NATO Mobilization and Reinforcement: Can We Get There from Here?

A Monograph
by
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Second Term, AY 89/90

UNCLASSIFIED
SECURITY CLASSIFICATION OF THIS PAGE

REPORT DOCUMENTATION PAGE

Form Approved
OMB No. 0704-0188

1a. REPORT SECURITY CLASSIFICATION UNCLASSIFIED	1b. RESTRICTIVE MARKINGS
2a. SECURITY CLASSIFICATION AUTHORITY	3. DISTRIBUTION/AVAILABILITY OF REPORT APPROVED FOR PUBLIC RELEASE DISTRIBUTION UNLIMITED
2b. DECLASSIFICATION/DOWNGRADING SCHEDULE	
4. PERFORMING ORGANIZATION REPORT NUMBER(S)	5. MONITORING ORGANIZATION REPORT NUMBER(S)
6a. NAME OF PERFORMING ORGANIZATION SCHOOL OF ADVANCED MILITARY STUDIES, USACGSC 6b. OFFICE SYMBOL (If applicable)	7a. NAME OF MONITORING ORGANIZATION
6c. ADDRESS (City, State, and ZIP Code)	7b. ADDRESS (City, State, and ZIP Code)
8a. NAME OF FUNDING/SPONSORING ORGANIZATION 8b. OFFICE SYMBOL (If applicable)	9. PROCUREMENT INSTRUMENT IDENTIFICATION NUMBER
8c. ADDRESS (City, State, and ZIP Code)	10. SOURCE OF FUNDING NUMBERS PROGRAM ELEMENT NO. / PROJECT NO. / TASK NO. / WORK UNIT ACCESSION NO.

11. TITLE (Include Security Classification)

NATO Mobilization and Reinforcement: Can You Get There From Here? (U)

12. PERSONAL AUTHOR(S)
LTC DENNIS G. HEAPY, USA

13a. TYPE OF REPORT	13b. TIME COVERED	14. DATE OF REPORT (Year, Month, Day)	15. PAGE COUNT
MONOGRAPH	FROM _____ TO _____	90/05/30	61

16. SUPPLEMENTARY NOTATION

17. COSATI CODES			18. SUBJECT TERMS (Continue on reverse if necessary and identify by block number)
FIELD	GROUP	SUB-GROUP	

19. ABSTRACT (Continue on reverse if necessary and identify by block number)

SEE ATTACHED

20. DISTRIBUTION/AVAILABILITY OF ABSTRACT XX UNCLASSIFIED/UNLIMITED ☐ SAME AS RPT. ☐ DTIC USERS	21. ABSTRACT SECURITY CLASSIFICATION UNCLASSIFIED
22a. NAME OF RESPONSIBLE INDIVIDUAL LTC DENNIS G. HEAPY, USA	22b. TELEPHONE (Include Area Code) (913) 684-3437/2138 22c. OFFICE SYMBOL ATZL-SWV

DD Form 1473, JUN 86 Previous editions are obsolete. SECURITY CLASSIFICATION OF THIS PAGE

ABSTRACT

NATO MOBILIZATION AND REINFORCEMENT....
"CAN WE GET THERE FROM HERE?"
by
LTC (P) Dennis G. Heapy, USA, 44 Pages

"Since 1978, the United States has been committed to the reinforcement of NATO, within ten days of a decision to do so, with six additional Army divisions, sixty additional tactical squadrons, and one Marine Expeditionary Brigade (MEB), plus supporting units for all of these forces."[1] To meet this schedule, we must preposition the majority of the equipment for these units in Europe, together with the munitions and supplies needed to sustain operations until sea lines of communication can be established. Once the initial deployment is complete, U.S. sea and airlift, augmented by allied ships and aircraft, would deploy follow-on forces, as well as the majority of the materiel needed to sustain and win the conflict.

This monograph examines our current commitment to NATO and the associated requirements and capabilities necessary to meet this commitment. This study also takes into account the possible impacts of ongoing force reduction negotiations as they relate to U.S. strategic mobility. Although the 'quantifiable' aspects of mobility are critical to this study, this study is not intended as purely a 'bean counting' exercise comparing requirements with strategic lift assets. From both the historical and contemporary perspectives, strategic mobility is evaluated with regard to national will; economic and political constraints; the threat assessment; industrial mobilization; command and control; and current mobilization initiatives, strengths, and shortfalls.

In spite of a conflicting data base for determining mobilization and reinforcement requirements and capabilities; an aging fleet of sealift vessels; and a NATO mobilization and transportation infrastructure that is layered, redundant, and cumbersome; this monograph concludes that we can get there from here. The United States' "Ten In Ten" commitment to NATO is achievable considering the number of military and civilian ships and aircraft that are available from the United States and the NATO member countries. The question of sustainment beyond the initial mobilization surge is clearly an issue that warrants concern within the NATO alliance.

In summary, the most critical element of the NATO reinforcement dilemma is not the number of ships and aircraft that make up our collective strategic lift inventory; the real concern is an ability and willingness to make a political decision to mobilize and reinforce the alliance. Without this decision, a sea full of fast ships and a sky full of the most modern aircraft will not get us there.

ADVANCED OPERATIONAL STUDIES FELLOWSHIP

MONOGRAPH APPROVAL

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Title of Monograph: NATO Mobilization and Reinforcement: Can We Get There from Here?

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Accepted this 7th day of June 1990

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INTRODUCTION

> The parties agree that an armed attack against one or more of them in Europe or North America shall be considered an attack against them all.[2]
>
> Article 4 of the North Atlantic Treaty

As a partner in the defense of freedom in Europe through two world wars, the United States has found itself deeply involved in European security in the post-war period from 1945 to the present day. Initially, the links with the Europeans were strong and easily accepted on both sides of the Atlantic. Europe was economically weak and the enormous economic and industrial strength of the United States gave the Europeans hope for the future. Gradually, the nations of Europe recovered and now, with their economies well established, they are displaying a degree of independence which is perhaps challenging the linkage we have established as the cornerstone for the NATO alliance.

As time and recent events in Eastern Europe separate us further from the experiences and lessons of World War II, both Europeans and North Americans question the involvement of the United States in the defense of Europe. While the majority of those in government recognize the vital role played by the United States, this does not stop much of the wide-ranging discussion and debate on the issue of the United States commitment to NATO, the associated cost in a time of economic

'penny pinching', and our obligation and reinforcement capabilities in the face of a perceived decreasing Soviet threat.

The North Atlantic Treaty Organization is, in some American eyes, just another of our worldwide commitments, albeit a most significant one. If one examines some of the differences in perception of the threat from both sides of the Atlantic, there is a strong body of opinion in the United States and Canada that feels comfortable with the present requirement to reinforce NATO as presumed by Article 4. The attitude of the group is that if war with the Soviet Union is inevitable, then it is better to fight over someone else's country than at home.

Recognizing the uncertainty that is unfolding throughout Europe and the Soviet Union today and the implications this places on NATO's mobilization plans, the thrust of this paper will focus on today's perceived threat and our current commitment to mobilize and reinforce NATO. Our strategic concept of deterrence through flexible response and forward defense highlights the essential element of this study: the requirement and capability to rapidly reinforce and sustain combat operations in the NATO theater. The U. S. strategy of deterrence requires a U.S. capability of force projection using a triad of strategic mobility elements called sealift, airlift, and the prepositioning of equipment.

As witnessed by more than 45 years of peace in Europe, deterrence has worked by convincing potential adversaries that forward defense and the willingness and capability to mobilize are the underlying strengths of the NATO alliance. Accordingly,

the questions of mobilization and reinforcement remain the critical concerns with regard to future NATO contingencies. In order to successfully deploy and sustain military combat power in NATO, some experts contend that the U.S. does not possess the air and sealift capability to meet current commitments, nor the capacity to surge the U.S. industrial and commercial base in the event of a protracted war in Europe. This argument gains further strength when the U.S. is conceivably confronted with a multi-front conflict as witnessed in World War II.

Beyond the simple questions of requirements and capabilities (aircraft and ships), one must also look at the political decision to mobilize, the wartime/peacetime command and control structure, the capacity and capability to accept hundreds of aircraft and ships within the NATO theater, the current readiness posture of our sea and airlift fleets, and the associated personnel infrastructure. In order to meet our commitment to NATO, one must ask if the United States is willing to continue spending tremendous amounts of tax dollars in order to maintain and modernize our mobilization assets? Is there a perception that the Soviet threat no longer exists and the risk of war in Europe does not warrant defense spending as we have known it? Perhaps the real question is one that focuses on our national interests: Is the reinforcement of NATO within our best interests and can the U.S. continue to pay the bill for this commitment? These are the questions we must answer in order to effectively determine if we can get there from here.

In order to thoroughly evaluate our capability to meet our strategic NATO commitments, one should understand the national will and the associated risks that our nation must consider in conjunction with the pure math of calculating requirements and lift resources.

With regard to our current commitment to reinforce NATO and in an effort to answer the question: "Can we get there from here," it may be appropriate to start with some historical lessons.

HISTORICAL CONSIDERATIONS

> With 2,000 years of examples behind us we have no excuse when fighting, for not fighting well.[3]
>
> T. E. Lawrence

As characterized by T. E. Lawrence, history can teach us many lessons if we are prepared to learn. Experience bought by the efforts of our forefathers can be used to our advantage if we take the time and trouble to acquire the relevant and essential information.

Possibly no other subject associated with warfare bears closer historical examination than that of logistics. In its broadest sense, logistics may be considered as the art of delivering the fighting force to the correct location, at the appropriate time, and then sustaining it for as long as required. The side which proves to be the most efficient at delivering and sustaining its forces has generally, as history shows, tended to be the victor.

This study examines one particular aspect of logistics, the field of transportation and mobilization and those facets of logistical planning with which they are closely associated. From a historical standpoint, the vital role that transportation and mobilization have played, stands out throughout the history of warfare. Conversely, the failure to understand their importance has had far-reaching effects on the outcome of battle. Almost without exception, this nation's ability to get to the battle-field has been its 'achilles heel.'

At the beginning of WWI, American cargo was left stranded on piers for lack of transport, and we were charged exorbitant fees by foreign ship operators to carry United States soldiers to Europe to fight for the Allied cause. We could not build merchant ships quickly enough to serve, and the remains of many of the hundreds of emergency built merchant ships delivered too late for service in the "Great War", still litter the mud flats of the lower Potomac River, in mute testimony to the folly and the cost of failing to sustain in peace, the assets required to defend freedom in time of war.[4] The historical record shows that during WWI most of the 3,200 ships ordered were not delivered until after the war ended.[5]

In spite of several years of warning (prior to WWII) and a national mobilization effort to logistically support Great Britain, France, and Russia prior to our official declaration of war, the United States clearly felt the constraints of inadequate lift capabilities. The WWII maritime 'surge' actually began in 1936 with the Merchant Marine Act. From 1936 to 1941, the number of U.S. shipyards doubled, and the number of yardworkers increased tenfold.[6] The ships produced during those periods of conflict, incidentally, were significantly smaller and much less complex than those required today.

The U.S. airlift capability during WWII might be considered the one bright spot of our pre-war mobilization effort. The president of U.S. Air Transport Association, Edgar Gorrell had become convinced that war was imminent.[7] As such, he called

a meeting of airline chiefs and goaded them into coming up with a plan for pooling resources and know-how, and for putting planes, shops, pilots, technicians, and operations executives in readiness to enter government service overnight. The production lines were ready and the aviation industry was effectively mobilized when the Japanese attacked Pearl Harbor. In spite of this foresight, the bulk of this industrial surge was focused on fighter aircraft rather than the much needed cargo and troop carriers.

During the Korean War, an average of 400 cargo ships were employed to sustain the initial deployment.[8] This represented approximately 17 percent of the available 2,422 dry cargo ships in the U.S. military and civilian inventory.[9] In Vietnam, during the peak sealift year of 1968, The Military Sealift Command fleet averaged 420 ships, or 35 percent of the total U.S. inventory.

The bottom line is that during the Korean Conflict in 1953, we had more than 2,400 dry cargo ships available. During Vietnam, 15 years later, we had less than half that number; about 1,200 militarily useful dry cargo ships. Today, we can count on only about 430 ships.[10]

As previously mentioned, the U.S. mobilization concept in support of NATO is based on the 'triad' of sealift, airlift, and prepositioned equipment. My historical focus on sealift reinforces what is generally accepted as "the bedrock of our national mobilization strategy...our maritime capability."[11] Mobilization studies repeatedly confirm that more than 90 percent of

equipment and supplies needed to sustain a war effort must be carried by ship. This basic fact has been demonstrated on numerous occasions during the last 45 years--from the U.S. convoy and supply operations that were essential to victory in WWII, during both Korea and Vietnam; to the 8,000 mile sealift that ensured British success in the 1982 Falklands conflict.

Accepting the critical significance of sealift with regard to mobilization and reinforcement to NATO should not allow planners to quickly discount the contribution of airlift and prepositioning. The lessons of history, coupled with a vision of the enemy's mobilization capability, provide ample warning that our commitment to NATO can only be met by the full complement of our strategic deployment triad...sealift, airlift, and prepositioning.

THE COMMITMENT TO NATO

As articulated by Article 4 of the North Atlantic Treaty Organization, the United States is clearly linked to the protection of Western Europe, the Atlantic and the upper half of the North American continent. This military strategic linkage to NATO, in spite of 'perestroika,' 'glasnost,' on-going force reduction talks, and our treaties and agreements with 43 other global nations, remains our most critical military priority.

Although stated in a variety of ways, the basic military strategy of the United States is deterrence. The fundamental elements of this strategy are: strong alliances; forward-deployed forces; a strong central reserve; freedom of the seas, air, and space; effective command and control; timely and accurate intelligence; and force mobility.[12] The application of this strategy is through 'flexible response' and 'forward defense.'

With regard to NATO, a key element of our 'flexible response' is rapid reinforcement. More specifically, within the space of ten days, the United States is committed to deploy a total of ten Army divisions (of which four, plus two armored cavalry regiments, are stationed in Europe in peacetime), sixty reinforcing tactical fighter squadrons, and one Marine Expeditionary Brigade (MEB), plus support detachments for all of these forces.[13]

In addition to our four plus divisions stationed in NATO, there are fifteen Army and Marine divisions located in the

continental United States. If they, and other forces that may be raised, are to be a part of our mobilized forward defense, they and most of their equipment must be transported overseas and sustained with vital supplies and personnel. As stated by President Ronald Reagan...

> The ability to reinforce and resupply forward deployed forces is essential to the execution of the U.S. strategy of forward defense and alliance solidarity. Rapid reinforcement of NATO during times of tension is critical to effective deterrence.
>
> Our global support and mobility capabilities, including airlift, sealift, and prepositioning are therefore essential. Prepositioning ashore or at sea can sharply reduce our response time. Airlift, the quickest and most flexible of our mobility assets, would deliver initial reinforcements; but sealift will inevitably carry the bulk of our reinforcement and resupply material as it has in past crises.[14]

Recognizing the past and current U.S. commitment to NATO, the question of future reinforcements and linkage to NATO appears valid. The rapidly changing face of Europe and what some might label the collapse of the Warsaw Pact, create doubts as to future U.S. interests in Europe and our national will to reinforce or even forward deploy our military forces. Growing arguments indicate that Europe can assure its own defense.[15] With a larger combined population than the United States, a combined gross national product nearly equal to that of the United States, an industrial base superior to that of the Soviet Union, a geographic depth that Japan lacks, and its growing nuclear arsenal, Europe would seem to have the means

to assure its own defense with minimal assistance from the United States.

In spite of NATO's ability to deter war in Europe for the past 45 years, some feel that if conflict did occur, no military decision is attainable even with U.S. mobilization and reinforcement. The goal of NATO is simply to restore the "status quo ante."[16] Neither European nor Canadian NATO members intend to launch the counteroffensive that would be necessary to defeat the Soviet Union. To make certain of that, NATO Europe and Canada have deliberately denied themselves the logistical establishment and the war reserve stocks necessary to mount a counteroffensive.[17] On a conventional basis, the Soviets are assured, therefore, that no matter what the success or failure of an attack on NATO, their own sphere is secure. That is exactly the situation North Vietnam was accorded during the Vietnam War, and it is the situation the United States granted to North Korea during the latter phase of the Korean War.

When evaluating our ability and willingness to meet current mobilization and reinforcement requirements, one must consider both the historical nature of past commitments, as well as, the cost of sustaining and improving future mobilization capabilities. In light of recent events in Europe and the associated perception of a reduced Soviet threat, the cost to U.S. taxpayers may become the overriding factor in determining our future commitment to NATO.

As stated, this study is primarily concerned with mobilization and reinforcement. However, it would appear, when

evaluating 'burden sharing,' that not only are mobilization and reinforcement assets neglected in the structure of national forces, but that in some cases the strength of NATO combat forces are below par when related to population, size of labor force and national economic resources.

The figures given in Appendix A, reveal many anomalies. If a comparison is made of the per capita expenditure, then Canada, with a population of over 25 million, is marginally ahead of Luxembourg, which places last in expenditure. By the same token, expenditure by Belgium and The Netherlands seems to be low by comparison with that of France or Germany.

The extremely high contribution made by the United States is very clearly shown, as is, the somewhat lowly position of several of the very vocal and economically stable NATO charter members. Economists can justify the position of nations in the tables of expenditures and give all kinds of reasons for low levels of expenditures. In spite of economic arguments, what is too often ignored is the inescapable fact that adequate national and alliance defense forces are essential in today's world. This willingness to shoulder the economic burden may be the real indicator of national 'will' and the yardstick for measuring the strength of the NATO alliance.

Although restricted by the length of this monograph, it would be possible to show that inadequate reserve forces are allocated or trained to accept the bulk of the U.S. forces currently planned for the reinforcement of NATO. The shallowness of this intra-theater support structure is clearly evidenced

the predetermined air and seaports, for road and rail movements and for soldier sustainment.

Budgeting for defense is a subject on which people express opinions with great conviction. There are those who hold the view that not enough is spent on national security and those who maintain that expenditure is too high when all other needs are taken into account.[18] In light of events unfolding in Europe during the past year, the 'peace dividend' is already being reapportioned by NATO members for domestic programs.

No matter how hard the Europeans are pressured by the United States, there has been and continues to be a resistance, forced on them by national political forces, to restrict their defense expenditures to minimal levels. According to General Bernard Rogers, former SACEUR: "We have mortgaged the defense of NATO to a nuclear response because nations have not been prepared to pay the cost of credible conventional forces."[19] This mortgage may also include our mobilization and reinforcement strategic lift resources. The implication being, the SACEUR's Rapid Reinforcement Plan (RRP) simply may not work if European nations are unwilling and unable to make up the large elements of intra-theater support required.

Clearly, any move to reduce significantly the levels of United States forces in Europe would put the current Rapid Reinforcement Plan in question. A dramatic change to current U.S. policy and the associated mobilization and reinforcement concept would have a most serious effect on NATO planning and on the attitudes of European nations.

History clearly shows that a nation's commitment to achieving victory and protecting its national interests is an expensive venture. This expense is realized in a nation's willingness to provide sufficient supplies, equipment and personnel in order to accomplish the desired or preferred objectives and end states. The current U.S. commitment to reinforce NATO is a classic case in point, exemplifying the expense associate with a nation's national interest.

There is little doubt that the current 'Ten In Ten' commitment to NATO is influenced by economics and both the reality and perception of a 'fair share' coalition effort. It is this concept of burden sharing that may in fact weaken our future commitment to NATO. The current and future cost for mobilization and reinforcement may exceed what the U.S. and other NATO members consider to be in their separate and collective national interests.

This review of national defense expenditure and the pressures on defense spending in peacetime, does not give much comfort to those responsible for sustaining and enhancing the mobilization and reinforcement commitment to NATO. Added to this conflict between national defense and expenditure levels is the uncertainty regarding the Soviet threat and the level of risk NATO is willing to accept.

Before this study takes on the primary issues of requirements and mobilization capabilities, some ground work must be laid regarding the current threat and the elements that make up the risk assessment.

THE THREAT ASSESSMENT

> Soviet Planners stressed that strategic deployment and preparations must in all cases be founded on speed, secrecy and deception, and aimed at seizing the strategic initiative through forestalling or overtaking enemy mobilization, deployment and combat actions.
>
> Voroshilov General Staff Academy[20]

'Infatuation' seems like a most unlikely way to describe how western societies might relate to the current leader of the Soviet Union, but one would be hard pressed to argue the point. As the 1989 Time Magazine "Man of the Year," who was greeted with open arms on the streets of NATO countries, Mr. Gorbachev is clearly the man of the hour!

Almost without exception, western leaders are avoiding any criticism of Soviet actions and the key phrase seems to be: "I hope Mr. Gorbachev succeeds." Unfortunately, the euphoria associated with Gorbachev's proposals has been based on 'intentions', unmatched by the reality of actual troop or equipment reductions along NATO's borders.

By contrast, it is the Soviet 'capabilities' that lend themselves to this study of mobilization and reinforcement to NATO. It is in fact, the 'capabilities' of the Soviet Union that bring into question our past and future mobilization efforts with regard to NATO.

A solid argument could be postulated that current CFE negotiations are intended to make war "more difficult" in

Europe. Equally important is the argument that post-CFE antagonism or conflict may result in a race to see which side can mobilize quicker. It is this question of mobilization capability that I contend is the cornerstone of the threat assessment.

Possibly the greatest underlying fear, shared by Soviet generals and politicans alike is that of being caught off-guard, unprepared, and vulnerable to an aggressor.[21] Here, the lessons of the past play a very real part Soviet military planning and doctrine. With the loss of some 8 million dead in WWI and an estimated 22 million dead as a result of WWII, it is little wonder, therefore, that preparedness and the importance of achieving surprise, both tactically and strategically, play such an important part in Soviet thinking.[22] This shift in Soviet doctrine and preparedness was witnessed at the end of WWII. Soviet industrial mobilization and the capability to move large forces in a short period of time became a dominant and threatening feature of Soviet doctrine and the focus of their military strategy.

Beginning in the early postwar years, these lessons were set out in detail and focused on both the need for speed in mobilizing and deploying forces and the requirement for continuous force generation and movement throughout the duration of a conflict.[23] This concept came to "comprise a single inseparable process" captured by the term "mobilization deployment."[24] Integral to the whole process is a quick reaction mobilization system that draws on the Soviet Union's large reserve military manpower base and earmarked transport vehicles and equipment

from the national economy.[25] This process of quick reaction and mobilization continued to be refined well after the conclusion of WWII.

Beginning in the 1970's, the element of Soviet Strategic deployment termed "preparing theaters of military action" received new attention. This process, which continues today, is centered mainly on prepositioning large stockpiles of ammunition, POL, and other supplies in forward theater areas. This program also includes improving the road, rail, air, and water transportation links and facilities essential for the movement of military units and material; prestocking lines-of-communication repair and construction materials; and preparing and stocking hospitals, repair facilities, and hardened command posts.

While not minimizing the potential problems involved, Soviet planners judge that even in a period of threat preceding war, Soviet transport resources could reestablish sizable combat forces in the forward area, in a short period of time. This would be possible through a combination of covert and overt means.

Strategic heavy lift transporter units would be particularly important in this regard and their present capability serves to illustrate this. That is, if approximately two-thirds of the 3,500 heavy equipment transporters now assigned to strategic transporter regiments were assigned to support the Western Theater of Strategic Military Action (TSMA) or that area opposing AFCENT, any of the following force packages could be moved from the western Soviet Union to East Germany in 72 hours or less:[26]

- o More than 50 tank or BMP equipped motorized rifle battalions.
- o Ten tank regiments or 10 BMP equipped motorized rifle regiments.
- o Two or three tank or motorized rifle divisions.
- o One or two "new army corps" plus some 20 tank or motorized rifle battalions.
- o Tens of thousands of metric tons of bulk supplies, such as ammunition, POL, and so forth.

The prospect of a limited or perhaps sweeping reorganization of Soviet maneuver units may focus Soviet attention further on small unit reinforcement options such as those indicated above. Some evidence suggests that this Soviet force restructuring is already underway. Given the extreme difficulty in both detection and interdiction of this means of strategic transport, the substantial speed and flexibility it provides may receive even more attention in post-CFE Europe. In the near term, ongoing Soviet technological efforts may further enhance this capability to transport heavy cargo.[27]

In spite of the shorter deployment distance for the Soviet Union, a significant effort has been applied to both airlift and sealift resources. As a result, the USSR's long range military airlift capability has almost doubled since 1980.[28] Aeroflot Airlines, the national airline of the Soviet Union, has for some time utilized their commercial air fleet for both military and civilian purposes. Their counterparts to the C-141 and C-5B are operated by Aeroflot and routinely used for military and civilian missions. In essence, the Soviet Union has "nationalized" their

airlift capability and does not require congressional or presidential approval to transition for mobilization. Other than the inability to conduct in-flight refueling, the Soviet strategic airlift capability can be described as modern, militarily compatible and numerous!

Although not capable of operating effectively outside the coverage of land-based air support, the Soviet maritime fleet is capable of delivering and sustaining overwhelming force to the periphery of the Soviet Union.[29] It is important to note that while the U.S. merchant fleet has declined in the last 50 years, the Soviet merchant fleet has enjoyed an unprecedented expansion.[30] In 1965, it had 1,345 oceangoing merchant ships. Today, it has nearly 2,500 and ranks second in the world; the United States has fallen to tenth in ship numbers.[31]

As pointed out earlier, "I hope Mr. Gorbachev succeeds...as long as success is based on peace." In spite of promises and indications of troop reductions, the Soviet 'capability' remains massive with regard to mobilization. The U.S. and NATO assessment of Soviet threat must be a key factor in determining our ability to mobilize and reinforce NATO.

Based on the information provided in this study and the reader's own judgements, perhaps the following references will help you draw your own conclusions on CFE negotiations, the NATO/Warsaw Pact balance of power, and where we need to focus our mobilization efforts during the 1990's.

> Readiness is a measure of a forces ability to fight with little or no warning. It

remains our highest defense priority. We cannot base our preparedness on estimates of potential adversaries' intentions, as they could change quickly. Rather, we must be prepared to defend against those forces' most formidable capabilities.

Secretary of Defense
Annual Report to the
Congress
FY 1990

One of the most important means of combat support is Maskirovka. Its goal is to lure the adversary into confusion regarding the true intentions of force operations in the theater, and the main directions of their mission execution...

Admiral Chernavin[32]

THE REQUIREMENT

> Generally, operations of war require one thousand fast four-horse chariots, one thousand four-horse wagons covered in leather, and one hundred thousand troops in mail.[33]
>
> Sun Tzu

Forecasting the requirements to support wartime objectives today is not as simple as it appears to have been in the days of Sun Tzu. The modern mobilization planning and execution process is highly complex and generally not well understood or adequately practiced. It is generally agreed that mobilization requirements should act as a road map for industrial preparedness planning, which in turn should guide national security planning.[34] However, if requirements exceed the expected industrial production, policy makers need to consider adjusting the political or the military objectives, or allocating resources to improve the capacity of the industrial base. Alternatively, they must accept a high risk of failure and the consequences to the nation that such a failure implies.

Although credible lift requirements are vital to the mobilization planning process, arriving at an agreed upon definition of 'credible' is an exercise that has historically been difficult. The nation's peacetime industrial and mobilization preparedness planning attempts to establish and maintain a strong capability base, with enough 'surge' flexibility to meet mobilization needs until industry gears up to a wartime

production.

The reality of modern industrial mobilization planning is far from ideal and some would say it is seriously flawed.[35] The flaws in the current process fall into three general categories: inconsistency in determining requirements; use of a questionable planning baseline; and failure to adequately disseminate requirements data.

As previously stated, determining the 'requirements' may be the most significant weakness in our mobilization and reinforcement planning process. From 1937 to 1982, there were at least 17 major merchant marine and sealift studies conducted by specially appointed commissions or federal agencies.[36]

Beginning in 1983, the Department of Defense and other federal agencies engaged in numerous studies of strategic sea and airlift, merchant marine manning, and shipbuilding, in order to ascertain defense requirements and formulate the basis for initiatives in the area of strategic mobility. Most recently, the Revised Inter-theater Mobility Study (RIMS), is being conducted in order to update previous studies!

The complexities of forecasting requirements are compounded by attempting to arrive at an agreed upon definition of mobilization. As defined at Appendix B, the following levels of mobilization must be considered when determining requirements and capabilities: Partial, Full, and Total Mobilization. Two additional levels of mobilization are recognized by the Army: Presidential call-up of 200,000 selected reservists and selective mobilization.[37] In spite of several references to both terms

and a recurring statement that there was little confusion evidenced by their usage, a clear definition of either term could not be found.

Adding to the difficulty of determining mobilization requirements, the terms described above are further broken down into key subelements. These subelements clearly impact on determining mobility requirements, yet they also lack clarity and concensus in their exact meaning. These subelements include: current force, force expansion, industrial surge, industrial expansion, coalition warfare, crisis support, and crisis preparation.

In addition to a lack of clarity in defining mobilization terms, a debate has raged within the mobilization community over how best to plan for bringing the industrial might of the United States to a wartime footing. When attempting to determine mobilization and reinforcement requirements for NATO, planners concern themselves with the question of whether to measure wartime requirements or industrial capability. In the final analysis, it would seem that an effective planning system must compare the requirements to conduct war against the capability of industry to provide needed material. The result of the comparison defines the shortfall that becomes the basis for follow-on planning.

Regardless of the method for determining requirements, the real concern should be to initiate action that balances the two concepts. If action is delayed until war is imminent, little can be done to quickly influence production capacity.

With regard to mobilization, the military's formal tally of its material requirements can fluctuate rather wildly from year to year. This fluctuation is due to changing force structures, modernized weapon systems, changes to combat doctrine, changes to political/military obligations, and conceptual changes in war reserve assets.

Many in the Department of Defense agree with the observation that the Army's present war reserve requirements determination system for ammunition, equipment, and fuel has evolved into a complex, unresponsive, and misunderstood process that produces large requirements which are not fully understood by all.[38] As an example, the combat loss rates and the consumption rates which evolve from this complex system are used to support the Industrial Preparedness Planning (IPP) baseline, as well as, the baseline for mobilization planning. As an example, the Engineer Studies Center (ESC), Ft. Belvoir, Virginia, has found that much of the Army's source data lack validation, standardization, or automation.[39] Further, the ESC claims that no baseline data exist to plan force expansion requirements. The absence or inaccessibility of such crucial data make accurate computation for mobilization planning questionable or perhaps impossible.

Linked to this apparent lack of accurate mobilization data is the factor of an annual budget cycle which is constantly being reviewed and modified. As a result, air and sealift capabilities; prepositioning; the associated personnel; and command and control infrastructures, tend not to be in concert with long term U.S. and NATO strategy. Provided at Appendix C is a historical

synopsis of key references and efforts that depict the problem regarding requirements development and mobilization planning.

In spite of the lack of an agreed upon requirements base, gross estimates are available which permit some insight into the mobilization and reinforcement requirements for NATO. For the purpose of this study, these estimates do provide sufficient data in order to compare requirements and capabilities.

A recent study by General Andrew J. Goodpaster, USA, Retired, estimated a requirement to sealift some 8.5 million tons of dry cargo and 15 million tons of petroleum, oil, and lubricants (POL) in the first 180 days of fighting in the NATO Theater. This would require approximately 1,000 ships. With the current inventory of available ships for dry cargo, each vessel would be responsible for delivering almost 9,500 tons of weapons, equipment, ammunition, and spare parts. In gross terms, this means that 8.5 million tons of dry cargo would be needed to support the estimated 1.5 million reinforcement personnel.

Recognizing that individual soldiers and their associated equipment vary widely, we can generalize and say that, in aggregate, each person sent in reinforcement represents 5.6 tons of cargo. Admittedly, defining the number of ships or aircraft required for reinforcement is more complicated than a simple equation of numbers of persons and tons of cargo. It is realistic, however, to anticipate an increased lift requirement if we add to the current number of American and Canadian troops to be mobilized for NATO's reinforcement. Using the numbers above it can be estimated that one ship must provide

sealift support for 1,700 persons (1.5 million men/900 ships). Possible? Most mobilization planners contend that this is wishful thinking.

Will the post-CFE lift requirement be different from the current requirement? The FY 1990 Annual Report to the Congress reports that 323,000 U.S. ground and air force personnel were stationed in Europe at the end of September 1988.[40] President Bush's original proposal for troop reductions in Europe would have left about 275,000 ground and air force personnel for the U.S. and Soviet Union in the Atlantic to the Urals (ATTU) region. He further stated all of the reduced equipment would be destroyed."[41]

Assuming that while some equipment will be destroyed, a significant quantity will be withdrawn outside of the ATTU region. In the event of future hostilities and a decision to mobilize and redeploy withdrawn equipment, the U.S. has a problem. Under President Bush' proposal, the U.S. would require approximately 28 additional ships to redeploy unit equipment from North America to Europe.[42] Subsequent troop and equipment reduction proposals suggest that 'parity' should be the goal, with each side reducing to 50 percent of current NATO/Warsaw Pact strength. If half of the roughly 328,000 North American forces in Europe withdrew with the intent of redeploying at mobilization, the U.S. would require approximately 193 additional ships to reinforce Europe. This would represent a 48 percent increase over the current stated requirement.

Unlike the Soviets, who could swiftly bring their forces and equipment back into play, the success of NATO's reinforcement is clearly dependent on fast sealift. As Secretary General of NATO Manfred Woerner has stated: "Use of the ocean is not an option for NATO; it is a necessity."[43]

Another method of determining lift requirements and one that is most frequently used, is to look at specific unit configurations. The U.S. Army Military Traffic Management Command (MTMC) estimates that 22 to 26 vessels (large intermodal carriers) would be required to deploy the Army's mechanized and armored divisions respectively.[44] The 101st Airborne Division would require slightly more than ten ships, the 82nd Airborne Division would require slightly more than seven ships and the light division requires slightly more than five vessels. A five division mix of one mechanized, one armored, one air assault, one airborne, and one light infantry Division would require approximately 71 vessels.[45] The required corps support slice and immediate resupply requirements must be added, raising the total to well over 75 ships for the <u>initial</u> one time lift requirement.[46] These estimates, unfortunately, assume that modern port facilities would be available on both sides of the Atlantic.

So far, the focus on mobilization requirements has been keyed primarily to sealift. As previously stated, the bulk of initial and follow-on reinforcement to Europe will require sealift resources. At the same time, the utility of airlift cannot be overlooked. As one might expect, airlift does provide the distinct advantage of fast and flexible mobilization capabi-

lities. Although limited in volume when compared to sealift capacity, rapid reinforcement by air may provide a sufficient 'show of force' and a powerful display of national will to preclude further escalation and the need for follow-on mobilization. The U.S. Air Force Airlift Master Plan (AMP) provides the basis for long-range planning to manage and employ airlift assets to support our military strategy. The plan is intended to define an airlift structure that balances validated requirements, operating costs, manpower, force stabilization, and force modernization. The AMP focuses on the need to eliminate airlift shortfalls and modernize airlift forces.

In 1981, the Congressionally Mandated Mobility Study (CMMS) recommended, and the DOD Defense Guidance was updated to reflect, 66 million ton-miles per day (MTM/D) as a fiscally attainable strategic airlift goal.[47] Accordingly, the U.S. currently has the funded capability to project forty-six MTM/D and the AMP has a modernization and acquisition program geared to reach the sixty-six MTM/D goal by the year 2000.[48] Achieving this goal does not imply that the nation's airlift requirements will have been totally satisfied. Sixty-six MTM/D is an interim objective dictated by fiscal realities. The actual requirement is significantly higher, a fact that is supported by the results of the CMMS and the recent JCS Revised Intertheater Mobility Study (RIMS). Initial indications of RIMS point out that airlift capability may need to increase by 100 percent. Before moving on to the subject of mobilization 'capabilities,' the final element of the mobilization triad, 'prepositioning'

warrants some discussion.

After the 1961 Berlin Crisis, the Joint Chiefs of Staff took action to preposition equipment for two divisions in Europe. This equipment was intended to increase the speed at which 7th U.S. Army could be reinforced by units from the United States and to decrease the need for transportation resources. This equipment, officially identified as POMCUS (prepositioned material configured in unit sets) is currently stored in Germany, Belgium, the Netherlands, and in England.

According to the FY 1990 Annual Report to the Congress, POMCUS for the Army has increased from 200,000 to nearly 500,000 tons of material during the past five to eight years. Depending on which source one might reference, this represents five to six division sets. Prepositioning for Air Force units is about 80 percent funded and 50 percent in place. Prepositioning for the Marine Expeditionary Brigade (MEB) in Norway is almost complete. However, unlike the prepositioned stocks in Europe, which are full divisional sets, the MEB material consists mostly of trucks and howitzers. Its helicopters, fixed-wing aircraft, tanks, and other heavy support equipment must still come from the United States.[49]

In summary, the FY 1990 Annual Report to the Congress identifies the following mobility objectives (requirements) for the European theater:

- Sixty-six million ton-miles-per-day (MTM/D) of cargo airlift.

- o Sealift for one million tons of non-containerizable unit equipment.
- o Prepositioning in Europe of the equipment required by most of the forces to be deployed in the first ten days of conflict.
- o Prepositioning afloat of equipment and supplies for three Marine Expeditionary Brigades.

These rather broadly defined objectives reinforce the complexity of determining the mobilization and reinforcement requirements. As pointed out in the following chapter, a questionable requirements data base makes it difficult to assess and determine our NATO mobilization and reinforcement capability.

THE CAPABILITY

> To be prepared for war is one of the most effectual means of preserving peace.[50]
>
> George Washington, First Annual Address to the Congress, 8 January 1790

Preparations for war or perhaps lesser contingency levels in NATO, clearly bring together the elements of historical awareness, political resolve and the need to identify the correct mobilization requirements. The final ingredients in the mobilization equation are command and control and a clear understanding of the strategic lift 'capabilities.'

For the purpose of this study, capabilities go beyond the mere number of ships and aircraft. Capabilities must also take into account the mobilization infrastructure (command and control); shipyards; maritime personnel; the military related industrial base; and perhaps most important: a common basis of where we need to go in order to sustain and enhance mobilization resources.

As previously discussed, attempting to quantify the NATO mobilization 'requirements' leads one to a variety of answers. Far more complex is the effort to quantify mobilization 'capabilities.' As one might expect, the subject has been examined and measured from every possible direction, under a variety of criteria and with both partisan and supposedly non-partisan objectivity. In an effort to sort through the

various slants that available studies might take, I have selected the most current data, from those studies which are focused on overall national defense strategy and NATO reinforcement.

SEALIFT

Strategic sealift support for a NATO contingency can be generally grouped into three broad categories -- prepositioned afloat, surge, and resupply. Military equipment, loaded aboard ships and prepositioned near a contingency area, can be rapidly delivered to forces airlifted into the theater of operations. Surge shipping lifts the bulk of the continental United States based equipment and initial sustaining supplies. Resupply shipping immediately follows to meet daily consumption rates and to build up reserve stock levels.

During a national emergency, to include NATO reinforcement, the first sealift assets readied for employment would most likely be the Common User Fleet under the control of the Military Sealift Command (MSC). These vessels, in peacetime, are under long term charter with commercial ocean shipping companies. Their availability during contingencies depends upon their current peacetime location. As an example, an MSC Common User Fleet ship laden with cargo and steaming in the South Atlantic (to or from CONUS) would not be available at a loading port for several days and possibly several weeks.

The next category of sealift vessels is the Fast Sealift Ships. These vessels, SL-7's, were originally built for commercial use as high speed container ships. They were subsequently laid up as being uneconomical to operate due to

their enormous fuel consumption. They were bought by the Department of Defense in the 1981-1982 time period under the Navy's Sealift Enhancement Program.[51] These ships have all been modified to provide roll-on roll-off (RORO) capability, additional lift, and helicopter handling and storage facilities.

At 33 knots, these SL-7s are among the fastest cargo ships in the world and give us tremendous flexibility. They can sail to Europe from the East Coast in four days and generally can be off loaded in one day. Unlike the older and much smaller vessels in the Common User Fleet, these eight ships provide the capability to lift one armor or one mechanized infantry division in one convoy. These ships are kept under MSC control in a reduced operating status (ROS). They are partially manned and maintained in a reduced operating status and are capable of getting underway from their layberths (East Coast, Gulf, and West Coast) within 96 hours of notification.[52] This deployment capability is routinely evaluated during military exercises such as REFORGER.

In addition to the Common User Fleet and the SL-7s, MSC also controls 2 aviation logistics ships and 2 Navy hospital ships in ROS. The aviation logistics ships were designed to provide the necessary equipment and support for the maintenance of U.S. Marine Corps fixed wing and rotary wing aircraft. One ship is berthed at Philadelphia and the other at Port Hueneme, California. Maintained in a reduced operating status with a skeleton crew, they can be made ready in five days. Once activated, these ships become part of the Maritime Prepositioning Force.[53]

In order to reduce response time, the Department of the Navy completed a program in 1986 called the Maritime Prepositioned Force (MPF). This mobilization force consisting of 13 RORO ships contains enough equipment and supplies to support a full Marine Expeditionary Brigade of 16,500 men for 30 days. The MPF ships are under operational command of a Fleet Commander and are manned by a civilian crew. The ships have no amphibious capability and must be offloaded at a benign port facility. They could be offloaded at sea ('in the stream') but over a much longer period of time. These ships are routinely exercised in fleet operations, convoys, and JCS exercises. They are programmed to be downloaded every two years for cargo inspection, testing, and maintenance.

Illustrating the difference between airlift and sealift is the fact that each of the new maritime prepositioned ships can carry as much cargo as could be carried on 1,000 C-141 airlift sorties. However, the carrying capacity that makes these ships so valuable also makes their potential loss that much more severe.

Supplementing the MPF capability previously discussed, are 12 'afloat' prepositioned ships. These are commercial ships under long term charter to MSC that are dispersed at anchorage sites in the Pacific, Atlantic, and Indian Ocean. The ships carry equipment and supplies for the Army, Navy, and the Air Force consisting of ammunition, fuel, water, and other basic items.

The mainstay for the United States Strategic Sealift surge capability comes from the following sources:

Ready Reserve Fleet (RRF). The RRF consists of 85 ships which are categorized as 'inactive.' These ships which are no longer economically capable of competing in the commercial market are kept in a state of near term readiness and can be selectively activated in five, ten or twenty days. Many of these vessels are maintained at National Defense Reserve Fleet sites in Virginia, Texas, and California. Others are located at berths near activation sites or expected loadout ports.[54] Each RRF ship is designated to be crewed and operated by a predetermined commercial shipping firm. Control of RRF vessels was recently transferred to the Department of Transportation, who in conjunction with MSC and DOD ensures that they are periodically included in readiness exercises and special military missions.

National Defense Reserve Fleet (NDRF). This fleet consists of 14 WII vintage ships that are very near the end of their useful economic life. Similar to the RRF, these ships are controlled by the Department of Transportation and would be activated by Presidential proclamation and crewed by private carriers.

Sealift Readiness Program (SRP). This program evolved from the Vietnam War to augment available shipping for future conflicts. The SRP program mandates that commercial carriers must commit 50% of their U.S. flag fleet, in the event of mobilization, as a condition for participating in the movement of government sponsored cargo and the receipt of operating subsidies.[55] The SRP program has never been activated, yet remains as a formal agreement between MSC and the U.S flag

commercial shipping companies.

United States Flag Shipping. Currently there are 91 merchant ships owned and operated by U.S. flag carriers which could be called to military service by Presidential proclamation.[56] These vessels are the true barometer of the U.S. Merchant Marine capability. The majority of these vessels consist of container ships which are not conducive to deploying unit type equipment. In addition to these ships, there are 127 Effective U.S. Controlled Ships (EUSC) that are 51% U.S. owned, but flying flags of convenience of the Bahamas, Honduras, Liberia, and Panama. These ships consist primarily of tankers and are crewed by foreign nationals.[57] Presidential proclamation is also required to call these vessels into military service.

In addition to the U.S. controlled sealift assets previously mentioned, perhaps the most important capability that still remains is the NATO resources. In support of a major U.S. military commitment to NATO, a 600 ship pool from NATO member nations is available.[58] According to the NATO Planning Board for Ocean Shipping, there are currently 547 ships identified and allocated to meet alliance sealift requirements. These ships are designated from a list of 4800 military useful vessels managed by an international body called the Defense Shipping Authority (DSA). In spite of the fact that many of these ships would be required for economic support during a conflict, and many are below the 1600 gross ton cutoff, they do represent a critical supplement to the trans-Atlantic reinforcement requirement. A comprehensive list of available strategic sealift resources

is provided at Appendix D.

Airlift. As previously noted, airlift cannot compete with sealift when addressing the issue of bulk capacity. On the other hand, airlift is a critical component of the mobilization 'triad,' providing the flexibility and speed that is lacking in sealift.

As intended, airlift can quickly provide the personnel necessary to match up with POMCUS assets. This multi-divisional capability, ready to fight in six to ten days, may provide the necessary 'show of force' that will prevent further escalation.

Similar to the sealift capability, airlift is also keyed to U.S. civilian and military airframes and the additional civil-military assets from NATO members. A quick review of these airlift assets is warranted before accepting the often professed notion that the NATO mobilization requirement cannot be met. A comprehensive list of U.S. airlift assets is provided at Appendix E.

From the U.S. military perspective, the Military Airlift Command (MAC) is charged with monitoring and controlling the U.S. strategic airlift fleet. Depending on the level of mobilization, as determined by the level of national emergency, MAC airlift assets can be supplemented by approximately 392 Civil Reserve Air Fleet (CRAF) passenger and cargo carriers. Total activation of this airlift fleet requires Presidential proclamation and since its inception in 1952, CRAF continues to play a significant role in U.S mobilization and reinforcement plans for NATO. Because of CRAF's ability to move passengers, over 95 percent of our wartime strategic troop movement requirements are assigned to it. CRAF

aircraft would also provide nearly 25 percent of the wartime airlift of equipment and supplies to NATO.

Significant efforts have been underway for the past 8 to 10 years to adapt civilian (CRAF) aircraft in order to meet military cargo requirements. The CRAF Enhancement Program modifies existing wide-body passenger aircraft for use as cargo carriers during mobilization. Fortunately, many of the civilian aircraft from NATO member countries are designed for cargo adaptability in the event of mobilization. The bad news is that only eight NATO nations (Belgium, Germany, Italy, Luxembourg, the Netherlands, Norway, Portugal, and Great Britain) have committed civilian aircraft specifically for mobilization purposes.[59]

This NATO commitment includes 26 cargo, 55 passenger, and 14 747 COMBI (combination passenger and cargo) aircraft. If called into action, this would be the equivalent of doubling the size of the U.S. C-141 fleet.[60]

The final point to be made regarding military airlift capability is centered on the proposed C-17 transport plane. Intended to replace the aging C-130 and C-141 fleets, two hundred and ten C-17s were originally programmed for the next ten years. These strategic lift aircraft are capable of carrying the M-1 tank; providing airdrop capability for outsize equipment; tall enough to hold an Apache helicopter; wide enough for two 5 ton trucks; long enough for three Bradleys; and capable of both short distance take-off and landings. By comparison, the C-17 was intended to produce nearly four times the number of sorties and nearly three times the delivered tonnage as the C-5 aircraft.

Critics of the C-17 program and budget constraints have delayed the timetable for achieving Congressional approval and triggering production. At a cost of $240 million per aircraft, critics claim that the new C-5 configuration allows a third more cargo than the C-17, and the C-17 is not capable of meeting its trans-Atlantic commitment when fully fueled and loaded at its advertised 62 ton payload capacity. Only time and budget constraints will determine if the C-17 aircraft is added to our strategic airlift capability.

Two final points need to be made in order to adequately measure the U.S. strategic mobilization 'capability.' These are the status of our shipbuilding industry and secondly, the command and control elements of our transportation and mobilization base.

First, the shipbuilding and shipyard maintenance capability in the United States is diminishing. Today, there are 24 privately owned shipyards holding or actively seeking construction contracts for large oceangoing commercial naval vessels. In 1982 there were 27 such yards. Of the surviving 24, only 18 have shipbuilding contracts. According to a DOD forecast, the number of privately owned shipyards could decline to only 15 to 20 by 1995.[61]

In 1982 there were 83 privately owned repair yards. Currently, there are 50.[62] Additionally, there are 9 public shipyards, 8 belonging to the Navy and 1 to the Coast Guard. They cannot be expected to build, reactivate, or repair merchant and military ships at the rate history has forecasted. Equally important, as the physical shipbuilding and repair facilities

decrease, the personnel work force also decreases. In the last six years, the U.S. shipyard work force has fallen by more than 28,000 employees, or 25 percent nationwide.[63]

The final element of mobilization 'capability' is the command and control issue. Quite simply, who's in charge and does the current system allow for a quick and efficient mobilization effort? On 1 October 1987, the U.S. Transportation Command was activated. This particular event is noteworthy in that it represents perhaps the single most important event in recent years to centralize this nation's military transportation and mobilization planning and execution responsibilities. In short, TRANSCOM is now responsible for integrating the global air, land, and sea transportation capabilities of the Department of Defense. This charter includes the operation and maintenance of our deployment system, orchestration of transportation aspects of worldwide strategic mobility planning, integration of all deployment related automated data processing systems, and providing centralized wartime traffic management.[64]

Criticisms of the previous U.S. Military Transportation Command and Control Systems goes back to the Hoover Commission Report of 1949.[65] These criticisms include: the lack of coordination, information, a flexible transportation system, and every other complaint that one might expect from such a complex and demanding component of war planning and execution. Activation of TRANSCOM appears to be a master stroke in resolving past and future U.S. transportation/mobilization problems in support of our world-wide commitments.

Unfortunately, TRANSCOM remains only one agency involved in the massive U.S. and NATO transportation infrastructure. When one attempts to identify all of the 'key' players in the mobilization process, the list is almost endless. Considering a NATO mobilization or reinforcement scenario, the following agencies become part of the decision and implementation network: Congress, Department of Defense, Department of State, Department of Transportation, the U.S. Air Force (MAC aircraft), the U.S. Navy (MSC vessels), the Maritime Administration, commercial merchant fleet owners, civilian aviation corporations, labor unions, and so on. All of these agencies and activities are part of the decision process regarding aircraft, ships, personnel, and associated facilities. The web is even more complex within the NATO community. The issue of national sovereignty creates a command and control network that becomes a multiple of sixteen. Add to this, the layers that one finds within the NATO Headquarters itself. To name only a few: The Planning Board for Ocean Shipping; the Defense Shipping Authority; the NATO Civil Wartime Agency; Logistics and Civil Emergency Planning; the Executive Working Group; the SHAPE Technical Center; the Senior Civil Emergency Planning Committee; the Planning Board for European Inland Surface Transport; the Southern European Transport Organization; the Civil Aviation Planning Committee; the Bureau for the Coordination of Civil Aviation; and the list goes on.

As depicted by this chapter on strategic lift capabilities, the number of available ships and aircraft from both the U.S.

and NATO inventory is extensive. The combined strategic lift assets of military and civilian resources far outnumber the various requirements estimated for the initial 'Ten In Ten' requirement.

Without reaching conclusions too early, the command and control aspect of mobilization must also be considered when evaluating our 'capability' to mobilize and reinforce NATO. The answer to the question: 'Can We Get There from Here?'...cannot be determined by just counting ships and airplanes!

IMPLICATIONS AND CONCLUSIONS

As stated several times throughout this monograph, the question to be answered is: "Can We Get There From Here?" The implications that make up the study of this mobilization and reinforcement to NATO question, go well beyond the scope of merely counting aircraft and ships.

In spite of the complexities in evaluating our mobilization requirements and capabilities, the most frequent answer to the question implies that we cannot achieve our stated commitment to NATO, which further implies that our stated national interests are at risk or cannot be met. Accepting the assumption that our national military and civilian leaders have given this question the level of investigation it deserves, it may be interesting to review some of their insights....

> General Carl E. Vuono, Chief of Staff of the Army:
>
> Although more than 4 division sets of equipment are now prepositioned in Europe, the U.S. still can't meet the commitment it made to Europe in 1982 of having 10 divisions in Europe within 10 days of a decision to reinforce. It takes closer to 30 days using virtually all of the U.S.' airlift force and a vast amount of the fastest sealift available.
>
> ...the Army's biggest area of vulnerability is strategic lift capability.[64]

> General John R. Galvin, Supreme Allied Commander, Europe:
>
> I've got to have the C-17 for the first 10 days, but after that I need sealift. The answer is to revive the merchant marine.[65]

Senator Edward M. Kennedy: Asked senior Navy representatives why they needed another strategic lift study rather than just getting on with the business of developing requirements and proposing specific sealift resources...and was told: We don't have a Temporary Operational Requirement (TOR) which allows us to expend funds on such a program.

...Senator Kennedy asked who writes the TOR and was told that the Navy does![66]

General Duane H. Cassidy, Former CINC TRANSCOM: Reducing our troop strength in Europe will not only exacerbate our ability to reinforce Europe, but other theaters as well.[67]

Admiral William J. Crove, Jr., Former Chairman, JCS: If fiscal realties were to require force reductions both home and overseas, our mobility assets would become even more critical.[68]

Major General Henry C. Stackpole, U.S. Marine Corps: We have a maritime situation in a maritime nation that has been decimated. We depend on 50 percent of our shipping for Europe coming from Europe.[69]

Senator John S. McCain, Senate Armed Services Committee: We are either going to have to stop saying that this (strategic lift) is an issue of critical importance and put our money where our mouth is, or just accept the situation as it is.[70]

The comments provided above, taken in context with the information provided in this study, reinforce the dilemma of our strategic lift challenge. It becomes increasingly clear that for the near term, the U.S. commitment to NATO is within the realm of our national interests. Our economic, political, social, and military linkage to Europe is still valid, in spite of worldwide 'infatuation' with peaceful rhetoric on the part of the Soviet Union.

Our collective success in Europe, through a strong NATO, has provided the deterrence from Soviet aggression. Any premature reduction in the military alliance that has provided this deterrence would be the result of not recognizing and accepting the massive Soviet warfighting and mobilization capability that still exists and continues to grow. As pointed out earlier, the current CFE negotiations and their ensuing results will determine the need for maintaining or possibly increasing mobilization and reinforcement capabilities.

When measured against today's NATO reinforcement requirements, our ability to "get there from here" does exist. In spite of a merchant marine fleet and associated shipbuilding and repair industry that has diminished by WWII standards, U.S. maritime and Navy assets, coupled with designated NATO vessels provide marginally adequate surge and reinforcement capability. The question of sustaining protracted war in Europe is the real issue. Part of the answer to this question will be determined by naval superiority over the Soviet submarine fleet and our ability to enhance ship building and repair during the initial and follow-on stages of conflict.

Continued recognition of modernizing our sealift assets must continue. In spite of the gloomy picture portrayed, Congress has taken some significant initiatives in this area. It appropriated more money to Navy sealift programs for the period 1982 to 1986 than it had since the end of WWII--a total of $18.8 billion ($5.4 billion for shipbuilding/modernization and $13.4 billion for

operating/maintaining the Navy's logistic vessels).[71] In addition to these amounts, the RRF received $.5 billion to increase in size during the period 1986 to 1989.[72] Certainly not enough, but a good start.

Further enhancement to our sealift capability must focus on increasing our commerical maritime fleet. In spite of $50.2 billion in government appropriations between 1984 and 1986, our commercial fleet has yet to reestablish itself as an economic force which can also transition to a military mobilization asset. In order to accept itself as a national mobilization asset, our maritime fleet must be engineered to meet both civilian and military cargo. Enhancements through revised tax and tariff benefits could be further complimented by federal subsidies. In all cases, these benefits to the maritime industry must be linked to a future fleet that is capable of accepting military cargo and is responsive to Congressional and Presidential national emergency decisions.

Similar to the sealift capability, our most significant airlift capacity is found in our civilian fleet. MAC provides the initial positioning for the committed tactical fighter wing personnel and support equipment, and POMCUS personnel. CRAF and aircraft assets from our NATO allies must be ready to accept the balance of reinforcement personnel and equipment. The combined assets of MAC, CRAF, Non-CRAF, and NATO commercial aircraft exceeds 5,000 aircraft!

Recognizing that the majority of these assets are not currently configured for over-size military cargo, there certainly exists the opportunity to capture some of this

capability to meet the suggested airlift shortfall. The most important step in increasing our strategic airlift capability is through the CRAF Enhancement Program. Quite simply, new and current aircraft should receive modifications which would allow quick conversion to meet military cargo needs in the event of mobilization.

Two examples can be shown which clearly support the need for expanding and financially supporting the CRAF Enhancement Program. I might further add that these two proposals make it clear that the much debated C-17 transport aircraft should be discarded. First, the cost of one C-17 is approximately $125 million per aircraft, while the cost of retrofitting a used 747-100 is estimated to be at $15-20 million.[73] Second, U.S. airframe manufacturers have ordered more than 1,000 commercial transport aircraft annually. If only 10 percent of these aircraft are delivered with CRAF modifications, the impact on the deficit airlift problem would be significant.

My earlier contention that "we can get there from here" was based on sealift and airlift capabilities. In spite of a questionable requirements data base, the capability to meet the "Ten In Ten" commitment does exit. The combined military and civilian airlift and sealift assets of the United States and NATO members far exceed what is determined to be the initial requirement. Our forward deployed 4 divisions, followed by linking personnel to POMCUS and Prepositioned Afloat assets account for the bulk of our commitment. The weak point or perhaps our "center of gravity" is really our collective national will to mobilize and

our ability to orchestrate mobilization and reinforcement through a layered and cumbersome command and control network.

The question of making a quick and decisive political decision to mobilize early in the warning cycle is most critical. This decision to mobilize includes a decision to place all NATO lift assets at the disposal of a single, authorative headquarters. Parochial differences and questions of sovereignty must be set aside for the common good of the NATO alliance. Without a quick and decisive political decision to mobilize and a collective willingness to put all available assets under centralized control, having 10 times our current strategic lift resources would serve little purpose.

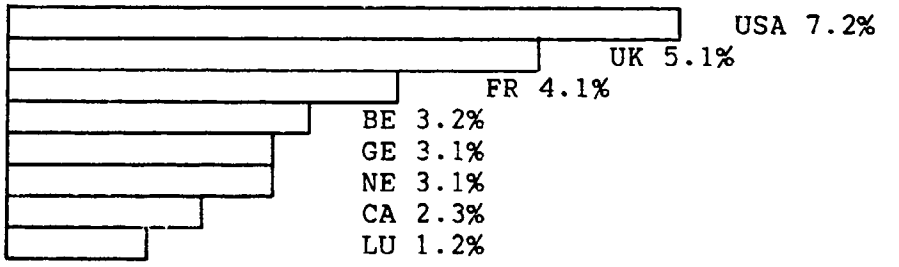
If Article 4 of the North Atlantic Treaty retains its historical meaning, "we must get there from here."

> ...The parties agree that an armed attack against one or more of them in Europe or North America shall be considered an attack against them all.

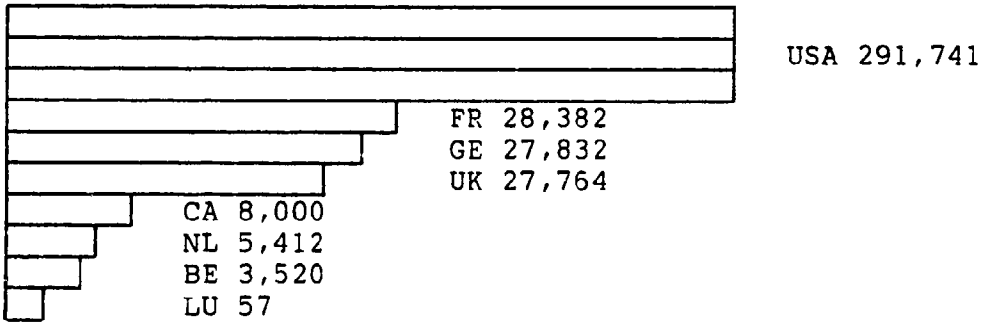
APPENDIX A

A COMPARISON OF NATO CENTRAL REGION NATIONAL DEFENCE EXPENDITURE 1986

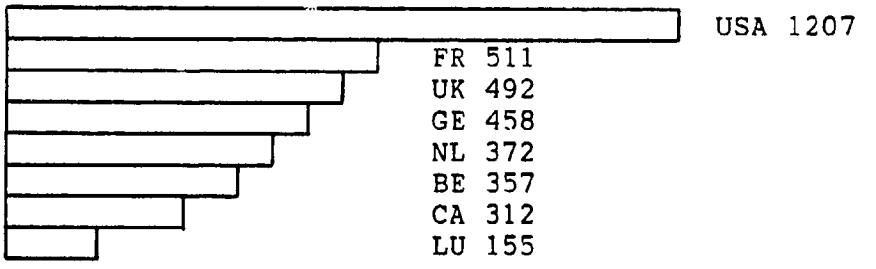
Defence expenditure as a percentage of GDP (market prices)



Total defence expenditure (US $M:



Per capita defence expenditure (US $)



Notes: (a) These figures, which are provisional, have been compiled from NATO sources except for the UK which has been compiled from national sources. Total expenditure and per capita figures are based on 1986 average market exchange rates, which do not necessarily reflect the relative purchasing power of individual currencies and so are not a complete guide to comparative resource allocation.

(b) The charts have been adapted from those published in the UK "Statement of Defence Estimates, 1987," Part 1.

Source: F. A. L. Alstead.

APPENDIX B

Partial Mobilization. Expansion of the active Armed Forces resulting from action by Congress (up to full mobilization) or by the President (not more than 1,000,000 for 24 months) to mobilize Reserve Component units, individual reservists, retirees, and the resources needed for their support, to meet the requirements of a war or other national emergency involving an external threat to the national security. This is the first level of mobilization.

Full Mobilization. Expansion of the active Armed Forces resulting from action by Congress to mobilize all reserve component units in the existing approved force structure (current Force), all individual reservists, retired military personnel, and the resources needed for their support to meet requirements of a war or other national emergency involving an external threat to the national security.

Total Mobilization. Expansion of the Armed Forces resulting from action of Congress to organize and/or generate additional units or personnel, beyond existing force structure, and the resources needed for their support, to meet the total requirement of a war or other national emergency involving an external threat to the national security.

Source: VOL. 1, "System Description, Responsibilities and Procedures," ODCSOPS, June 1988.

APPENDIX C

Historical Synopsis of Mobilization Requirements References

YEAR	ENTITY	COMMENT
1952	Army Field Manual 101-53	Consideration of the relationship of the mobilization plan to the war plan and to program development inevitably brings up the problem of requirements versus capability.
1970	Joint Logistics Review Board	...poor mobilization requirements...
1976	Defense Science Board	...inadequate industrial mobilization planning...
1980	Ichord Committee	If we plan for a short war and make no plans for a long war, then surely all future wars will be short.
1980	Defense Science Board	...lack of an adequate basic industrial capacity based on inadequate government (requirements) planning...
1983	Mobilization Concepts Development Center	...persistence of the difficulty in defining requirements...
1984	Army Logistics Management Center	The Army has no prescribed systematic method or procedure for computing, submitting, reviewing and validating mobilization materiel requirements.
1986	Mech/Armor Production FAA	...lack of authoratative industrial mobilization requirements undermines the current mobilization planning system.
1987	OSD Management Study Team	Requirements are the baseline for setting equipment and materiel acquisition and industrial base funding objectives.
1988	Air Force Association	Government programs fall far short of answering the requirements of the U.S. industrial base.

APPENDIX D

Strategic Sealift Resources

(Funded)

Non-Gov't Controlled Ships	Dry Cargo	Tankers
US Flag Merchant Ships	152	126
Effective US Controlled (EUSC)	23	96
Government Controlled Ships		
Military Sealift Command		
o Common User Ocean Transportation	10	22
o Afloat Prepositioning Force (APF)		
Maritime Prepositiong Ships (MPS)	13	
Prepositioning Ships ((PREPO Ships)	8	4
o Reduced Operating Status (ROS)		
Fast Sealift Ships (FSS)	8	
Aviation Logistic Support Ship (TAVB)	2	
o Ready Reserve Force (RRF)	85	7
Maritime Administration (MARAD)		
o National Defense Reserve Fleet (NDRF)		
NDRF Useful	50	16
NDRF Victory Ships	96	
US Total	447	271

Allied	Cargo	Tankers
NATO Pool	400	61
Other Flag Ship Pool*	27	4
Allied Total	427	65

*Not intertheater assets

As of 30 September 1987

Source: United States Military Posture, FY 1989, Joint Staff.

MSC Common User Fleet

Ship Name	Tanker	Year Built
Mv American Eagle	RORO	1981
USNS Mercury	RORO	1977
SS Greenwave	BB	1980
SS Louise Lykes	BB	1968
SS Santa Adela	BB	1966
SS Santa Juana	BB	1966
SS Dawn	BB	1963
SS Rover	COMBO	1969
USNS Sealift Pacific	TANKER	1974
USNS Sealift Arabian Sea	TANKER	1975
USNS Sealift China Sea	TANKER	1975
USNS Sealift Indian Ocean	TANKER	1975
USNS Sealift Atlantic	TANKER	1974
USNS Sealift Mediterranean	TANKER	1974
USNS Caribbean	TANKER	1975
USNS Sealift Artic	TANKER	1975
USNS Sealift Antartic	TANKER	1975
Mv Gus M. Darnell	TANKER	1985
Mv Paul Buck	TANKER	1985
Mv Samuel L. Cobb	TANKER	1985
Mv Richard H. Mathieson	TANKER	1986
Mv Lawrence H. Giamella	TANKER	1986
Mv Bravado	TANKER	1977
Mv Falcon Champion	TANKER	1984
USNS Susan Hanna	BARGE	NA
USNS Seneca	TUG	NA
Total	26	

Source: Navy Fact File 8th Edition and the Almanac of Seapower, 1988.

Fast Sealift Ships

Ship Name	Type	Year Built	Year Converted
USNS Algol	MULTI	1973	1984
USNS Belatrix	MULTI	1973	1984
USNS Denobola	MULTI	1973	1984
USNS Pollux	MULTI	1973	1984
USNS Altair	MULTI	1973	1986
USNS Regulus	MULTI	1973	1986
USNS Capella	MULTI	1972	1986
USNS Antares	MULTI	1972	1986
Total	8		

MULTI = Converted container to RORO, BB and Container lift.

Aviation Maintenance Ships

Ship Name	Year Delivered
USNS Wright	FY86
USNS Curtiss	FY87
Total	2

Military Hospital Ships

Ship Name	Year Delivered
USNS Mercy	FY88
USNS Comfort	FY89
Total	2

Maritime Prepositioned Ships

Ship Name	Type	Year Built
Cpl Louis J. Hauge	RORO	1979
Pfc William B. Baugh	RORO	1979
Pfc James Anderson Jr.	RORO	1980
1st Lt Alex Bonnyman Jr.	RORO	1980
Pvt Harry Fisher	RORO	1980
Sgt Matej Kocak	RORO	1983
Pfc Eugene A. Obregon	RORO	1983
Maj Stephen W. Pless	RORO	1983
Lt John P. Bobo	RORO	1985
Pfc DeWayne T. Williams	RORO	1985
1st Lt Baldonero Lopez	RORO	1985
1st Lt Jack Lummus	RORO	1986
Sgt William R. Button	RORO	1986
Total	13	

Prepositioned Afloat Ships

Ship Name	Type	Year Built
SS American Veteran	LASH	1969
SS Green Island	LASH	1975
SS Green Valley	LASH	1974
SS Green Harbor	LASH	1974
SS American Trojan	BB	1969

(Continued)

Ship Name	Type	Year Built
SS Letitia Lykes	BB	1968
SS Elizabeth Lykes	BB	1966
SS Overseas Alice	TANKER	1968
SS Overseas Valdez	TANKER	1969
SS Overseas Vivian	TANKER	1969
Mv Falcon Leader	TANKER	1983
Mv American Cormorant	FLOFLO	1975
Total	12	

Ready Reserve Fleet

Region	Type Ship	Number
East	RORO and BB	34
	Aux Crane	1
Gulf	RORO and BB	25
	Seatrain	2
	Tankers	2
West	RORO and BB	15
	Tankers	4
	Aux Crane	2
To be placed	Aux Crane	7
	LASH	2
	RORO and BB	8
	Oiler	2
	Total	104

Sealift Readiness Program

Type Ship	Number
Breakbulk	6
Ctnr-BB	21
Ctnr-NSS	49
RORO	8
LASH	3
Tanker	16
Total	103

National Defense Reserve Fleet

Type Ship	Number
RORO and BB	137*
Tankers	24
Troop	10
Total	171

* 79 are WWII Victory Ships

U.S. Flag Shipping
Foreign Commerce

U.S. Carrier	Number	Type
American President Lines	23	CTNR
American Transport Lines	7	CTNR
Farrel Lines	6	CTNR
Lykes Bro Steamship Co.	27	CTNR/RORO
Sealand Inc.	23	CTNR
Top Galant	2	CTNR
Waterman Steamship Co.	3	LASH
Total	91	

EUSC Ships

Type	Number
BB	19
Tanker	98
PAX	10
Total	127

NATO Shipping

Type	Number
BB	206
Ctnr-NSS	98
Ctnr-SS	85
RORO	84
Tankers	62
PAX	12
Total	547

APPENDIX E

Strategic Airlift Resources

Military Aircraft

Type	Number** (Active/Reserve)
C-5	66*/15
C-141	21[illegible]/16
C-130	206/296
KC-10	56*/0

Civil Reserve Air Fleet

Type	Number**
Domestic	34
Alaskan	11
Short-range International (passenger)	13
Short-range International (cargo	4
Long-range International (cargo	77
Long-range International (Passengers)	253

* C-5, C-141, and KC-10s are jointly operated by Active and Reserve Associate Units

** Full Activation

As of 30 September 1987

Source: United States Military Posture, FY 1989, Joint Staff.

The list below provides the number of aircraft, by type and segment, that are registered with the Federal Aviation Administration and those within type and segment that are available for CRAF.

AIRCRAFT	IN CRAF	NOT IN CRAF
Domestic Cargo		
L-100	17	0
B-727	12	246
B737	0	106
DC-9	4	26
L-188	8	18
TOTAL	41	394
Alaskan Cargo		
L-100	3	0
L-188	0	4
B-737	0	5
B-727	0	11
DC-9	0	0
DC-6	8	3
MD-80	0	0
TOTAL	11	23
Alaskan Passenger		
L-100	0	0
L-188	0	0
B-737	0	2
B-727	0	20
DC-9	0	0
DC-6	0	3
MD-80	0	9
TOTAL	0	34
Short-Range International Cargo		
B-737	4	100
B-727	0	179
B-757	0	7
DC-9	0	30
TOTAL	4	316

Source: Gillespie, Lawrence E., Colonel, "The Role and Viability of the Civil Reserve Air Fleet (CRAF) In a Partial or Full Mobilization," U.S. Army War College, March 1989, p. 22.

Short-Range International Passenger

B-737	0	616
B-727	10	1096
B-757	2	70
DC-9	0	171
MD-80	0	288
TOTAL	12	2241

Long-Range International Cargo

DC-8	28	42
B-707	6	13
B-747	47	1
Dc-10	19	14
TOTAL	100	70

Long-Range International Passenger

DC-8	20	0
B-707	3	8
B-747	111	6
DC-10	59	20
B-767	28	74
A-310	19	0
L-1011	38	7
TOTAL	278	92

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