flag vessels. In 1985, the Merchant Marine Act of 1936 was amended to require that 75 percent of certain foreign food aid be shipped on privately owned U.S. flag vessels. The Maritime Administration (MARAD) reports that the privately owned U.S. ocean-going commercial fleet is the ninth largest in the world by deadweight tonnage (Deadweight tonnage is the total lifting capacity of a ship, expressed in long tons; a long ton equals 2,240 lbs. Deadweight tonnage is the difference between the displacement of the empty vessel and the displacement of the vessel fully loaded), constituting about 3 percent of the world fleet's tonnage. The U.S. fleet consists of about 371 U.S. flag merchant vessels of 1,000 gross tons and over. MARAD reported that of the 371 vessels, 23 were inactive, 49 were chartered by the Department of Defense (DOD), 134 were engaged in domestic trade, and 165 were engaged in international trade. The 165 vessels in international trade are the vessels that carry preference cargo. Cargo preference laws increased federal agencies' transportation costs by an estimated \$578 million per year for fiscal years 1989 through 1993 because U.S.-flag vessels generally charge more to carry cargo than their foreign-flag vessel counterparts. The average is about \$710 million per year when the costs associated with the Persian Gulf War are included. Four federal agencies--DOD, the Department of Agriculture (USDA), the Agency for International Development (AID), and the Department of Energy (DOE)--are responsible for more than 99 percent of preference cargo, by

tonnage. The effect of cargo preference laws on the U.S. merchant marine industry is mixed. On the one hand, the share of international oceanborne cargo carried by U.S.-flag vessels has declined despite cargo preference laws because most oceanborne international cargo is not subject to cargo preference laws. In 1992, for example, about 96 percent of oceanborne cargo was carried aboard foreign-flag vessels. On the other hand, these laws appear to have a substantial impact on the U.S. merchant marine industry by providing incentive for vessels to remain in the U.S. fleet. GAO estimates that without preference cargo, the equivalent of up to two-thirds of the 165 U.S. flag vessels engaged in international trade, by tonnage, would leave the fleet. Most of the vessels that would leave would either reflag to another country to save costs or cease to operate if they are not competitive. This would directly affect about 6,000 U.S. shipboard jobs.

#### **THE COSTS OF CARGO PREFERENCE LAWS TO THE FEDERAL GOVERNMENT**

Transporting cargo on U.S. flag vessels is more expensive than doing so on foreign-flag vessels largely because the former are required to be crewed by U.S. mariners, who generally receive higher wages and other benefits and have higher manning-level requirements than comparable foreign-flag vessels. In addition, U.S. flag vessels are generally required to be built and encouraged to be maintained and repaired in U.S. shipyards, which generally charge more than foreign shipyards. These costs are passed on to federal agencies when they use U.S. flag vessels to ship international cargo. For example, for fiscal years 1989-93, DOD estimates that the additional transportation costs of the preference cargo it shipped on U.S. flag vessels averaged about \$350 million per year. Most of DOD's preference cargo supports troops stationed overseas. The average is about \$482 million per year when the costs associated with the Persian Gulf War are included. Other agencies that ship large amounts of preference cargo include USDA, AID and DOE. For fiscal years 1989-93, USDA and AID report that the additional transportation costs of the preference cargo they shipped on U.S. flag vessels averaged about \$200 million and \$23 million per year, respectively. Most of their preference cargo is foreign aid. GAO estimates, for fiscal years 1989-93, that DOE paid, on average, less than \$2 million per year in additional transportation costs to ship oil for the Strategic Petroleum Reserve on U.S. flag vessels.

#### **THE EFFECTS OF CARGO PREFERENCE LAWS ON THE U.S. MERCHANT MARINE**

Since World War II, there has been a dramatic increase in the amount of international oceanborne cargo. Most of the increase has been in privately owned cargo that is not subject to cargo preference laws and is, therefore, often shipped on less expensive foreign-flag

vessels. As a result, the percentage of ocean-borne international cargo carried on foreign-flag vessels increased from 42 percent following World War II to 96 percent in 1992. While U.S. flag vessels carry only about 4 percent of all international cargo, the percentage of cargo carried by U.S. flag vessels that is preference cargo is relatively large--33 percent in 1992. Thus, although cargo preference laws have not significantly affected the U.S. share of ocean-borne cargo, they have a significant impact on the U.S. merchant marine industry. GAO measured this impact by estimating that, in the absence of preference cargo, the equivalent of between 61 and 68 percent, by tonnage, of the 165 U.S.-flag vessels engaged in international trade would leave the U.S. fleet. Many of the vessels could be competitive in international trade and would leave the U.S. fleet in order to lower their costs. Others would be unable to compete and would cease operating, either being scrapped or laid up. GAO confirmed its results about which vessels would leave the U.S. fleet via a survey of 18 vessel operators that controlled 112 of the 165 vessels engaged in international trade. Approximately 6,000 mariners are employed aboard the vessels that GAO estimates would leave the U.S. fleet in the absence of preference cargo. This represents about 71 percent of the 8,500 shipboard jobs that MARAD reported as being supported by the 165 vessels engaged in international trade. GAO believes that cargo preference laws do not have a significant impact on the number of new ships built in U.S. shipyards because U.S. shipyards delivered only one ocean-going merchant vessel during fiscal years 1988-93. However, the amount of maintenance and repair work done at U.S. shipyards would likely decrease in the absence of preference cargo. U.S.-flag vessels are not competitive in international trade--cargo carried between U.S. and foreign ports or between foreign ports--because they generally have higher operating and capital costs than foreign-flag vessels. (Foreign-flag vessels are restricted from carrying cargo between domestic ports.) According to Maritime Administration (MARAD) officials, crews costs account for the largest portion of the difference between the operating costs of U.S.- and foreign-flag vessels. U.S. crews receive higher wages and other benefits, and U.S.-flag vessels have higher manning level requirements than comparable foreign-flag vessels. Also, because U.S. shipyards generally charge more to build and maintain vessels than foreign shipyards, U.S.-flag vessels have higher capital and maintenance costs.<sup>32</sup>

"This contraction has seen the U.S. market share of commercial shipbuilding fall from number one in the world to only 1 percent of the world market share. The pool of skilled shipyard workers fell from 1.2 million to 100,000; the build rate for naval ships fell to its lowest level since the Great Depression. As a result only seven shipyards currently build commercial

or naval ships of 400 feet of length or greater.”<sup>33</sup> Increased globalization and consolidation of transportation providers have also left fewer U.S. –flag commercial carriers.

One direct effect of this shortage would be decreased productivity of our ports and mobilization assets. On the commercial side, many ports are already feeling this. At the Port of Tacoma, for example, the lack of skilled longshore workers is stressing the capacity of the port and the quality and speed in which they handle ship traffic.<sup>34</sup> They are currently processing many fewer ships per day than the nearby port of Seattle. If a similar shortage was suffered during a military conflict, the length of time it would take to get our troops and equipment loaded for departure would be extended. This means taking longer to get our military to the region of conflict.

Such a shortage was significantly felt during operations in Kosovo. Granted, there were other logistical problems in addition to the poor marine transportation system. However, this deficiency led to ammunition shortages and long delays before our forces could get resupplied.<sup>35</sup> Both contracting and travel time directly attributed to the delays experienced by our forces in Kosovo.

Taking into account this shortage, could also have important implications on our military strategy in relation to strategic sealifts. It will force the Department of Defense to make an important decision between two strategies. “Decreased flexibility will necessitate more time deployed for amphibious ships or dictate less worldwide coverage or forward deployed logistics bases. These are difficult choices. More time at sea will take its toll on both the ships and its crew, which could negatively impact retention and recruiting efforts as well as maintenance. Lessening coverage, thereby increasing response time, would be a risk that national policy makers would have a tough time accepting.”<sup>36</sup>

Another important effect this shortage will cause is a higher reliance on foreign-flagged ships. Our military has always taken advantage of the large maritime industries of other nations, especially our close European friends, to supplement our own marine transportation system. However, many of those we traditionally relied on are also experiencing labor shortages. It has been the Far East or third world regions that have been enjoying a surplus of labor in their maritime industries. These nations, with a few exceptions, do not hold tight allegiances to us. They would want to protect access to our markets, however, are less likely to risk heavy losses in order to support our foreign policy. There were many reports during the Gulf War that foreign-flagged ships aided in our sealift operations, refused to pull into some Gulf ports because they felt these areas were not safe.<sup>37</sup> This situation has worsened even more since then. “There are not as many militarily useful U.S.-flag ships available now as there were

just nine years ago; there also are not as many American seafarers on hand to man those ships, and reliance on foreign-flag ships and Third World crews would be much more risky than in 1990.”<sup>38</sup> The majority of merchant ships are currently being crewed by Chinese or Filipinos and on the third flag registry are also Muslims. This, of course, has huge national security implications, especially today. How many of these ships will volunteer to help with an American sealift, should one be needed, in our current war against terrorism? We have been able to gain the support of a few Muslim nations, however, this support has been conditional. Many of these nations have been open to criticize our current policy and have been restrictive in their offers of help. Many, like Saudi Arabia, have been direct in making it known that their support would decrease should we choose to mount a campaign against Iraq. This could prove to be the most important direct effect of the shortage of American maritime labor on strategic sealifts in the months or years to come.

## **SOLUTIONS**

The Department of Defense has recognized the huge importance of maintaining a qualified maritime labor supply and has tried to come up with a number of solutions to our current situation. The most important of these initiatives has been the Voluntary Intermodal Sealift Agreement (VISA). This is a joint initiative that was designed to improve our sealift readiness capabilities. It made U.S.-flag commercial intermodal, dry cargo capacity available to meet the contingency deployment requirements of the Department of Defense at the push of a button. In exchange for subsidies, U.S. companies commit 100% of their fleet to the military for times of national emergency. This includes not only their vessels, but crews and other infrastructure. “The true benefit of VISA lies in the fact that it utilizes the existing civilian commercial fleet’s multi-billion dollar capital base – including ships, ship capacity, containers, established management systems and experienced manpower – while minimizing disruption to commercial operations.”<sup>39</sup> As of 1999, 35 companies participated in this program. This program is an excellent start to improving our sealift capabilities, however, it must be just a start. We could take control of the entire commercial maritime fleet of every shipping company in the nation and it would do us no good if we did not have the qualified seamen to crew the vessels, ports, and other infrastructure. The Department of Defense must make it a priority to reverse the decline in the American shipping industry as well as to recruit and retain a large pool of maritime labor. We are overlooking the largest pool of qualified mariners in the retired Coast Guard and Naval sailors. A well-publicized recruitment campaign, in both the commercial arena as well as in the military, is called for. Additionally, “To further hone the skills of our Naval and

Coast Guard personnel, training, drilling and practice are essential on as large a scale as possible."<sup>40</sup>

There are many problems in our current marine transportation system that the Maritime Administration must address. Although the Maritime Administration has the lead role DOD must be prepared to assume a strong supporting role. However the factor that has the most significant direct effect of our strategic sealift operations is the shortage of qualified manpower. "As the U.S. relies more on commercial transportation activities to support national security objectives during contingencies, there is vital need to attract and retain a qualified MTS personnel work force. This work force is needed to support all levels of U.S. military mobilization requirements including ship crews, shipyard support for government surge activations, and cargo loading personnel."<sup>41</sup> Without our own supply of maritime labor, our sealift capabilities are strained and our national security could be placed at risk.

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## ENDNOTES

<sup>1</sup> Maritime Transportation System(MTS), "An Assessment of the marine Transportation System," September 1999, available from <<http://www.marad.dot.gov>>; Internet accessed on 9 December 2001.

<sup>2</sup> Curt Zargan "RSO&I briefing", briefing slides with scripted comments, J-4 Joint Staff, Pentagon, Washington, D.C., 8 February, 2002.

<sup>3</sup> Maritime Administration Annual Report 2001. Available from<<http://mard.dot.gov/chptoc1.htm>>. Internet accessed on 14 January 2002.

<sup>4</sup> Benjamin W. Larabee, Merchant Mariners" America and the Sea (Connecticut : Mystic Seaport Museum, 1998), 43.

<sup>5</sup> "The Role of the Merchant Mariner," 13 September 2001; available from<[http://www.trans-inst.org/national\\_def\\_role.html](http://www.trans-inst.org/national_def_role.html)>; Internet; accessed 30 September 2001.

<sup>6</sup> Ibid., 8.

<sup>7</sup> Ibid., 9.

<sup>8</sup> Robert W. Kesteloot, "Strategic Sealift Faces it's Third Challenge," Seapower, (May 1997):2.

<sup>9</sup> John H. Cunningham, The American Merchant Marine During The Administrations of Truman and Eisenhower (Florida, FSU,1982), 39.

<sup>10</sup> Congressional Budget Office, Moving U.S. Forces: Option for Strategic-Mobility (Washington, D.C.: U.S. Congressional Budget Office, February 1997), 2.

<sup>11</sup> Ibid. p.7.

<sup>12</sup> Christopher J. McMahon, "The issues and challenges facing America's maritime and intermodal transportation system in the early 21st century," Logistics Spectrum, (January 1, 2001): 2.

<sup>13</sup> Ibid. p. 2.

<sup>14</sup> MTS, 3.

<sup>15</sup> National Security Sealift Policy, National Security Council, Washington, D.C. October 1999, p. 1.

<sup>16</sup> MTS, 42.

<sup>17</sup> MTS, 43.

<sup>18</sup> "State of Marine Transportation: U.S. National Interest". Defense Transportation Journal (December 2000): 49.

<sup>19</sup> Department of Defense Conduct of the Persian Gulf War: Final report to Congress, (Washington, D.C., Department of Defense, September 1991), 34-36.

<sup>20</sup> Robert C. Dickerson, What is the Right Strategic Sealift Mix to Deploy?, Industry Studies (The Industrial College of the Armed Forces, National Defense University, May, 1993) 17.

<sup>21</sup> MTS, 55.

<sup>22</sup> McMahan, The issues and challenges facing America's maritime and intermodal transportation system in the early 21st century, 3.

<sup>23</sup> MTS, 55.

<sup>24</sup> Roger Kallock, John Regni, Andrew Fogarty, and Gary Hartter, "Meeting Future Manpower Needs," Defense Transportation Journal , (December 1999): 38.

<sup>25</sup> Ibid. p. 7.

<sup>26</sup> Ibid. p. 8.

<sup>27</sup> Ibid. p. 9.

<sup>28</sup> Ibid. p. 11.

<sup>29</sup> Ibid, p. 8.

<sup>30</sup> James M. Kendra, Looking Out The Window (Rutgers, New Jersey, 2000), 73; Risk, Work, and Technological Change in United States Merchant Shipping, (Rutgers The State University of New Jersey, 2000), 65.

<sup>31</sup> Kallock, Meeting Future Manpower Needs, 8.

<sup>32</sup> Role of The Maritime Industry in the United States, Fact Sheet, August 18, 1999. 1-5. ; available from <[http://www.state.gov/www/issues/economic/tra/ts\\_990818\\_maritime.html](http://www.state.gov/www/issues/economic/tra/ts_990818_maritime.html)>. Internet; accessed 30 September 2001.

<sup>33</sup> MTS, 56.

<sup>34</sup> Kendra, Looking Out The Window, 11.

<sup>35</sup> Jack M. Kennedy, "The Logistics factor," Sea Power, (May 1999) 1.

<sup>36</sup> T.E. O'Brien, "From the Sea - To Where?" Sea Power, (June 2000) 17.

<sup>37</sup> Clinton H. Whitehursts Jr., "Defining America's Sealift Capability: U.S. or Foreign Flag," The Strom Thurmond Institute, May 2001, 32.

<sup>38</sup> Kennedy, The Logistics factor, 1.

<sup>39</sup> Department of Transportation, Statement on Maritime Administration (Washington D.C. MARAD, March 1999), 12.

<sup>40</sup> "Shortages in Naval Service," Irish Times, (May 1999) 1.

<sup>41</sup> MTS, 100.



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