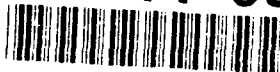


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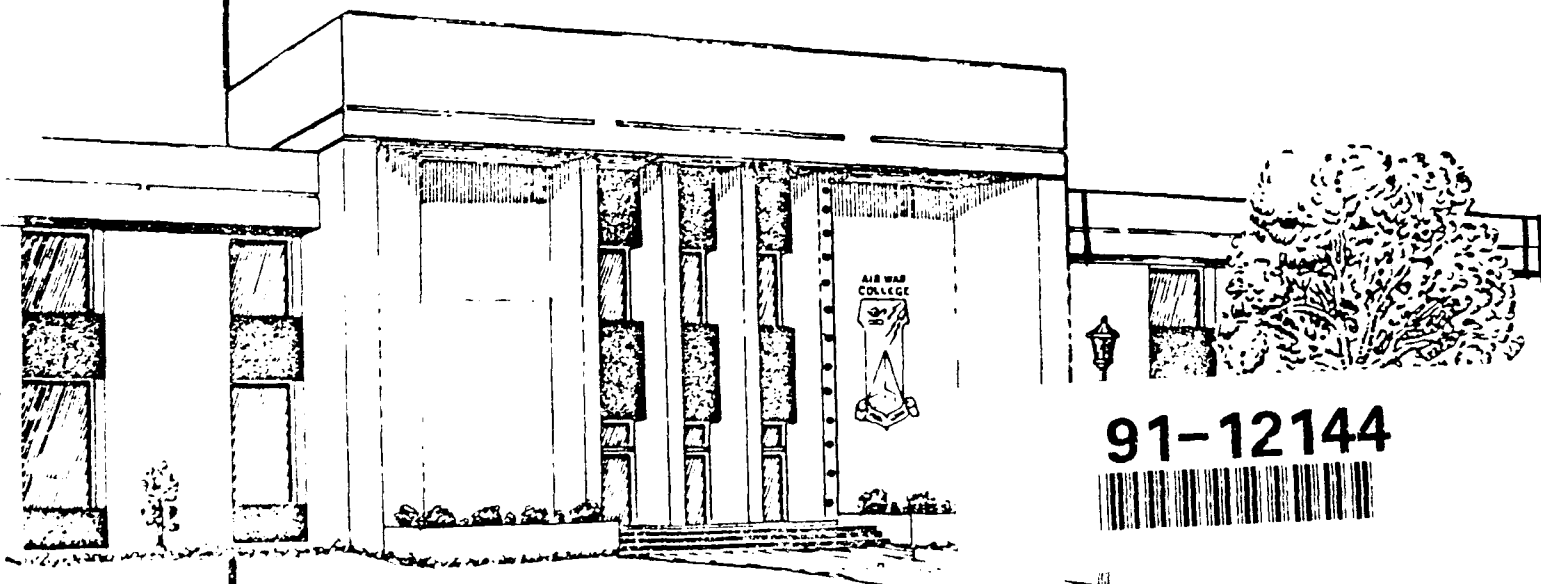
STRATEGIC AIRLIFT AND SEALIFT: BOTH HAVE LONG SUFFERED
FROM A CAPABILITIES VERSUS REQUIREMENTS DISCONNECT.

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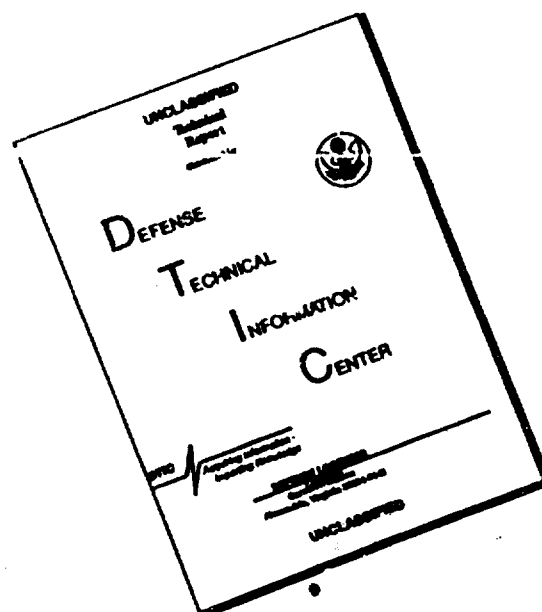
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STRATEGIC AIRLIFT AND SEALIFT: BOTH HAVE LONG SUFFERED FROM
A CAPABILITIES VERSUS REQUIREMENTS DISCONNECT.

WHAT IS THE PROGNOSIS?

by

Duane C. Johnson
Lieutenant Colonel, USAF

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



Advisor: Captain R. John Castor, Jr., USN

MAXWELL AIR FORCE BASE, ALABAMA

April 1990

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EXECUTIVE SUMMARY

TITLE: Strategic Airlift and Sealift: Both Have Long Suffered from a Capabilities Versus Requirements Disconnect.

What is the Prognosis?

AUTHOR: Duane C. Johnson, Lieutenant Colonel, USAF

Today the United States is not capable of deploying its conventional forces to areas of vital interest in the numbers or in the time frame essential for success. Even Operation Just Cause, considered a "small, local, short duration" contingency operation, severely taxed our available strategic airlift assets. During the 1980s we have made moderate strides in improving our lift capabilities. Moreover, if our force structure intentions hold true, the next several years will provide additional lift capability. Yet, being cognizant of the threats we face during the remainder of this century, it is apparent that the improvements in our lift capability fall far short and are promised too late. Barring outright cancellation, the DoD programs planned for the next few years will only serve as a band-aid to our chronic strategic lift ailment. We must either relook the requirements or develop the necessary lift capability. The latter promises to be a long and costly task; but if we are going to get our forces where needed and sustain them once they are in-place, we need to make strategic lift a high-priority national objective. Unfortunately, the prognosis for any improvement, especially sealift, of the magnitude required to overcome our capabilities versus requirements disconnect is not encouraging.

BIOGRAPHICAL SKETCH

Lieutenant Colonel Duane C. Johnson was born in Eureka, California. He spent his formative years in Santa Rosa, California graduating from Santa Rosa High School in 1967. In 1972 he graduated from the United States Air Force Academy having earned a Bachelor of Science Degree in Engineering Management. During his eighteen years of commissioned service, Colonel Johnson has had a variety of assignments in the computer technology career field with emphasis in computer system acquisition. His initial assignment was Computer Operations Officer at the Air Force Human Resources Laboratory, Brooks AFB. In 1976 he was assigned as Chief, Data Automation Division at RAF Alconbury, United Kingdom. Following this tour, Colonel Johnson earned a Master of Science Degree in Systems Management at the Air Force Institute of Technology, Wright-Patterson AFB. In 1980 he was assigned to the Air Force Computer Acquisition Center, Hanscom AFB, where he served as Hardware Analyst, Program Director, and Deputy Director of Acquisition and Cost Evaluation Directorate. In 1984 he attended the Command and Staff Course at the Naval War College, Newport RI. In 1985 he was assigned to Headquarters, Air Force Systems Command, Andrews AFB, where he served as Chief, Advanced Computer Technology Division and Executive Officer to the DCS/Technology and Requirements Planning. While assigned to Andrews AFB, Colonel Johnson also completed the Program Manager Course at the Defense Systems Management College at Fort Belvoir.

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CHAPTER I

INTRODUCTION

For the United States armed forces there are endless potential demands for strategic mobility and military presence, and these can shift without warning from long periods of indifference to moments of crisis. Though the likelihood appears to have faded dramatically given the continuing unfolding of events in the Soviet Union and across Eastern Europe, it is still plausible to create a scenario in which the United States and the Soviet Union suddenly reach a crisis over highly marginal interests. Moreover, it may be dangerous for either superpower not to act should circumstances warrant for inaction may be perceived by the other side as a sign of weakness and exploited elsewhere, or lead to a disadvantage should the trivial escalate into the important. The uncertainty in terms of time, place and magnitude of a military confrontation make it difficult to establish firm requirements for the size and composition of our strategic mobility assets.

Our national defense strategy remains one of war deterrence through a forward defense. For this strategy to be credible, our military preparedness posture must convince a potential adversary that the success of military action against the United States is sufficiently in doubt to make such action an unacceptable course of action. In the event that our war deterrence strategy should fail and conflict result, our

warfighting strategy is one which emphasizes offensive action forward and away from our shores. Thus, our national military strategy is twofold: first, war deterrence through forward defense; and second, should deterrence fail and conflict result, engage the enemy as far forward as possible.

During the decade of the 1980s, Department of Defense (DoD) planning function focused on preparing to fight "one and one-half wars" simultaneously. Two contingencies were regularly cited: a major North Atlantic Treaty Organization (NATO) versus Warsaw Pact conventional conflict in Western Europe and a lesser contingency elsewhere, most notably in the Southwest Asia arena.(32:27) What is our strategic lift capability to rapidly transport sufficient fighting forces in a timely manner to respond to such contingencies? Moreover, do we have the capability required to sustain our fighting forces for an extended period of time given such contingencies?

This paper will examine our strategic airlift and sealift capabilities to determine if and where shortfalls exist. In conducting this examination, two snapshots of our strategic airlift and sealift capabilities have been taken. The first snapshot focuses on our strategic lift capability during the mid-1980 period. More importantly, this first snapshot will reveal what "get well" initiatives in the area of strategic lift enhancement programs, both in operation and proposed, were being championed by the DoD during the mid-1980s to correct the strategic lift deficiency. The second snapshot

focuses on the status of our strategic mobility forces today to ascertain how those "get well" initiatives, promoted during the previous ten year period, have helped correct our nation's chronic strategic lift deficiency. The United States has recognized since the late 1970s that it suffers from a gross shortfall in strategic lift capability. The bottomline question which this paper addresses is: During the 1980s, a decade which the Reagan Administration committed to "rearming America", what progress did the United States make in balancing the capabilities versus requirements equation relative to our nation's strategic airlift and sealift?

Background

During the early 1970s strategic mobility planners were cognizant that strategic airlift and sealift resources were limited, even though considerable in number. Nevertheless, many planners worked in isolation assuming that all available resources would be available for their particular requirement, without regard to order priorities or movement needs. A study published in 1974 by the Office of the Secretary of Defense (OSD) revealed two alarming developments. First, to the Air Force's dismay, the Army did not know how big its major combat items of equipment were or how many of each item were associated with specific combat units, especially for essential follow-on support. Second, the Army discovered that the Air Force planned to use more strategic airlift to support :

deployment of its fighter and tactical airlift squadrons than Army planners had ever envisioned. (52:75) Such realizations precipitated the Army and Air Force to closely examine the process used for planning what should be airlifted, where, why and in what order. However, the magnitude of just how deficient the services were in joint strategic mobility planning did not become obvious for another four years.

Nifty Nugget Exercise

Nifty Nugget was the first government-wide mobilization exercise since World War II. It received widespread publicity because the exercise identified serious shortcomings within the DoD mobilization system.

More than 1,000 people participated in Nifty Nugget during October 1978. The players included senior DoD officials, and representatives from military commands and twenty-seven civilian agencies that had an integral role in execution of the DoD mobilization plan. The exercise simulated what would transpire should the United States have to fulfill its long standing commitment to defend its NATO allies in Europe. The Congress reviewed the results of the exercise in October 1979. Senator Sam Nunn was quoted as being concerned about "whether or not this country is really prepared for the kind of emergency for which it must be prepared." Representative Robin Beard called the results of the exercise "devastating." (31:S16146)

A brief review of the exercise will shed light as to why members of Congress expressed such concern. The scenario for Nifty Nugget assumed that Warsaw Pact forces would initiate a conventional attack against NATO after several months of growing tension, and an entire week after the United States had declared a national emergency. Troop and supply movements were then simulated in accordance with actual Joint Chief of Staff (JCS) war plans. Players made decisions on the actions to be taken and tested those decisions against the resources available.

The conclusion was that available strategic mobility resources were insufficient and that United States forces in Europe could not be sustained. Nifty Nugget indicated there was not enough airlift and sealift to support our "one war" warfighting plan to reinforce Europe at the rates and delivery times required. It further concluded that supporting "one and one-half wars" simultaneously with the strategic lift resources available was impossible. (31:516148)

Congressionally Mandated Mobility Study

In an effort to define the magnitude of the strategic lift problem, the Congress included language in the fiscal year (FY) 1981 Defense Authorization Act directing the Secretary of Defense to "conduct a comprehensive study to determine overall United States military mobility requirements." (22:28) The DoD completed the Congressionally Mandated Mobility Study (CMMS) in

April 1981 and since then it has served as a benchmark for measuring the sufficiency of our strategic lift resources.

What the CMMS did was to quantify for the first time strategic airlift and sealift minimum requirements to meet national commitments. The study included recommendations for specific quantitative increases in airlift and sealift capabilities. For airlift, the recommended goal was an additional capability of 20-million ton-miles per day (MTM/D) above the 46 MTM/D level projected to be available by FY 86. This total of 66 MTM/D has become the de facto goal for United States strategic airlift capability. According to Congressional testimony, such a capability would ensure sufficient airlift assets to move the equivalent of 60 tactical fighter squadrons, one Marine amphibious brigade and six Army divisions to Southwest Asia within ten days.(25:76) It is important to note that in the CMMS the actual MTM/D requirement for strategic airlift was calculated to be much greater than 66 MTM/D. Indeed, the CMMS stated that the actual goal, assuming an all-out conventional war in Europe requiring 479,000 tons of cargo in a 15 day period, could be as high as 122 MTM/D.(34:43) However, both the Congress and the DoD acknowledged that in light of budgetary realities, the actual requirement was an unattainable objective; and therefore deemed unrealistic. Thus the Congress and the DoD finally settled on a fiscally constrained, long-term goal of 66 MTM/D as an achievable and therefore "realistic" goal.

As for strategic sealift, the study established a 100,000 short-tons goal to be added to the FY 86 projected sealift capability baseline. However, in 1983, two years after the CMMS had determined that sealift assets were only a little more than halfway to the established goal of 100,000 short-tons (roughly equivalent to thirteen merchant ships), OSD released a study which addressed strategic sealift requirements. The OSD study established a new minimum requirement of 800,000 short-tons of total sealift capacity. This study was based on an FY 88 time frame rather than the CMMS time frame of FY 86. According to Vice Admiral W.H. Rowden, the OSD study "is a much tougher requirement" than that contained in the CMMS as it focuses on simultaneous NATO and Southwest Asia contingencies. (25:88)

Given the baseline goals for strategic airlift and sealift are 66 MTM/D and 800,000 short-tons of lift capacity, respectively, the following two chapters will examine our progress during the past ten years in meeting these goals. Where shortfalls exist, this paper will analyze the programs intended to reduce the deficiencies in United States strategic lift capability to ascertain the contributions of those programs.

CHAPTER II

STRATEGIC AIRLIFT

The United States deterrent strategy demands a force-projection capability sufficient to respond to global challenges. To achieve national security goals, the DoD deterrent strategy is based on a mix of Continental United States based and forward deployed forces. The requirement to rapidly project and sustain military forces anywhere in the world is necessitated by this strategy. The effectiveness of a combat unit, no matter how well trained and equipped, depends on having the right equipment in the right place at the right time. When timely delivery of military forces is necessary, there is no substitute for airlift.

The DoD's strategic airlift mission is performed by a combination of general-purpose, specialized and dedicated mission aircraft operated by Active, Reserve and Associate Reserve units. These units are augmented by the Civil Reserve Air Fleet (CRAF), composed of civil passenger, cargo and cargo-convertible aircraft. The CRAF is discussed in greater detail later in this chapter.

No nation can match the United States' ability to transport people and cargo by air. Yet, our current capability is simply not enough. Over the past fifteen years seventeen separate studies, most notably the CMMS, have been conducted all of which have drawn the same conclusion: a significant

shortfall exists in our strategic airlift capability. (30:11)

It is now generally recognized within the DoD that in years past, United States combat forces have been fielded without appropriate attention to the mobility resources essential for effective deployment and employment of those forces. Military Airlift Command (MAC), the DoD single manager for strategic airlift, has demonstrated on several occasions that it can superbly support relatively small-scale contingencies with its available airlift assets. Operation Just Cause is the most recent example validating this claim. However, available resources would not be enough to satisfy the demands required of a type scenario considered by the CMMS.

The Airlift Dilemma

Though the CMMS specifies a minimum airlift requirement of 66 MTM/D, our strategic airlift capability in FY 85 was less than 36 MTM/D. Given a 66 MTM/D capability, from a military planner's perspective, theoretically the United States could transport an Army infantry division to Europe in just under 2.5 days; or transport the same division to Southwest Asia in 3.7 days. However, by comparison, based on the Air Force's actual FY 85 airlift capability, it would take 4.6 days and 6.8 days, respectively. (35:27) Since FY 85 the Air Force has increased its strategic airlift capability from 36 MTM/D to a capability today of 48 MTM/D. (46:46) This increase is primarily the result of the addition of forty-four C-5B and thirty-two KC-10A

aircraft to the strategic airlift inventory during the past five years.(51:41) Obviously, in the realm of strategic airlift the term "rapidly respond" is relative. And though the gap between airlift capability versus airlift requirement has been reduced over the past five years, the fact remains that the United States' ability to "rapidly respond" with a sizeable fighting force to a scenario as depicted in the CMMS and sustain that force during a protracted confrontation remains highly suspect.

Initially, the Army must count on airlift to deploy and sustain its units until sealift assets can be used. Sealift closure times range from fifteen to twenty days to Europe, and from thirty to forty days to the Southwest Asia arena. In 1984 Lieutenant General Kingston, then Commander in Chief of United States Central Command, stated "I've got to get there (Southwest Asia) rapidly and airlift is the way it's going to be for at least the first thirty days".(25:77) Unfortunately, nothing has changed in the past six years to alter the reality of General Kingston's statement.

Since the late 1970s, the Army has increased the size, weight and numbers of heavy, mechanized firepower items, resulting in a substantial amount of outsized equipment. Approximately 44 percent of an armored division's equipment is currently outsized while a mechanized division has 41 percent outsized equipment.(25:77) Currently, only C-5 aircraft in the Air Force inventory can transport outsized equipment. While

not all of the outsized equipment to be deployed is needed immediately, some equipment items are crucial in the earliest stages of combat. These include tanks, 155mm and eight-inch self-propelled artillery and support helicopters. Compounding MAC's dilemma in airlifting outsized equipment, 37 percent more airlift is required to move today's Army units than was required ten years ago due to an overall increase in weight of Army division units. (40:68) In October 1988 General Carl E. Vuono, Army Chief of Staff, stated the obvious: "In the event of conventional war, the Army's biggest area of vulnerability is strategic lift capability." (40:66)

The solution to the outsized cargo dilemma appeared to be in the production of the C-17 aircraft, an intertheater and intratheater aircraft capable of transporting outsized equipment. Unfortunately, during the latter half of the 1980s the C-17 program fell victim to schedule slippages and funding shortfalls as the Congress subjected the program to frequent and intense requirements and budgetary scrutiny. With increasing frequency in program delays caused by technical problems and funding cuts, the cumulative effect was that a program that in FY 84 had targeted the aircraft's initial operational capability (IOC) date to be FY 87 had no choice but to slip the IOC date to FY 92. Since then the C-17's IOC date has remained an elusive target and today faces the prospect of an IOC date of no earlier than FY 95. (10:50)

When the CMMS was released, it clearly revealed the seriousness of the strategic airlift shortfall. Suddenly faced with the shocking realization that intertheater airlift capability stood at less than half the specified requirement, i.e., 28 MTM/D with about 10 MTM/D of the shortfall for outsized equipment, a new transport aircraft that would not be operational until the early 1990s (since slipped to the mid-1990s) was not deemed an attractive alternative. The Air Force decided as a near-term solution to procure fifty C-5Bs (later reduced to 44 aircraft).

In addition to the procurement of the C-5Bs, other fallout from the CMMS included procurement of a total of fifty-seven KC-10A aircraft by increasing the initial buy of 25 aircraft by an additional 32; and revitalization of the CRAF Enhancement Program. It was anticipated that when fully implemented, these programs would increase airlift capability by 15 MTM/D. Yet even with the procurement of forty-four C-5Bs and an additional thirty-two KC-10As, and the CRAF Enhancement Program, the Air Force today still faces an 18 MTM/D shortfall in strategic airlift. While these new airlift programs have increased cargo capability, other factors contributed in reducing some cargo capability during the same time period. In spite of the CRAF Enhancement Program, overall cargo capability provided by the CRAF decreased from 10.9 MTM/D in FY 85 to 8.4 MTM/D today.

Current Airlift Capability

The Air Force's sixty-six C-5A and forty-four C-5B aircraft, currently the only outsized cargo carriers, each can transport a maximum payload of 260,000 pounds a maximum distance of 1,650 nautical miles. Two other aircraft, the C-141 and KC-10A, can haul cargo intertheater distances but cannot carry outsized equipment.

The C-141 can transport 90,000 pounds of cargo a maximum distance of 1,970 nautical miles unrefueled. In 1984 the Air Force completed the C-141 Stretch Program involving two hundred thirty-four C-141 aircraft. The program increased the lift capacity by 30 percent and provided an inflight refueling capability. The C-141 Stretch Program enhanced the lift capability of the C-141 fleet by the equivalent of an additional ninety C-141 aircraft.(1:19) However, due to the age of the C-141 airframe, the C-141 fleet has experienced increased maintenance requirements due to the recent detection of stress cracks in its wing structure. This problem arose because C-141 aircraft, which entered the active service inventory in 1963, have been assigned more low-level activity, aerial refueling, heavier loads and longer flights than was originally planned. As such, as the C-17 enters active service the Air Force's long-term plan calls for phasing out of approximately 60 of the oldest C-141s. This reduction will result in the retention of a reduced C-141 fleet of about 180 of the less-worn aircraft.(50:10-5)

The KC-10A is capable of carrying cargo or performing air refueling, or a combination thereof. In a cargo role it can transport a maximum payload of 170,000 pounds approximately 3,400 nautical miles. As a tanker the KC-10A can offload 390,000 pounds of fuel. None of the Air Force's current strategic airlift aircraft are in production.

C-17: A Capability Long Overdue

The solution to the strategic airlift deficiency lies in the procurement of the C-17 aircraft. The C-17 will carry a maximum payload of 172,200 pounds, to include outsized equipment, a distance of 2,400 nautical miles and deliver its payload directly at forward operating locations having runways as short as 3,000 feet. The C-17 will have approximately the same wing span and length as the C-141 and carry the same outsized equipment as the C-5. But even with its lift capability, the C-17 will have the highly desirable small-field operating characteristics of the C-130 aircraft.

It was envisioned in the early 1980s that the Air Force would procure a fleet of two hundred ten C-17 aircraft. Such a fleet will increase intertheater lift capability by 35 percent; from the current capability of 48 MTM/D to 66 MTM/D by FY 98.(40:68) However, two developments have doomed the Air Force in achieving the 66 MTM/D goal by FY 98. With slippages in C-17 development and production schedules over the past few years, no C-17 aircraft will be added to the Air Force

inventory during the next four years. If the Air Force procured its planned number of two hundred ten C-17s, the 66 MTM/D goal would be attained but not until approximately the year 2003. Though development and production schedule slippages would have delayed the Air Force in attaining the 66 MTM/D goal by FY 98, indications are that due to budgetary considerations, Defense Secretary Richard Cheney is contemplating reducing the quantity of C-17s produced from 210 to 120 aircraft. (28:12) If such a drastic cut is indeed levied, then any thought of achieving the 66 MTM/D goal over the next twenty years will remain farfetched and be relegated to a "what might have been" discussion topic.

Civil Reserve Air Fleet

The above discussed programs are essential but alone they will never satisfy the DoD's strategic airlift requirement. The DoD has looked for other means to augment its airlift programs. In particular, the DoD relies on the private sector to provide approximately 95 percent of the passenger airlift and 25 percent of the cargo airlift required in a time of national emergency. (47:29) With such a dependency on civilian aircraft augmentation, the DoD is highly sensitive to the health and welfare of the commercial airline industry. Although MAC realizes the potential of our civilian partners, the DoD has little or no control over many of the external forces which effect the size and composition of the CRAF fleet.

Due largely to deregulation, the CRAF contribution of 380 long-range aircraft which were available to MAC in FY 85 has today been reduced to 331 aircraft. Of the commercial aircraft committed to the CRAF today, 253 aircraft are passenger carriers and the other 78 are cargo aircraft.(7:24)

The CRAF can be called into service in three stages. However, full mobilization of the CRAF has never been attempted nor required for a contingency or emergency situation during the 38 years since its inception. If the CRAF were to be fully activated, there is some doubt whether it would work as planned. For example, would civilian aircrews willingly fly into a hostile area? Moreover, has the DoD made provisions to maintain and logistically support assigned CRAF aircraft?

Separate from the CRAF is the CRAF Enhancement Program. This program is intended to encourage airlines to add cargo-convertible features to their wide-body passenger aircraft. Modifications include a large cargo door and reinforced flooring. Through FY 89, two DC-10s and nineteen B-747s have been modified under this enhancement program. An additional two B-747s are scheduled to be modified during FY 90.(50:10-4)

NATO Civil Air Augmentation

Another area where the Air Force has been successful in gaining access to more civilian aircraft is from allied nations. Through an agreement called the NATO Civil Air

Augmentation (NCAA), certain NATO members will commit civilian long-range aircraft to support the reinforcement of Europe. During FY 85 six NATO members agreed to commit a total of 52 aircraft to MAC under the NCAA program. (38:17) Today our NATO allies have committed to an allocation of 40 civilian cargo aircraft and 69 passenger aircraft. (49:172) While these aircraft can only be used in transporting forces and supplies to reinforce Europe, NCAA agreements provide an additional source for airlift at virtually no cost to the United States.

The Future

On hint as to the future of the United States strategic airlift program was mentioned as long ago as July 1982 by General Allen, then MAC Commander in Chief. General Allen stated that "...we might possibly go into partnership with the civilian airlines on an airplane for the year 2010 or 2020." (1:19) His concept envisioned a jointly designed and manufactured airframe which could serve as an efficient military cargo transport aircraft. Though the concept appears feasible, historically an aircraft that can serve a dual civilian-military mission has not materialized. The weight penalties inherent in outfitting transport aircraft for military missions make them inherently uneconomical for commercial airline use. The failure of C-130, C-141 and C-5 derivatives to penetrate the civilian marketplace attest to such laws of physics and economics. Conversely, the B-747 has

never been considered a serious candidate by the Air Force as a military cargo aircraft. Given the lack of similarity in airframe requirements between civilian commercial aircraft and military aircraft, at this time one can only conclude that General Allen's vision of what might one day be will remain nothing more than that...a vision.

CHAPTER III

STRATEGIC SEALIFT

Strategic sealift comes under the auspices of the Navy's Military Sealift Command (MSC). MSC's primary mission is to provide sealift for strategic mobility in support of national security objectives. This mission demands the capability to deploy and sustain military forces whenever and wherever needed, as rapidly and as long as operational requirements dictate. MSC discharges its mission by using both United States government-owned ships and ships of the United States-flag merchant marine. Four sources which comprise the Navy's strategic sealift capability are the United States merchant marine, the MSC controlled fleet, the National Defense Reserve Fleet (NDRF) which includes the Ready Reserve Force (RRF), and the effective United States controlled (EUSC) fleet whose ships are registered in foreign "flags of convenience" nations. In addition, the Navy may draw upon a fifth source for ships to support its strategic sealift mission. This source is commonly referred to as the European NATO pool of ships. Each of these five sources of strategic sealift will be discussed in this chapter.

While airlift is both fast and flexible, and is certainly a necessary strategic mobility asset, estimates are that 95 percent of the dry cargo and 99 percent of bulky liquids and fuels will be transported by sea in the event the

United States becomes involved in a protracted, conventional conflict. (12:48) It is estimated that one dry cargo ship can deliver the equivalent tonnage of 2.5 days of airlift and when the first ten ships arrive in the Persian Gulf they will deliver tonnage approximately equal to a full month of airlift. (21:58) During the 1973 Yom Kippur War the first cargo ship that arrived in Israel carried more supplies than the entire airlift effort by the United States Air Force. However, as proponents of air power will quickly emphasize, the war ended before the first ship arrived.

It is obvious that the United States cannot totally rely on one mode of strategic mobility. Whereas airlift provides rapid force projection, the value of sealift is in its ability to deliver follow-on forces and provide the sustaining power necessary for deployed forces. We need both strategic airlift and sealift in sufficient quantities to deploy and sustain our military forces in response to our global commitments

The Sealift Dilemma

The factor most often cited to measure a nation's sealift capability is the number of ships it owns or controls in a national emergency. When this factor is applied to the United States' sealift capability, it becomes readily apparent that overall sealift assets available to support American forces have eroded at an alarming rate. During the Korean War,

the United States had more than 2,400 dry cargo vessels at its disposal; during the Vietnam War there were approximately 1,200 such ships available for military use. Today there are roughly 430 such ships. (53:65)

In August 1982 Vice Admiral K.J. Carroll, at the time Commander of the Military Sealift Command, stated:

Since the late 1960s, it's no exaggeration to say that the military has pursued sealift with relentless apathy--and apathy is a dangerous course. Do we have the sealift resources now to deploy our combat power outside the United States? I don't think so. (6:9-10)

With dramatic changes unfolding throughout the world, most notably in Europe, there is increasing likelihood that the United States will have to be more prepared than ever to rapidly deploy its stateside-based forces to a potentially austere environment should threats to our interests in that area warrant such a response. Pressures are building to withdraw troops from Europe and the Far East. These pressures are growing due to multiple reasons: whether because of Congressional impatience with allied burden-sharing, or the desire to reduce overseas stationed forces as an expedient fix to the defense budget squeeze, or because of hoped-for reductions in European force levels as a result of negotiations on conventional arms reductions. The impact of such changes in the international arena would appear to affirm the continued military requirement for a strong strategic mobility capability. Though a Moscow-directed communist threat to our global interests appears to have diminished significantly, a

crucial need remains for a mobile, flexible, fast-responding United States military. In fact, as the United States reduces its forces both at home and abroad, strategic mobility assets become even more critical. And sealift, along with airlift, is how the United States provides that strategic mobility.

Unfortunately, since Admiral Carroll's bold and honest appraisal of our sealift capability, the nation's sealift capability has remained in a terminal condition. Though there have been several programs directed at improving the sealift situation, those programs have only influenced, at best, our sealift capability on the margin. One can only surmise that due to the magnitude of the crisis, neither the DoD nor the nation as a whole is willing to make a conscious commitment to correct this chronic problem.

In light of competing demands for our nation's limited resources in time and treasure; and given what the Department of the Navy, the DoD, and the nation considers as more urgent priorities, the sealift crisis has assumed the role of an orphan child, i.e., everyone acknowledges the problem but at the same time deems it someone else's problem to fix. In a recent interview, General Carl E. Vuono, Army Chief of Staff, provided some candid thoughts on the nation's current state of affairs concerning sealift. "The sealift problem is broader than just the Department of Defense. It gets into the whole merchant vessel fleet problem. Notwithstanding recent studies ordered by Congress, little is being done." (40:66)

Even more revealing are comments by Vice Admiral Walter T. Piotti. At the time of his comments, Admiral Piotti was Commander of the Military Sealift Command.

We don't have sufficient sealift today to lift what the Army has. I think we have come from a position where we were grossly inadequate to a point where today we're marginally inadequate in our ability to carry, within the timeframes desired, the warfighting CinCs' global total requirement. Into the early '90s I would say that we will maintain the current position of being marginally inadequate to satisfy the requirement. (12:48-49)

Given Admiral Piotti's was MSC Commander at the time he made the above remarks, it is reasonable to assume that it was the admiral's intent to portray as optimistically as possible the current state of affairs concerning our nation's sealift capability. But as he stated in his first sentence, "We don't have sufficient sealift today...." His distinction between "grossly inadequate" and "marginally inadequate" is irrelevant. The grim reality is, as Admiral Carroll stated, that since the late 1960s we have suffered from a chronic sealift requirement versus sealift capability disconnect. And as Admiral Piotti pointed out, this disconnect has, at best, only marginally improved over the past twenty-five years and will remain at least into the early 1990s.

The remainder of the chapter will discuss the contribution of each of the five sources of strategic sealift available to the United States Navy in its attempt to accomplish its strategic sealift mission.

United States Merchant Marine

Historically, the primary source of our nation's strategic sealift has come from the United States merchant marine. These vessels may be requisitioned to support military needs upon Presidential declaration of a national emergency. As critical as this source of sealift has proven in past wars and conflicts, the United States has allowed its merchant marine to erode to a mere fraction of its former strength

The steady and rapid decrease in the number of vessels in our merchant marine is without precedent. At the close of World War II the United States possessed the world's largest merchant fleet with more than 3,000 ships. By nearly every statistic, today the merchant marine is an endangered species. As United States exports have dwindled with a ballooning trade deficit, so has the number of United States flag ships. Today, the active United States merchant fleet ranks 16th in the world and numbers approximately 360 active ships. Of these, less than 120 ships are engaged in overseas trade.(44:35) Estimates are that by the year 2000, the United States merchant fleet will number approximately 220 vessels.(8:72)

The decline of our maritime industry is well documented. In 1987 the Report by the Commission on Merchant Marine and Defense stated, "There is a clear and growing danger to the national security in the deteriorating condition of America's maritime industries."(42:15) More recently, Admiral W.J. Crowe, then Chairman of the Joint Chiefs of Staff, stated:

Shipbuilding in this country, and also the capacity of our merchant marine,...is dismal. It is a disaster. The maritime industry...needs an infusion. It needs help. It needs resurrecting.... It is a national problem.(3:70)

The above two quotes reflect a growing realization that the United States no longer has the maritime capability--ships, men to man them, and shipyards to build and repair them--necessary to support its national strategy of forward deployment overseas.

The incredible demise of our merchant marine fleet can best be summarized by the following four sad-but-true facts.

- In 1970, the United States had 18 major shipping companies. Each operated five or more ships, with a total of more than 430 ships in service. Today, by contrast, there are four major companies, with a total of 88 ships that operate in the foreign trades.(42:15)

- In 1980, 142 ocean-going ships were being built in 19 different United States shipyards. Today, there are only nine shipyards in business, and the ships they are building are all for the Navy. There are no ocean-going commercial ships under construction in the United States. Not a single commercial tanker or cargo vessel has been built in any United States shipyard since 1985.(8:69)

- For eight years, our maritime industrial base has been held together largely by contracts for the Navy. Today, 90 percent of the workload in private shipyards is Navy work. And as we confront an increasingly austere fiscal climate,

funds for construction and overhaul of Navy ships will undoubtedly be reduced. (42:15-16)

- In the past six years, 76 shipyards and 38 major dry dock facilities in the United States have closed, forcing thousands of skilled maritime workers out of jobs. (8:69)

Ship types are as important as ship numbers. Although the increase in the size of today's merchant ships offsets much of the loss of cargo capacity caused by the reduction in numbers since World War II, increased size is a mixed blessing. The characteristics of the commercial merchant fleet throughout the world have changed in a way that, while giving the ships much greater commercial capability, tends to make them less useful for military purposes.

For example, dry cargo ships must be capable of carrying the appropriate military cargo and of access to usable unloading facilities. In the world's commercial fleets, general purpose "breakbulk" ships have, to a large extent, been replaced by large container ships that move cargo quickly and efficiently in standard size containers or "boxes." However, much military cargo, particularly "unit equipment" (wheeled and tracked vehicles, helicopters, artillery, etc.), is not readily suitable for containerization. Ships ideal for the movement of unit equipment (roll-on/roll-off, breakbulk, and other noncontainerships) have mostly been driven from the seas by container ships.

The problems which plague the United States merchant marine and restrict our sealift capability are not limited to the numbers and types of ships. Equally important is the necessity to crew the ships with trained merchant mariners. Unfortunately, the number of American mariners is directly tied to the number of American ships in our merchant fleet. Thus, just as the number of vessels has steadily declined since the close of World War II, so has the number of mariners.

Whereas 200,000 experienced seafarers were available in 1946 to man the 3,000 ships in the merchant marines; fewer than 28,000 mariners are sailing today. (44:36) In fact, since 1970 alone there has been a 60 percent decrease in the number of United States merchant mariners; and maritime analysts estimate that the number will decline to a level of about 12,000 by the year 2000. (8:72) A Navy study estimates that the shortfall in merchant marine manpower will be 12,300 people in FY 92. (44:36) This estimate was based on mobilization needs for both surge and sustaining shipping.

One final indicator of the terminal condition of our merchant marine is the fact that a significant number of seafarers are at least 59 years of age. In fact, more than 33 percent of the workforce will have reached 65 years of age by 1992. (44:36) The "graying" of America's merchant marine is apparent.

Military Sealift Command Controlled Fleet

A second source of strategic sealift is the shipping contained in the MSC controlled fleet. Though much smaller in number than the United States flag fleet, these ships are government owned or controlled and thus readily available to support defense needs in a national emergency. This source includes ships owned or chartered by the Navy which are actively engaged in carrying military cargo in peacetime as well as a smaller number of ships immediately available, but maintained in a reduced operating status.

While perhaps our most modern and ready source of sealift, during the past ten years the number of ships assigned to the MSC controlled fleet has grown at a very moderate rate. In FY 80 there were a total of 44 ships (23 cargo ships and 21 tankers) assigned to the MSC controlled fleet. Today the fleet totals 70 vessels (43 cargo ships and 27 tankers). (51:41) Moreover, some of the ships assigned to the fleet are special purpose support ships which would carry limited if any sealift cargo.

In the past six years the Navy has spent \$6.8 billion to improve the MSC controlled fleet. The Navy spent \$2.4 billion to build or buy and convert eight fast sealift ships, 95 Ready Reserve Force (RRF) ships, two hospital ships, ten auxiliary crane ships and two aviation logistics support ships. (The RRF ships will be discussed in greater detail in the following section as part of the National Defense Reserve

Fleet.) Almost half of the \$6.8 billion (\$3.14 billion) was spent on operations and maintenance of these vessels and for the charter of 13 maritime prepositioning ships. The remainder of the money was spent on sealift enhancement features, improved cargo loading systems and communications equipment. (8:72)

It should be noted that this fleet also includes the vessels in the Afloat Prepositioning Force located in the Indian Ocean and the Mediterranean Sea. These assets would not be available to transport stateside-based defense cargo until they have discharged their prepositioned stocks and returned to the United States.

During the past five years the topic of fast sealift ships has received much discussion in Congressional and DoD circles as a partial, though significant, solution to the sealift dilemma. In fact, in the past three years the MSC controlled fleet has acquired eight fast sealift ships. However, as General Hansford Johnson, Commander of United States Transportation Command, stated during a recent interview; "...fast sealift seems to be taking on less importance" as we are better able to forecast through improved indication and warning of an impending threat to our national security. General Johnson continued his remarks by stating that;

There is only a two day difference in the time it takes to get to Europe by sea if you travel quickly based on a speed of 28 knots or at the standard speed of 20 knots. So fast sealift is getting less play as we gain more time. (33:39)

A recent incident involving the Congress and the DoD substantiate General Johnson's statement that fast sealift has lost much of its earlier appeal (at least in DoD's eyes).

In the FY 90 Defense Appropriations Act, the Congress approved \$600 million, not requested by the President, for the procurement of from 10 to 12 fast sealift ships. In addition, the Congress added \$15 million to the budget for fast sealift research and development. However, the DoD has announced its intention to use the \$600 million of FY 90 sealift funding to help purchase the last lots of the M1A1 Abrams tank and F-15E Eagle fighter aircraft in the FY 91 budget. (37:26)

The use of this money to buy additional Army tanks is doubly ironic. We already have a well-documented sealift shortfall. To deny sealift funding to buy more tanks for which no sealift exists is a budgeting error of monumental proportions.

National Defense Reserve Fleet

A third source of strategic sealift is the National Defense Reserve Fleet (NDRF). The NDRF is a strategic reserve of ships that was created by the Merchant Ship Sales Act of 1946 which provided for the government to purchase, store and maintain vessels in support of national defense contingencies.

The NDRF is commonly referred to as the "mothball fleet" of which the vast preponderance of the ships assigned to it were constructed during World War II. Today there are

approximately 125 vessels in the NDRF that are considered military useful. However, 88 of these ships are World War II VICTORY-class vessels.(50:10-5) Given the age of many of the NDRF assets, critics often express their concern as to the true military utility of this source of strategic sealift. Even the administrator of the United States Maritime Administration, considered a staunch defender of sealift, has expressed doubts in the viability of the NDRF. In 1983 Admiral H.L. Shear, then Maritime Administrator, made the following statement.

MarAd has extreme reservations as to the continued viability of many ships in the NDRF, particularly those with construction dates prior to 1950.... No ship 40 years of age or older can be considered to be a reliable asset in time of emergency. Our planning should so indicate.(17:32)

Though DoD documents allege that activation of NDRF assets would be accomplished in approximately 60 days following a mobilization order, non-DoD sources estimate that activation of the NDRF fleet would realistically take at least 120 days.

Because of their relatively small tonnage capability, slow speed and the excessive time required to activate these assets, current DoD planning considers the preponderance of the NDRF a strategic sealift resource suitable only for use as replacements for combat losses, for sustaining operations in the latter stages of a prolonged conflict and for essential economic support of the civilian economy.(50:10-5) Current plans call for scrapping most of the older vessels assigned to the NDRF by the year 2000.

An exception to the aging NDRF's limited capability is a subset of that fleet known as the Ready Reserve Force (RRF). The RRF is a fleet of former commercial ships that have been modified to meet Navy requirements. The DoD Sealift Study published in 1984 recommended maintaining a RRF of 61 dry cargo ships and 16 tankers. In 1985 the Navy issued its RRF Resizing Study which revised goals for the size of the RRF fleet to 100 dry cargo ships and 20 tankers by the end of FY 91. (43:57)

Today the RRF fleet totals 91 ships. These ships are considerably newer and more militarily useful than vessels assigned to the NDRF. As a result of the declining numbers of ships in the United States flag merchant marine fleet, the Navy plans to expand the RRF to 120 ships (100 dry cargo ships and 20 tankers) by FY 92. (43:58) However, as will be discussed later in this section, recent cuts in funding will undoubtedly extend the FY 92 goal.

The RRF was established under a Memorandum of Understanding between the Department of Navy and the Department of Transportation as a fully funded Navy program; within the responsibility of the Military Sealift Command. The Maritime Administration (MarAd), on a cost reimbursable basis, serves as the Navy's agent in maintaining the RRF fleet. Though the MarAd maintains the RRF fleet, the vessels are considered DoD assets.

The RRF is maintained in a 5, 10 or 20 day readiness status and thus would be available much sooner than the older

NDRF assets.(49:172) In order to evaluate readiness status, ships assigned to the RRF fleet are periodically broken out. Each ship has a requirement to be broken out once every five years.(12:49) Moreover, RRF vessels are routinely used in military exercises.

The Navy's RRF is not immune to the two greatest problems contributing to the demise of the entire United States maritime industry. Those two problems are money and manpower. Though the Navy's goal is to have 120 vessels in the RRF by the end of FY 92, recent action by the Congress may seriously setback that goal. Current growth and modernization initiatives for the RRF were jeopardized when the Congress cut 63 percent from the Navy's FY 90 budget request for the RRF fleet.(15:7) Moreover, just as the entire United States maritime industry is facing a severe manpower shortage, the availability of trained crews to adequately man vessels is also a serious concern for both the NDRF and RRF fleets. As Vice Admiral Hughes noted in a 1987 speech, "It's hard to man a predominantly steam-propelled breakbulk RRF ship with operators who have trained and sailed on non-selfsustaining diesel ships only."(44:36)

The downward trend in active seafaring billets, the inadequate pool of experienced mariners and the acquisition of older ships for the RRF present seemingly insurmountable obstacles if the United States should have to mobilize in the near future and beyond.

Effective United States Controlled Fleet

A fourth source of strategic sealift is the Effective United States Controlled (EUSC) fleet. The EUSC fleet consists of ships which are majority-owned by United States businesses but are registered in foreign "flags of convenience" (FOC) nations. Four nations which the United States has FOC agreements with are Liberia, Panama, the Bahamas, and Honduras. This practice allows ship owners to employ cheaper foreign crews and avoid various other government regulations and operating restrictions.

Today, the United States is the leading user of FOC shipping. United States citizens own over 39 million deadweight tons of the world total of open registry ships, which is nearly 80 percent more merchant tonnage than is registered in the United States. (8:68)

The number of ships in the EUSC fleet has declined over the past ten years, but still numbers approximately 230 vessels. However, only about 90 are considered useful for military purposes. (12:50)

Though technically requisitionable and included by DoD planners in the list of available strategic sealift assets, a concern often cited by critics of the EUSC fleet is that the United States does not have total control over FOC ships. In time of national emergency or declared war, the President may requisition FOC vessels. However, control of such ships must be shared with the foreign government of the ship's registry.

foreign ship's officers and foreign crew members, which often means the involvement of three different foreign countries.

The doctrine of "Effective United States Control" of the United States' "foreign-flag" fleet is based on agreements, not treaties. Return of these ships to United States control is based on the "good will" of the governments of these countries. History has shown that the United States cannot always count on the existence of such good will in times of crisis or national emergency.

During the Arab-Israeli War of 1973, EUSC ships under Liberian registry were prevented by a Liberian Executive Order from being used by the United States to transport military supplies to Israel.(23:29) In addition, during the Vietnam War, some foreign flag ships chartered by the Navy to move war materials from the United States to Vietnam were prevented from sailing by crewmembers who opposed United States policies in Vietnam. In both instances the actions of the foreign crews were supported by the American ship owners.(8:69)

These two experiences support the argument that there are no compelling reasons to assume foreign crews will support future United States policies and actions. Is it reasonable to believe that an American oil company-such as Exxon or Mobil-could deliver a tanker to MSC in time of emergency when that vessel flies a Liberian flag, is owned by a Bahamian subsidiary, is manned by Indian officers and a Taiwanese crew, and is sailing in the Persian Gulf?

European NATO Pool of Ships

From a DoD planner's perspective, sealift support from United States allies has become increasingly important to offset the continued decline in our commercial sealift assets. In the event of a NATO contingency, a fifth source of strategic sealift may be made available. That source would be provided by European nations under the NATO pool of ships agreement. However, in the case of the availability of NATO ships, the decline in the European merchant fleets has paralleled our own, and there is increasing question about whether our European allies will be able to supply the numbers and types of ships upon which current United States planning relies.

Currently, NATO has promised over 400 dry cargo ships and 60 tankers for the rapid reinforcement of Europe. (50:10-5) While this may seem to represent a relatively significant and reliable commitment by NATO-member nations, since 1980 the number of vessels committed to the NATO shipping pool has decreased by more than 30 percent due to scrapping and reflagging actions by NATO-member nations. For example, British-flagged vessels are decreasing in numbers; and contributing to the demise in capability of their merchant fleet is the ever increasing decline in the available pool of trained British merchant marine seamen. (50:10-9)

Given the synergistic effect of the changing social, political, economic and military climates in Europe today, one cannot disregard that the carriers providing these ships for a

NATO cause undoubtedly have loyalties to their company and country first. Thus the likelihood is ever present that the United States, through its NATO shipping pool agreement, could receive something less in sealift assets than what DoD mobility planners envision. How much is that "something less" must be considered on a country by country basis weighing such factors as the immediacy of the threat, the nature of the crisis and the issues at stake as perceived by each Western European country.

The Future

Alfred T. Mahan wrote that: "A nation's maritime commerce strength in peacetime is the most telling indication of its overall endurance during war." (6:13) Having analyzed in this chapter the current state of affairs of our maritime industry, and more specifically our strategic sealift capability, one is left with an almost hopeless feeling that barring an extraordinary augmentation in our strategic sealift capability, the United States might literally be dead in the water. As has already been discussed, our maritime industry is suffering from the cumulative and devastating effects caused by a rapid decline in the number of merchant ships; a growing shortfall in experienced merchant mariners; a mismatch in the type of ships preferred for sealift of military forces versus the types of ships predominately used today for commercial

purposes; and the alarming shortfall in shipbuilding and repair capability which would be required during a prolonged conflict.

In 1984 the Navy formally established strategic sealift as a third major mission-joining sea control and power projection-to emphasize the criticality of this mission in the defense of our nation. Such recognition in the importance of sealift demonstrates, according to Vice Admiral Rowden, the Navy's resolve to change the Navy's "prejudice against the noncombatant vessel." (39:10) However, the dire state of our strategic sealift capability will not be rectified merely by decree. It will take an exorbitant amount of two precious commodities, time and treasure, for this nation to remedy the tremendous imbalance we face today in the requirement versus capability equation for strategic sealift. The remedy required, though, greatly exceeds the resources available to the Navy.

Today the chronic sealift problem is of such magnitude that many people acknowledge that the solution to the problem greatly exceeds the scope of even the DoD. As General Galvin, the Supreme Allied Commander Europe, stated in 1988; "The answer is to revive the merchant marine." (40:66) The demise of our nation's maritime industry is a national problem and any hope in rectifying the problem demands a long-term commitment at the national level. The first step in addressing the problem would be to establish a national sealift policy.

In a 1793 message to the House of Representatives, Thomas Jefferson wrote that "as a branch of industry shipping is valuable, but as a resource of defense essential...."(44:38) This nation must pay heed to Jefferson's warning. One way or another, we must address the availability of adequate strategic sealift. It is clearly pointless to have the best-trained, best-equipped military forces in the world if we cannot transport and support them where and when they are needed. We can act now, while there is still a chance to achieve the necessary results at a reasonable cost, or we can delay even longer until even our current sealift capability has disappeared

CHAPTER IV

CONCLUSIONS

During this century the United States assumed the leadership role of the Free World and learned that the ability to project military power in a timely manner is an essential element of effectiveness in that role.

Wars are won by men who must themselves gain control of objectives of critical value to the enemy; and destroy the will to continue the conflict of the enemy's fighting forces and the enemy's population. If the ability to deploy forces to the far corners of the earth and sustain those forces in combat is the keystone of America's ability to project power and to protect its vital interests, our strategy is greatly dependent on the quantitative and qualitative sufficiency of our strategic lift assets.

There must be linkage between available strategic lift capability and the requirements for that lift which are inherent in planning for any contingency operation. Ideally, strategic lift should be sized to meet contingency objectives. If that is not possible then the operational plan should be adjusted accordingly to compensate for the shortfall in lift capability. Because all plans involve risk, there seems to be a tendency by DoD planners to accept a strategic lift shortfall as a planning risk while continuing to plan for the use of combat forces that simply cannot be deployed in a timely manner

or sustained once in place. Such an irrational approach to contingency planning does not reflect prudent risk...it reflects pure folly!

This paper revealed that today the United States is not capable of deploying its conventional forces to areas of vital interest in the numbers or in the time frame essential for success. Even Operation Just Cause, considered a "small, local, short duration" contingency operation, severely taxed our available strategic airlift assets. During the 1980s we have made moderate strides in improving our airlift and sealift capabilities. Moreover, if our force structure intentions hold true, the next several years will provide additional lift capability for our forces. Yet, if we are at all cognizant of the threats we face during the remainder of this century, it is apparent that the improvements in our strategic lift capability fall far short and are promised too late. Barring outright cancellation, the DoD programs planned for the next few years will only serve as a band-aid to our chronic strategic lift ailment. A quote made almost thirty years ago by General David Shoup, then Commandant of the Marine Corps, is still valid today. "Today we actually have more fight than ferry in the armed forces." (45:987)

As was presented in this paper, there is overwhelming evidence that the strategic lift capability of the United States is not sufficient to meet its global commitments. We must either relook the requirements or develop the necessary

lift capability. The latter promises to be a long and costly task; but if we are going to get our forces where they are needed and sustain them once they are in-place, we need to make strategic lift a high-priority national objective.

Unfortunately, the prognosis for any improvement, especially sealift, of the magnitude required to overcome our capabilities versus requirements disconnect is not encouraging.

Should the nation make the conscious decision to not increase its strategic lift capability, then among the alternatives to consider is one very sobering thought: the United States may, through default, be forced to scale down its global commitments below the threshold of its national interests. There is a cost associated with superpower status and in commanding the leadership role of the Free World. If the United States is to maintain that status and continue in that role then as a nation it must recognize and accept the associated cost...and sufficient strategic lift is part of that cost.

LIST OF REFERENCES

1. Allen, General J.R., USAF. "Airlift for the 80s and Beyond." Defense/83, July 1983, pp. 16-21.
2. Baker, Caleb. "Army Urges Services to Support Air, Sealift Funding." Defense News, 26 March 1990, p. 6.
3. Cameron, Allan W. "Facing Up to America's Strategic Sealift Shortfall." Armed Forces Journal International, July 1989, pp. 70-75.
4. Canan, J.W. "Protecting the Priorities." Air Force Magazine, February 1985, pp. 54-60.
5. _____. "Up from Nifty Nugget." Air Force Magazine, September 1983, pp. 82-88.
6. Carroll, Vice Admiral K.J., USN. "Sealift ... The Achilles Heel of American Mobility." Defense/82, August 1982, pp. 8-13.
7. "Civil Reserve Air Fleet Facts and Figures." Defense Transportation Journal, February 1988, p. 24.
8. Clarke, Richard L. "Flags of Convenience." Defense Transportation Journal, October 1989, pp. 68-72.
9. DeHaven, Lieutenant General O.E., USA. "Strategic Mobility Shortfalls and Solutions." Defense/82, March 1982, pp. 11-15.
10. "Exclusive AFJ Interview with General Duane H. Cassidy, USAF." Armed Forces Journal International, January 1988, pp. 49-53.
11. "Exclusive AFJ Interview with General James R. Allen, USAF." Armed Forces Journal International, July 1982, pp. 50-56.
12. "Exclusive AFJ Interview with Vice Admiral Walter T. Piotti, Jr., USN." Armed Forces Journal International, July 1987, pp. 48-51.
13. "For the Common Defense: Special Report on the FY 85 DoD Budget." Sea Power, March 1984, pp. 15-20.
14. Ganley, M. "DoD Asks 5.9% Real Growth for FY 86." Armed Forces Journal International, March 1985, pp. 54-64.

15. "General Stresses to Panel Need for C-17, Extra Sealift Capability." Defense News, 26 February 1990, p. 7.
16. Gourdin, Major Kent N., USAF. "Can the CRAF Survive Another Year Like 1986?" Defense Transportation Journal, June 1987, pp. 33-35.
17. Holloway, Admiral J.L., USN. "Sealift." U.S. Naval Institute Proceedings, June 1983, pp. 28-37.
18. Holzer, Robert. "Ex-Sealift Head Pushes for Separate Funds." Defense News, 26 March 1990, p. 17.
19. Kesteloot, Robert W. "Deterrence Thru Deployment ... An Appropriate Theme." Defense Transportation Journal, October 1988, p. 50.
20. Kitfield, James. "The Defense Transportation Dilemma." Military Forum, September 1988, pp. 16-24.
21. Kyle, D.M. "Sealift." Armed Forces Journal International, July 1982, pp. 57-60.
22. _____. "New DoD Mobility Study Asks \$18-\$31 Billion to Beef Up Airlift, Preposition More Forces." Armed Forces Journal International, May 1981, pp. 28-34.
23. "Last Chance for U.S. Shipbuilders?" Sea Power, December 1984, pp. 18-31.
24. Margolius, Colonel Benjamin W., USA. "Military Impact Caused by Changes in U.S. Flag Merchant Shipping." Defense Transportation Journal, October 1989, pp. 73-74.
25. Meyer, D.G. "Airlift/Sealift: You Can't Be There Till You Get There!" Armed Forces Journal International, July 1984, pp. 76-91.
26. "Military Sealift Command." Defense Transportation Journal, February 1988, pp. 30-31.
27. "Military Sealift Command." Defense Transportation Journal, February 1990, pp. 35-36.
28. Morrow, Mark E. "Peace Dividend Elusive in FY 91 Defense Budget." Armed Forces Journal International, March 1990, pp. 9-15.

29. _____. "Retiring MAC Chief Still Wanting for National Sealift Policy." Armed Forces Journal International, August 1989, p. 13.
30. Mosemann, L.K. "The Air Force's Solution to the Airlift Shortfall." Defense Management Journal, Second Quarter 1983, pp. 11-14.
31. "Nifty Nugget Mobilization Exercise." Congressional Record, 7 November 1979, pp. S16145-S16149.
32. O'Hara, Major J.G., USA. "Strategic Mobility: We Have a Long Way to Go!" Defense Transportation Journal, August 1981, pp. 27-30.
33. "One on One with General Hansford Johnson, USAF." Defense News, 26 March 1990, p. 39.
34. Patterson, Lieutenant Colonel J. David, USAF. "The C-17 in an Iran Scenario: A Perspective Beyond Sixty Million Ton-Miles per Day." Armed Forces Journal International, January 1988, pp. 42-48.
35. Pilsch, Colonel T.D., USAF. "The Airlift Master Plan: Evolution and Implementation." Defense Management Journal, Fourth Quarter 1984, pp. 25-31.
36. Prince, A.S. "Sealift: A Critical Component of Maritime Superiority." Defense Management Journal, Second Quarter 1983, pp. 4-9.
37. "Rebuild Sealift." Defense News, 12 March 1990, p. 26.
38. Roser, Major S.A., USAF. "To the Front: CRAF Airlift Support." Airlift, Fall 1984, pp. 16-18.
39. Rowden, Vice Admiral W.H., USN. "Sea Control, Power Projection and Sealift." Defense Transportation Journal, June 1984, pp. 10-14.
40. Schemmer, Benjamin F. "Airlift, Sealift in Short Supply at Very Time Need Grows Fastest." Armed Forces Forces International, May 1989, pp. 66-68.
41. Sharkey, W.J. "Airlift, Sealift and Prepositioning: How Are We Doing in These Areas?" Defense Transportation Journal, December 1984, pp. 34-37.
42. Trost, Admiral Carlisle A.H., USN. "SOS." Defense/89, March 1989, pp. 14-16.

43. Truver, Scott C. "Sealift for the Overseas Connection." Armed Forces Journal International, May 1986, pp. 56-59.
44. _____. "Sealift Manning: Critical Period, Critical Choices." Armed Forces Journal International, July 1987, pp. 30-38.
45. U.S. Congress, House Committee on Armed Services. Military Posture Briefings, Washington, D.C., 1961, p. 987.
46. U.S. Department of the Air Force. Air Force Issues Book 1989, Washington, D.C., 1989, pp. 45-51.
47. _____. The United States Air Force Report to the 101st Congress of the United States of America: Fiscal Year 1990, Washington, D.C., 1989, pp. 27-29.
48. U.S. Department of Defense. Annual Report to the Congress: Fiscal Year 1984, Washington, D.C., 1983, pp. 123-125.
49. _____. Annual Report to the Congress: Fiscal Year 1990, Washington, D.C., 1989, pp. 171-175.
50. _____. 1989 Joint Military Net Assessment, Washington, D.C., 1989, pp. 10-3-10-11.
51. "Weapons and Forces." Defense/89, September 1989, p. 41.
52. Welch, Major General J., USAF. "Strategic Mobility: A Tale of Four SecDefs." Armed Forces Journal International, July 1984, pp. 75-77.
53. White, Carl. "A Capacity for Conflict." Sea Power, April 1983, pp. 63-67.