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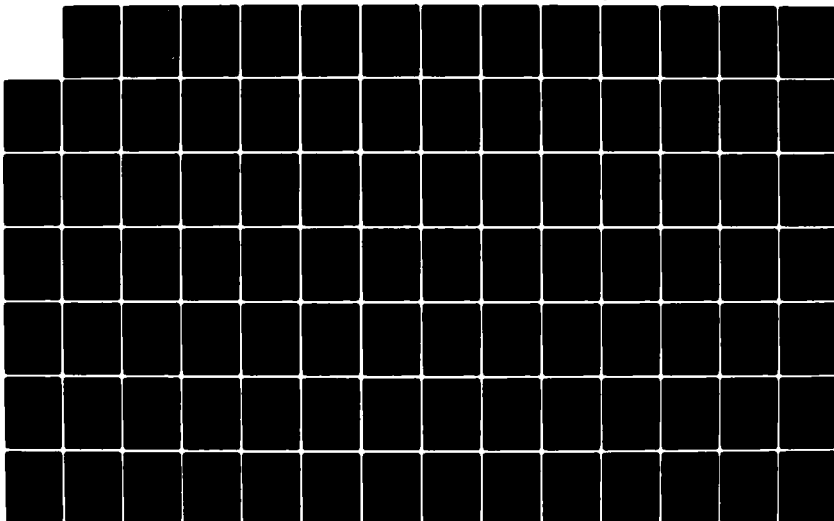
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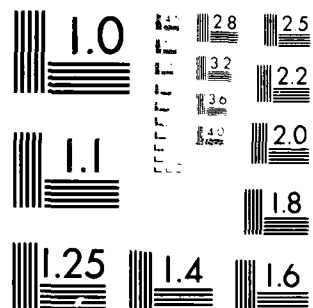
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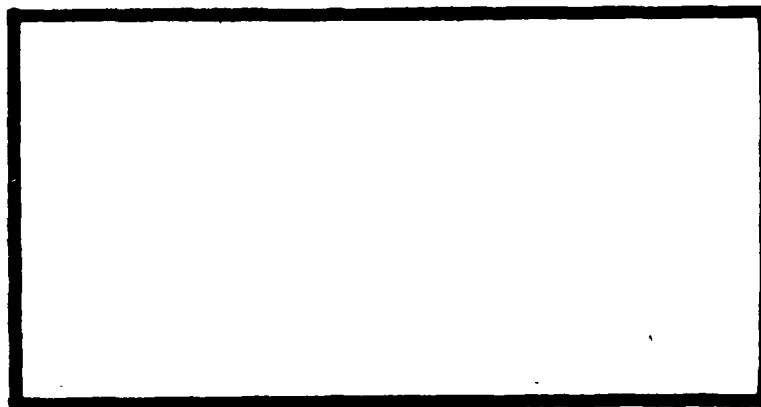


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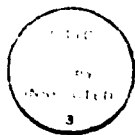
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THE EVOLUTION OF THE DEPARTMENT OF
DEFENSE TRANSPORTATION SYSTEM:
CURRENT PROBLEMS AND TRENDS

Robert F. Steed, Jr., Captain, USAF

LSSR 54-82

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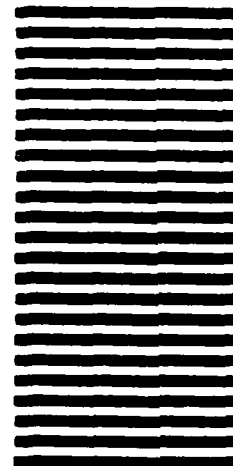
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The evolution of the Department of Defense Transportation System is dynamic and complex. This thesis analyzes the transportation system within the Department of Defense since World War II. It also identifies major problem areas and shows the cause and effect relationship, with emphasis given on the need and directions toward reorganization. Furthermore, this study looks at Strategic Mobility Interface with the three Transportation Operating Agencies (TOAs), and its reliance on the National Transportation System to conduct defense transportation activities.

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THE EVOLUTION OF THE DEPARTMENT OF
DEFENSE TRANSPORTATION SYSTEM:
CURRENT PROBLEMS AND TRENDS

A Thesis

Presented to the Faculty of the School of Systems and Logistics
of the Air Force Institute of Technology
Air University

In Partial Fulfillment of the Requirements for the
Degree of Master of Science in Logistics Management

By

Robert F. Steed, Jr., BS, BA
Captain, USAF

September 1982

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This thesis, written by

Captain Robert F. Steed, Jr.

has been accepted by the undersigned on behalf of the
faculty of the School of Systems and Logistics in partial
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MASTER OF SCIENCE IN LOGISTICS MANAGEMENT

DATE: 29 September 1982

Thomas C. Hamington
COMMITTEE CHAIRMAN

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CHAPTER I

INTRODUCTION

Background

May it please your Excellency: I returned from Ticenderoga to this place on the fifteenth, and brought with me the cannon, it having taken nearly the time I conjured it would to transport them here.

—Col. Knox to Gen. Washington
Fort George, December 17, 1776

An interesting aspect of what the British thought to be an impossible logistics maneuver, was that Colonel Knox enlisted civilian wagonners to move the 50 cannon from Fort Ticenderoga to Boston [22:6].

One might say the Department of Defense (DoD) transportation evolution started in such a manner. To this day, national and defense transportation entities combine to form a transportation team to create time and place utility for weapon systems, spare parts, forces, supplies and equipment.

Above all, the major mission of this transportation team is the creation of flexible response for the rapid deployment and reinforcement of forces established to deter or defeat aggression in any part of the world [20:8].

The purpose of this thesis is to analyze the organizational development of the transportation system within the DoD and to study the present system.

Because the defense transportation system interfaces with the national transportation system for the

conduct of defense transportation activities, it is necessary to examine the evolution of the national transportation system. Therefore, this background section contains a brief description of some past events leading to the development of the United States' transportation system. This is followed by a brief description of the Department of Defense (DoD) transportation organization and responsibilities.

The National Transportation System

Transportation within the United States is a vast industry with unlimited growth. Transportation has often been referred to as the "circulatory system of the United States' economy [6:41]." This nation's economic growth and well-being, social structure, pattern of living, geographical expansion and its specialization of production output all hinge on transportation (29:1).

The government's role in transportation derives from its responsibility for promoting the nation's welfare, providing national security, and protecting the public interest (76:135). Government actions in many areas affect transportation; the two pivotal areas are government subsidy and government regulation. In the United States, the government shares with private enterprise the risks and costs of providing transportation in a mixed system of public and private enterprise. The United States

Government usually participates by furnishing basic rights of way, some terminal facilities, promotion of various modes, and economic and safety regulation; private enterprise conducts carrier operations over the publically provided facilities. This mixed enterprise feature is especially predominate in highway, water and air transportation systems; and to a lesser extent with pipeline and railway systems. It can be contrasted with other nations, which, for example, operate railroads under public enterprise. To illustrate specific examples of the mixed enterprise nature of the U.S. transportation system, all domestic transportation agencies, except pipelines, have received subsidies from the government at some point in time during their development. Further, the government provides for economic and safety regulation, although the extent of regulation varies considerable among the modes. For example, economic regulations apply to 100 percent of the railroad industry, 40 percent of the trucking industry, and 10 percent of the domestic water carriers. The Airline Deregulation Act of 1978 removed economic regulation of air cargo carriers and legislation in 1980 removed some of the economic regulation on rail and truck carriers.

Early National Transportation Policy

The federal government has the basic responsibility for establishing national transportation policy because of

its importance to the growth and progress of national transportation development. This country's policy of stimulating economic development through encouraging adequate, efficient and competitive transportation systems, with the use of promotion and subsidy programs, has been achieved long ago. The current direction of national transportation policy is to develop an effective and efficient integrated system out of the existing structure.

At the turn of the century and through 1917, the aim of the Interstate Commerce Commission (ICC) was to put common carriers of interstate commerce under federal control, and this required just and reasonable rates. The ICC also banned personal discrimination, prejudice, long and short hauls, the pooling of traffic, and required publication of rates (16:24). To this day it is often said that the restrictive regulation of the ICC sometimes works against, rather than for, an effective and efficient transportation system. Examples of this are traffic congestion, air pollution, and the lack of public transportation in cities with dense population. Between 1920 and 1970, there were many acts written to promote, control and regulate transportation activities, and thus establish transportation policy. As a result, no single document provided a concise description of national policy, although an attempt to do this was made in 1940. For the first time, congress moved to set down one general statement of

policy in the "Declaration of National Transportation Policy" contained in the Transportation Act of 1940:

It is hereby declared to be the national transportation policy of the Congress to provide for fair and impartial regulation of all modes of transportation subject to the provisions of the Act. So administered as to recognize and preserve the inherent advantage of each; to promote safe, adequate, economical and efficient service and foster sound economic conditions in transportation and among the several carriers; to encourage the establishment and maintenance of reasonable charges for transportation service, without unjust discriminations, undue preferences, or advantages, or unfair or destructive competitive practices; to cooperate with the several States, and the duly authorized officials thereof; and to encourage fair wages and equitable working conditions--all to the end of developing, coordinating, and preserving a national transportation system by water, highway, and rail as well as other means, adequate to meet the needs of the commerce of the United States, of Postal Service, and of the national defense. All of the provisions of this Act shall be administered and enforced with a view to carrying out the above declaration of policy [55:289-290].

It should be noted that the overall policy objective was aimed at the development of an integrated transportation system based on the inherent advantages of each mode. Further, the policy called for controlled competition through the regulation of each mode.

At the time the Transportation Act of 1940 was promulgated, there were three administrative agencies regulating the modes of transportation. These were the ICC, responsible for surface transportation,¹ the Civil

¹The Federal Energy Regulatory Commission (FERC) received the power to regulate natural gas and oil pipelines in 1977, thus becoming the fourth agency regulating

Aeronautics Board, responsible for air carriers, and the Federal Maritime Commission, responsible for ocean carriers.

After the Transportation Act of 1940, many transportation experts, both within and outside the federal government, criticized the three agencies. From the agencies came jurisdictional disputes, interagency disagreements regarding transportation policy and one regulatory body making decisions without regard to the ramifications on the other modes. Growing dissatisfaction, both within the transport industry and among the government leaders, resulted in many transportation studies and articles being initiated.

Ingle and Burden noted that in 1938, Mr. Joseph B. Eastman, a former Federal Coordinator for the ICC, delivered an address to the Alumni Association of the Harvard Business School in which he stated (29:2):

There is sore need for a well equipped agency of this government which will not be submerged by quasi-judicial procedure and which can keep closely in touch with conditions. locate those which are dangerous or unsound, foresee tendencies and their probable results, advise Congress and the President, promote changes for the better, and guide development along sound lines [43:158].

Mr. Eastman supported his idea for a single transportation agency in a comprehensive study for the National

transportation (21:480). It should be noted that the CAB will be phased out in 1985 as a result of the Airline Deregulation Act of 1978 (21:480).

Resources Planning Board in May 1942. His study also pointed out the lack of a coordinating link between the separate and independent agencies of the federal government to provide the best transportation system to meet the nation's needs. The study recommended the following be adopted to solve this problem:

A National Transportation Agency should be established to coordinate all Federal development activity in transportation along the lines of a general and progressive plan under appropriate legislative directives. Existing development agencies would be absorbed as divisions of the new agency. Apart from the normal development functions of these agencies, it would be the special responsibility of the Agency to undertake leadership in programs for transport consolidation of the various transport media and encouragement of the development of new forms of transport within their respective economic spheres. Active cooperation with the regulatory agencies would be required, but the National Transportation Agency would be responsible for the unification of the Federal Government's planning, development, and administrative functions in the field of transportation [43:14].

Of the many studies on the organization of transportation within the federal government, Mr. James Knudson wrote an article in the October 1958 issue of Distribution Age entitled "There is No Transportation Policy." The article stated that a transportation department could be established and could serve as a focal point for national policy. Furthermore, a Brookings Institution study in 1949 and the Doyle Report in 1961 had both recommended the establishment of a Department of Transportation. Still, five years after the Doyle Report's recommendation, the move to create a Department of Transportation did not have

strong support. Finally, in 1966 President Johnson pushed the proposal for the Department of Transportation (DOT) and Congress responded, passing the Department of Transportation Act, Public Law 80-670, in October 1966. DOT came into being the following April 1967.

The Department of Transportation

President Johnson made the following comments about the DOT's functions:

. . . to stimulate technological advances in transportation, to provide general leadership in the identification and solution of transportation problems, and to develop and recommend to the President and Congress, for approval, national transportation and policies and programs to accomplish those objectives [62:54].

The creation of the department brought consolidation to thirty-eight government agencies, and the safety function of the ICC was transferred to DOT, along with the time zone jurisdiction. Furthermore, the creation of DOT brought about the organization changes of the federal government advocated by Mr. Eastman in 1938. The federal government finally has a national transportation organization that should be focusing its objective on the creation of a national transportation system out of the established transportation structure. The system should be one designed to support the economic growth of our nation and in conjunction with the defense transportation system, meet the needs of national defense.

Future Direction of National Transportation Policy

In 1974, the Secretary of the newly created Department of Transportation, Claude S. Brinegar, outlined ten principles of transportation policy to achieve the objective of an integrated national transportation system. Although the principles did not lead to any legislation, they are repeated here to illustrate the directions in which national policy makers believe appropriate for our nation's transportation system (76:138).

1. The thrust of federal efforts should be directed toward an overall system that is efficient, safe, fast, convenient, limits negative impact on the environment, and meets essential needs.

2. The private sector should provide the nation's transportation system as much as possible, and federal financing should be limited to high priority areas where the private sector and state and local governments are obviously incapable of meeting requirements.

3. Federal investments in transportation should be recovered through charges to users and other beneficiaries as appropriate to the degree of benefits received except where national policy directs otherwise.

4. Economic regulation should be streamlined, directed to reliance on open-market competition, and devised to encourage intermodal competition, but should retain control adequate to protect the public interest.

5. Transportation issues involving energy resources, safety, and the provision of satisfactory service to the poor, the handicapped, and the elderly should be dealt with aggressively and equitably.

6. The severe problem in urban transportation requires special federal effort, including general taxpayer support; also better planning and implementation is to be encouraged at the local level.

7. The inadequacies and uncertainties in rural public transportation require study and analysis. A policy for rural public transportation should be developed after acceptable answers to basic questions are found.

8. A priority program should be developed in which unneeded restraints to intermodal cooperation are removed, and joint use of terminals and other facilities is to be encouraged.

9. Federal research and development work on transportation should be directed to programs that have high potential payoff to the nation and that cannot be handled without some federal support.

10. The overall levels of knowledge about the nation's transportation should be raised in order to improve the analytical effort at the federal level and to identify potential problems.

The most recent attempt to study the nation's transportation needs and recommend policies that would

ensure an adequate transportation system was made by the National Transportation policy Study Commission, created by the Highway Aid Authorization Act of 1976 (21:449). The Commission's final report of July 1, 1979, contained more than eighty recommendations for transportation policies, including (21:450):

1. Federal DOT should be the lead agency in all federal nonregulatory programs.
2. The Congress should consolidate the congressional committees concerned with transportation from the thirty that now work on transportation issues.
3. Federal policies should encourage private ownership and operation of transportation services.
4. Modal trust funds should be retained.
5. Effective economic analysis should be required of all existing and proposed major federal policies, programs and regulations.
6. Users of public transportation facilities should be assessed charges that reflect the costs occasioned by their use.
7. There should be reduced federal economic regulation of transportation.

These recommendations are being studied and debated, and carried out in some cases. The key objective of interest in this research effort is that future national transportation policy guide the development, coordination

and preservation of a national transportation system adequate to meet the needs of the national defense transportation. The defense transportation system, which relies substantially upon the national system, is introduced in the next section.

Transportation Within the Department of Defense

The Defense Transportation System is big business affected by inflation, the energy shortage and the changes taking place in the commercial transportation industry. It is imperative that we keep pace with these changes to ensure the Department of Defense will be able to respond to an emergency anywhere in the world.

—Paul H. Riley, Deputy Assistant Secretary of Defense (Installations and Logistics), Defense Transportation Journal, December 1975, p. 6.

Transportation within the Department of Defense is truly big business.

In FY 1979, the DOD spent more than \$2 billion for the transportation of over seven million measurement tons of surface cargo, more than 900 million ton-miles of air cargo, and more than five million passengers [22:1].

Transportation is vital to defense logistics since it ties together all the parts of the logistics system by moving resources from where they are procured, stored and repaired to where they are needed. The lack of efficient and effective transportation could be a limiting factor in the logistics support of our armed forces. This limitation

could be a failure or lack of capability of a small sector of the total transportation system, such as limited equipment in time of need or limited port facilities and trained personnel (26:669).

Efficient and effective transportation has been vital in maintaining the military capabilities required by the nation's defense policies under present conditions and in possible future emergencies (76:117). History also indicates that there has been a general lack of defense transportation interest during times of peace. Much attention is now being given to a total transportation system for use in the defense of our national policies on a global basis. The needs of the Department of Defense are met partially by the government, but a heavy reliance is placed on the interface of commercial carriers to move passengers and a vast amount of cargo for resupply of forces engaged in battle.

In 1961, President John F. Kennedy clearly stated the policy of the United States regarding transportation capabilities:

We must have sea and airlift capable of moving our forces quickly and in large numbers to any part of the world. But even more important, we need the capability placing in any critical area at the appropriate time a force, which, combined with that of our Allies, is large enough to make clear our determination and ability to defend our rights at all costs and to meet all levels of aggression or pressure with whatever levels of forces are required. We intend to have a wider choice than humiliation or all-out nuclear action [67:1].

Also, the Chief of Staff of the United States Air Force, General John McConnell in 1961 supported President Kennedy's policy by stating:

The military objectives are: to provide the force structure required to support all diplomatic objectives; to maintain strategic superiority, convincing enough to deter nuclear aggression and to permit freedom of action in dealing with conflicts at lower levels; to provide the civil authorities with a wide range of options in such conflicts, and to maintain them to carry out any of these options expeditiously and effectively [37:44].

If our aim is to remain a free nation and to be successful in an emergency, we will have to depend heavily on our state of readiness with a rapid, total transportation system.² Today, it is envisioned that large-scale warfare scenarios will not allow sufficient time to build up our capabilities after the onset of the emergency. The best assurance is to maintain a strong rapid national and defense transportation system to meet the needs of both peacetime as well as wartime requirements.

The transportation system within the Department of Defense was designed to satisfy a broad spectrum of requirements, from our day-to-day peacetime logistic support, to strategic demands of contingencies to total war requirements. Since World War I until the years following World War II, the defense transportation system has had basically

²The term Total Transportation System implies a system comprised of both national and defense transportation components. Both components work in harmony to meet our national as well as our defense objectives.

the same problems. First, during World War I, the major problem was how to move sufficient tonnage with limited assets. The United States was virtually dependent upon foreign shipping at the outset of the war. However, as the war progressed, so did the shipbuilding program, which resulted in some 13.5 million tons of shipping capacity. Half of the tonnage moved by government-owned vessels, and the residual moved by some privately owned American ships and some foreign vessels.

Privately owned American vessels did make a substantial contribution in the wartime shipping efforts, but the war ended before these resources were fully mobilized [22:15].

The movement of bulk goods over land was met primarily by the railroads with some movement performed by motor freight. In December 1917, the government took complete control of the U.S. railroad system and the day-to-day operation of the railroad was accomplished by the Army.

After World War I came our second major problem: what would be the disposition of the massive transportation inventory? The Transportation Act of 1920 resulted in the termination of government railroad operation and return of the railroads to private ownership and control. Furthermore, the Merchant Marine Act of 1920 established a privately owned U.S. merchant marine to be used as a naval auxillary in times of war or national emergency (22:16).

With the advent of World War II, we faced the same problems as we faced during World War I--how to move sufficient tonnage by sea, land and now, air? The Maritime Commission was created in 1936 to expand sealift capability. From 1941 to 1945, more than 5,500 vessels were built to resupply our troops and allied forces (77:18). Railroads provided the bulk of the inland transportation movement and remained under private management. Again, motor freight carriers assisted in the movement of inland cargo, as did pipelines and barges. As stated earlier, this was an example of using the national transportation system to support defense needs. During World War II a significant amount of airlift was used for the first time. The airlift task was shared between the Air Transport Command and the Naval Air Service. After World War II, the same problems which had surfaced earlier still existed--what to do with a large inventory during peacetime (77:18-19)?

Today, defense transportation operations are carried out by three Transportation Operating Agencies under the policy, operational and planning guidance of JCS and Secretary of Defense transportation and logistics activities. The Transportation Operating Activities (TOAs) include the Military Airlift Command (MAC), the Military Traffic Management Command (MTMC), and the Military Sealift

Command (MSC). These commands, and the Secretary of Defense and JCS transportation organization will be discussed in later chapters.

Statement of the Problem

For more than twenty years, independent commissions, congressional committees, defense study panels, and similar groups have criticized the Defense Transportation System for the following reasons:

1. Lack of central direction.
2. Duplication and overlapping functions and responsibilities.
3. The economically wasteful operating policies and procedures (11:2).
4. Ineffective utilization of DoD-private transportation systems.

Mr. Clinton H. Whitehurst, Jr., author of The Defense Transportation System, 1976, states:

A problem may be defined as implying not opposing viewpoints, but rather a general agreement among the interested parties that some form of corrective action is needed. As a rule, opinions are not yet set, and the parties are willing to consider all proposed solutions [77:137].

Transportation has been a key to the history of our nation's military might. Since the United States' aim is to meet the current Department of Defense national strategy to be prepared to fight simultaneously "one-and-one-half wars," some of these problems will have to be solved

now! Transportation should take on added dimension to meet its vital increasing role of transporting sufficient armed forces rapidly enough in an emergency to protect our national interests. Because of the critical role of transportation in our national defense, it is important to study the evolution of the defense transportation system and analyze the cause and effect relationships of major problem areas within the present system. A thesis project conducted in 1968 at the School of Systems and Logistics, by Major Jack C. Ingle and Captain Dan B. Burden, Jr., entitled "Department of Defense Transportation: Evolution, Status and Problems," focused on this problem. Many important changes have occurred in the last fifteen years since that thesis was written, and the current thesis project is designed to update and carry forward the research effort.

Objective

The purpose of this thesis is to analyze the organizational developments of the transportation system within the Department of Defense since World War II, and to study the present system. Major problem areas will be identified and studied to show the cause and effect relationship, with emphasis given on the need and directions toward reorganization.

Related Studies

There have been many studies related to the organization and responsibilities of the Defense Transportation System within the Department of Defense in recent years (29:13-15).

1. In 1949, Herbert Hoover chaired a commission to study the organization of the Executive Branch of the government.

2. In 1955, Mr. Hoover again chaired a commission to stimulate thinking with regard to DoD transportation organization and operations.

3. Major General John P. Doyle, in 1961, chaired a study group to analyze transportation trends, organization, pricing, and the complex interrelationship with the economical and national survival pattern of the nation.

4. In 1964, Mr. Gilbert C. Jacobus accomplished a study entitled "Managing Transportation and the Impact of Automatic Data Processing--Present and Future."

5. A DoD study in 1964 resulted in the realignment of certain responsibilities pertaining to the operation of CONUS air and ocean terminals.

6. In 1965, the Conroy Report addressed the adequacy of mobility planning and operational organization for transportation at the DoD level.

7. In 1970, a Blue Ribbon Defense Panel pointed out that each of the Transportation Operating Agencies

shared overlapping and duplicative functions with the others. The panel concluded that the lack of traffic management integration contributes to the loss of efficiency and economy (11:77).

8. In 1975, the Senate Committee on Appropriation requested a report on the management of transportation within the DoD (11:79). During their hearings, the Committee found that:

No single organization in the Defense Department to date has indicated a capability or desire to address the overall management of logistical transportation--air, sea, and surface--in order to insure that there is efficient use of all three modes [11:79].

As a result of the Committee's request for a report on defense transportation, the JCS conducted a study of alternative organizational arrangements for control of the three TOAs (11:80). The JCS report concluded that no major deficiencies existed within the peacetime and wartime TOA organizational arrangements.

The most recent study was commissioned by the Deputy Assistance Secretary of Defense to analyze the DoD organization for Transportation and Traffic Management (1). This study, dated 10 September 1980, concluded that no single traffic manager existed for the DoD. Furthermore, overlapping and duplicative activities continue to cause unnecessary costs (1:I-3). The study, along with some of the other referenced studies, was primarily directed at

integrating the various services or bringing together a total Defense Transportation System so we can meet any national emergency.

Scope and Limitations

This study will be limited to an analysis of the Department of Defense and Transportation Operating Agency Organizations and responsibilities for defense transportation. At the DoD level, the transportation organizations within the Secretary of Defense and Joint Chiefs of Staff will be addressed. The three Transportation Operating Agencies (TOAs) studied include the single Managers for airlift, the Military Airlift Command (MAC); for sealift, the Military Sealift Command (MSC); and for surface transportation and traffic management, the Military Traffic Management Command (MTMC). The study also focuses on the way in which these key organizations combine to create strategic mobility for U.S. forces. This will include an analysis of the current strategic mobility enhancement programs and problem areas.

The internal transportation functions of the services and other DoD organizations, while important, are beyond the scope of the research.

Research Questions

The following questions guided the development of the research effort:

1. What have been the key developments leading to the present Secretary of Defense, JCS, and TOA Organizations? What are the responsibilities of these organizations within the Defense Transportation System?

2. What are the major problem areas within the Secretary of Defense, JCS and TOA organizations? Can cause and effect relationships be identified?

3. How do the transportation organizations combine to create strategic mobility capability? What are the current strategic mobility enhancement programs and problem areas?

4. Is there a need for further reorganization of the defense transportation entities studied in this research?

Research Methodology

The methodology used to answer the research questions involved extensive review of the literature, and informed interviews with key representatives of the transportation organizations being investigated. The literature reviewed included publications and directives from the Secretary of Defense, JCS, Joint Deployment Agency and the three TOAs. Articles from books and journals in the general literature were also used to gather background information. To complement the literature review, interviews were conducted with personnel in a variety of areas.

Additional background information was gathered through these discussions with personnel assigned to MAC, MSC, MTMC, JCS transportation study groups, the Joint Deployment Agency, and the Directorate for Transportation and Distribution Policy, Office of the Secretary of Defense.

The background material was then synthesized in order to focus on key organizational developments, problem areas and directions within the defense transportation system.

Overview of the Presentation

In Chapter II the transportation responsibilities of the Department of Defense will be described to include those of the Secretary of Defense and the Joint Chiefs of Staff. This should give the reader an understanding of the magnitude of the responsibilities at the DoD level.

Chapters III, IV, and V will cover the functional responsibilities, organization, and major problem areas of the Single Managers. These chapters are presented in the following order: (1) Military Airlift Command (MAC); (2) Military Sealift Command (MSC); and (3) Military Traffic Management Command (MTMC).

Chapter VI will address strategic mobility, its responsibilities and shortfalls. Results, conclusions and recommendations will be presented in Chapter VII.

CHAPTER II

SECRETARY OF DEFENSE AND JOINT CHIEFS OF STAFF TRANSPORTATION ORGANIZATIONS

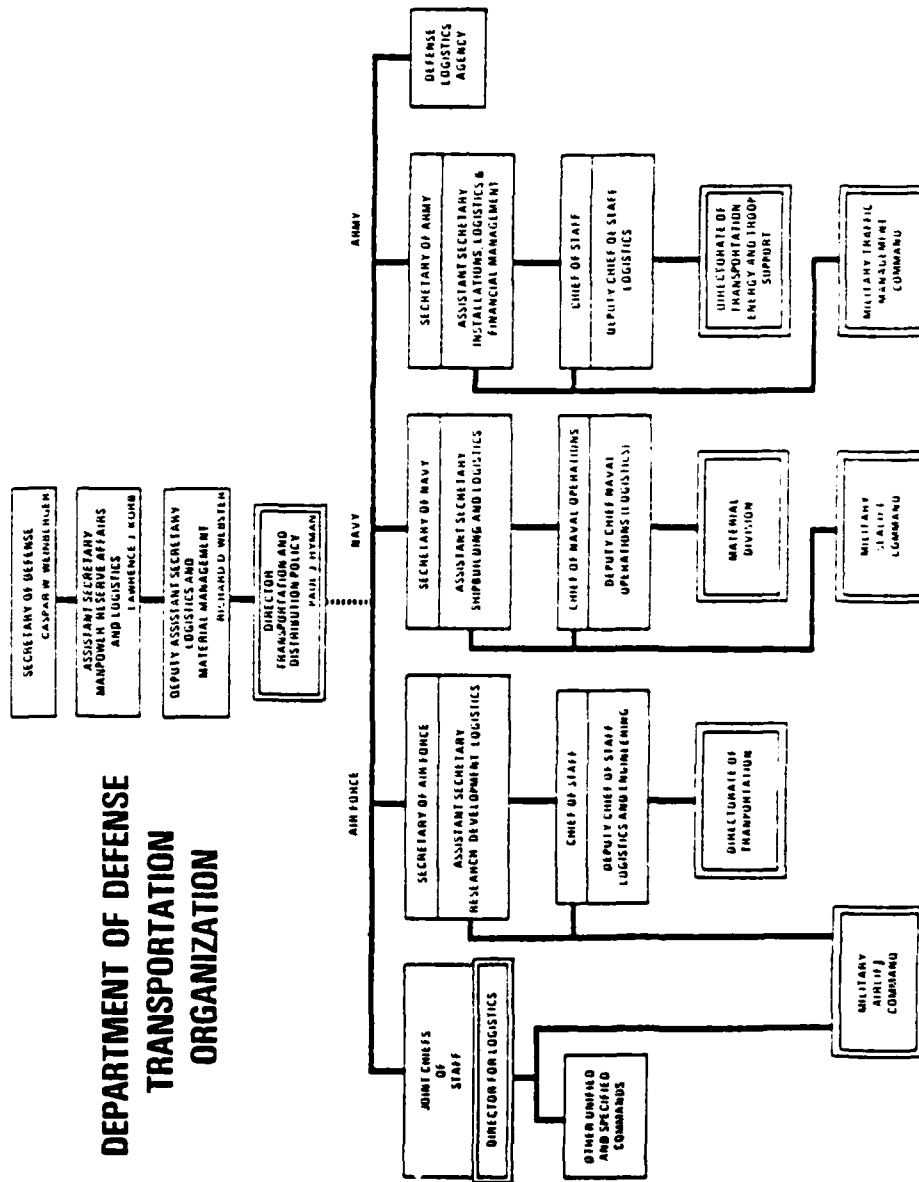
Introduction

The defense transportation system is big business--affected by inflation, the energy shortage, and the changes taking place in the commercial transportation industry. It is imperative that we keep pace with these changes to ensure the Department of Defense will be able to respond in an emergency anywhere in the world.

—Paul H. Riley, Deputy Assistant
Secretary of Defense, December
1975 [52:6]

The defense transportation system is certainly big business; in 1982 approximately \$8 billion was spent for the DoD's transportation network (56:15). This chapter presents an overview of the Department of Defense organizations that create policy for and manage this complex defense transportation system. Specific focus is given to the Office of the Secretary of Defense (OSD), the Director for Transportation and Distribution Policy within the OSD, and the Joint Chiefs of Staff transportation organizations shown in Chart 2-1. Later chapters will present the three transportation operating agencies that are also shown in this chart.

DEPARTMENT OF DEFENSE TRANSPORTATION ORGANIZATION



NOTE: DASHED LINE INDICATES TRANSPORTATION POLICY GUIDANCE

Chart 2-1. Department of Defense Transportation Organization (Source: Defense Transportation Journal, February 1982)

Office of the Secretary of Defense,
Civilian Control

The present Department of Defense transportation organization has evolved as a result of the many organizational changes which have taken place within the Department of Defense since the end of World War II [29:21].

First, and foremost, the authority of civilian service secretaries over the Army and Navy had weakened and at the same time the military, under the Joint Chiefs of Staff, had grown stronger (7:76-78). Second, Defense problems became more important and complex in the postwar years; and interservice struggles over funds, roles, and missions threatened to further diffuse the real lines of civilian control over the military. Finally, to further complicate the matter of civilian control, the erupting controversy over the unification of the armed forces (7:78).

In a special message to congress, 19 December 1945, outlining the arguments of unification, President Harry S. Truman included a strong statement on the subject of civilian control:

Civilian control of the military establishment . . . would be strengthened if the President and the Congress had but one cabinet member with clear and primary responsibility for the exercise of the control. . . . the need for joint action by the services and for objective recommendations on military matters has led inevitably to increasing the authority of the only joint organization and the most nearly objective organization that exists--the Joint Chiefs of Staff. But the Joint Chiefs of Staff are a strictly military

body. Responsibility for civilian control should be clearly fixed in a single full-time civilian below the President. This requires a Secretary for the entire Military Establishment, aided by a strong staff of civilian assistants. . . [29:22].

President Truman's message to Congress led to the passage of the National Security Act of 1947, which unified the military services under the control of one civilian cabinet member, the Secretary of Defense. The basic Act was amended in 1949, and other changes followed with the Reorganization Act of 1958. Ingle and Burden noted that the majority of these changes strengthened the Secretary of Defense position; it also provided him with stronger financial controls, and increased the number of assistant secretaries to handle special areas (29:22).

The Secretary of Defense is the principal assistant to the President responsible for all matters relating to the Department of Defense. All functions of the Department of Defense and its component agencies are performed under the direction, authority, and control of the Secretary of Defense.

The functions of the Department of Defense, as prescribed by higher authority, shall maintain and employ armed forces:

1. To support and defend the Constitution of the United States against all enemies, foreign and domestic.
2. To insure, by timely and effective military action, the security of the United States, its possessions, and areas vital to its interest.
3. To uphold and advance the national policies and interests of the United States.
4. To safeguard the internal security of the United States [70:10].

The organization of the Department of Defense includes the Office of the Secretary of Defense and the Joint Chiefs of Staff, the Military Departments and the Military Services within these departments, the unified and specified commands, and such other agencies as the Secretary of Defense establishes to meet specific requirements (70:10).

Directorate for Transportation
and Distribution Policy

The Secretary of Defense has the ultimate responsibility for defense transportation (29:23). However, the Secretary has delegated authority for defense transportation policy and program responsibilities to the Director of Transportation and Distribution Policy, through the Assistant Secretary for Manpower, Reserve Affairs and Logistics, and the Deputy Assistant Secretary for Logistics and Material Management as shown in Chart 2-2. The Directorate for Transportation and Distribution Policy is responsible for all Defense Department policies and programs pertaining to transportation of persons and things; packing, preservation, and packaging of supplies; and storage and distribution facilities, programs, and services, worldwide (56:15).

The Office of the Directorate for Transportation and Distribution Policy, directs, coordinates and participates in the development of policies, programs, systems, and procedures in the dynamic physical distribution arena.

DIRECTORATE FOR TRANSPORTATION AND DISTRIBUTION POLICY

OFFICE OF THE ASSISTANT SECRETARY OF DEFENSE
MANPOWER, RESERVE AFFAIRS, AND LOGISTICS

ROOM 3C838 Pentagon, Washington D.C., 20301

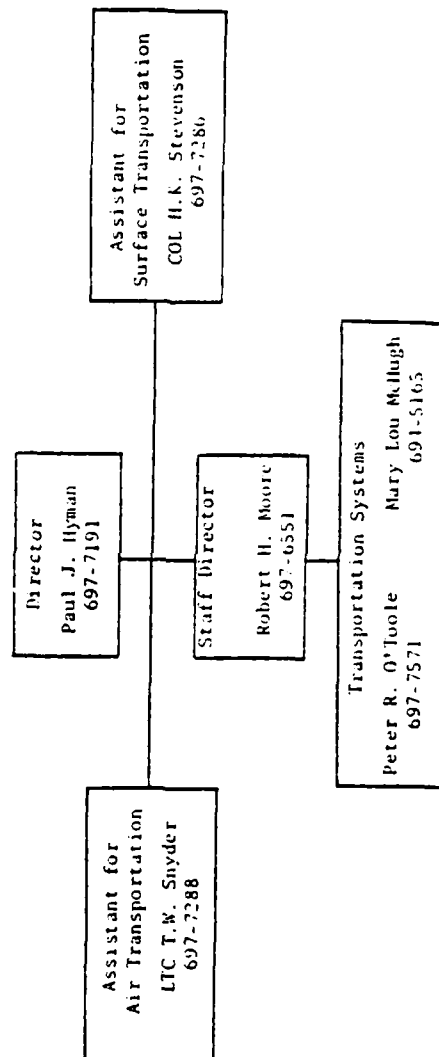


Chart 2-2. Directorate for Transportation and Distribution Policy, Office of the Assistant Secretary of Defense Manpower, Reserve Affairs, and Logistics (Source: Defense Transportation Journal, February 1982)

The Director administers and participates in a wide range of programs designed to:

1. Assure the readiness of transportation and distribution facilities to support the full range of contingencies.

2. Promote harmony and coordination among the transportation operating agencies, the Military Airlift Command (MAC), Military Sealift Command (MSC), and Military Traffic Management Command (MTMC) and the defense shippers.

3. Reduce defense transportation costs while assuring a viable mix of organic and commercial capabilities to meet strategic mobility requirements (56:15).

Moreover, the Director has sponsored or supported important ongoing initiatives such as the advancement of containerization and intermodal transportation management, a vast program examined both domestically and in conjunction with our allies; improvement to sealift readiness; passenger and travel management improvement programs; and the enhancement of industrial preparedness through increased communication between industrial traffic managers and defense traffic managers (56:15). The sealift readiness improvement program will be discussed in greater detail in Chapter IV.

The Joint Chiefs of Staff

Background

The Joint Chiefs of Staff came into existence as the result of the decision by President Roosevelt and Prime Minister Churchill to establish a supreme British-American military body, known as the Combined Chiefs of Staff, for the strategic direction of World War II. This decision was made during the ARCADIA Conference, the military and political consultations held in Washington, December 1941 to January 1942, following the Japanese attack on Pearl Harbor (69:pp.I-1-2 to I-1-9).

The Joint Chiefs of Staff (JCS) took form as the U.S. representatives on the Combined Chiefs of Staff, where they sat as colleagues and counterparts of the already existing British Chiefs of Staff Committee. In addition, the Joint Chiefs of Staff soon began to function as a corporate leadership for the American military structure, holding their first meeting as an organized body on 9 February 1942 (69:p.I-1-1). At the national level, the Joint Chiefs of Staff absorbed and considerably extended the functions of the Joint Army and Navy Board that had handled interservice cooperation and joint war planning in the prewar period. The Joint Chiefs of Staff became the prime agency for the coordination and strategic direction of the Army and Navy, under immediate responsibility to the President with regard to war plans and strategy;

military relations with allied nations; the munitions, shipping, and manpower needs of the Armed Forces; and matters of joint Army-Navy policy. They also supervised the operations of the Office of Strategic Services and the Army and Navy Staff College (69:p.I-1-1).

During World War II the Joint Chiefs of Staff operated without a charter or other founding document. The President himself refused to issue a formal definition of JCS duties and functions, saying that a written charter might hamper the Joint Chiefs of Staff in extending their activities as necessary to meet the requirements of the war. Essentially, the Joint Chiefs of Staff existed to assist the President in the exercise of his powers as Commander in Chief (69:p.I-1-1).

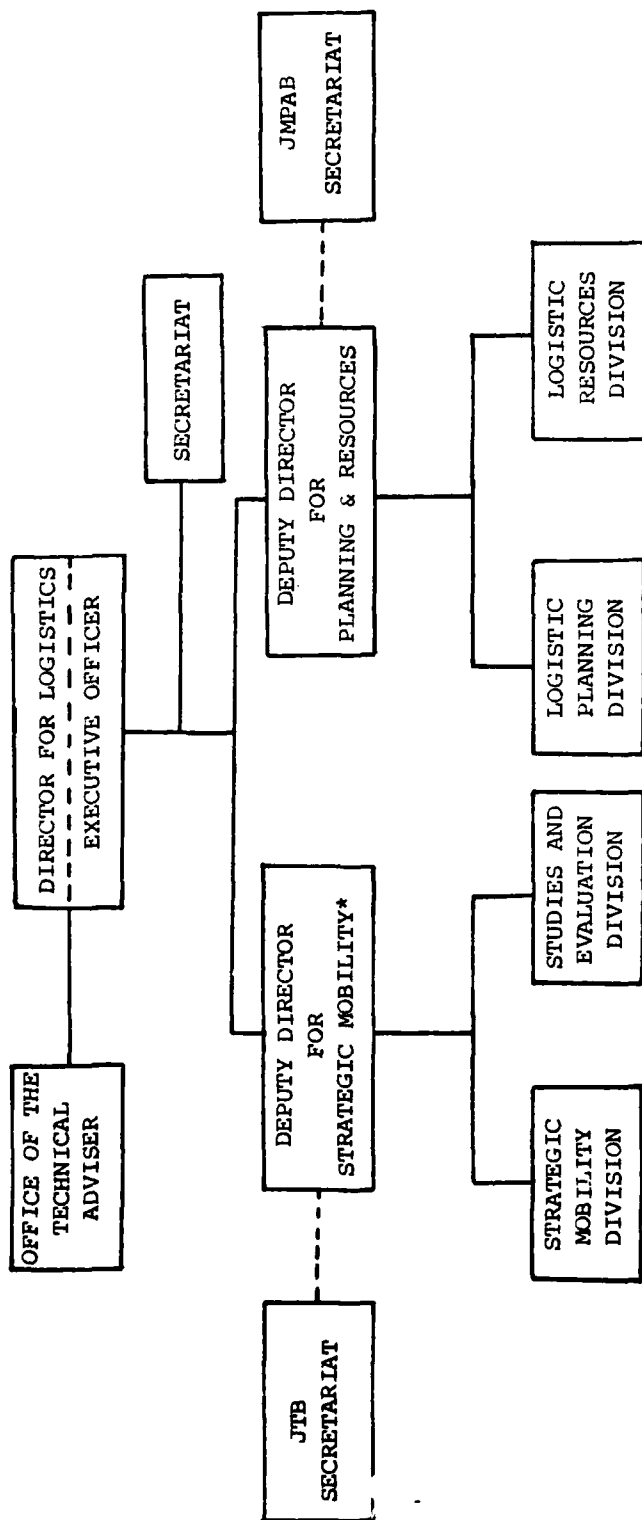
The wartime Joint Chiefs of Staff organization continued to operate in the postwar period until 17 September 1947, the effective date of the National Security Act of 1947. That Act established the JCS within the National Military Establishment and designated the Joint Chiefs as "the principal military advisers to the President and the Secretary of Defense [69:p.I-1-6]." The Act further provided for a Joint Staff of not more than 100 officers operating under a Director appointed by and responsible to the Joint Chiefs of Staff. In its initial form, the Joint Staff had three main components, headed by Deputy Directors for Strategic Plans, Intelligence, and Logistic

Plans. The Joint Secretariat and certain other elements of the JCS organization were not counted as part of the Joint Staff.

Amendments to the National Security Act of 1947, enacted in August 1949, redesignated the National Military Establishment as the Department of Defense and generally strengthened the authority and control of the Secretary of Defense over its components. The amended Act names the Joint Chiefs of Staff as principal military advisers to the National Security Council, as well as to the President and the Secretary of Defense, and it raised the permissible number of Joint Staff officers to 210. At present, the statutory limit is 400 officers (70:p.I-1-6).

The JCS organization changed from including agencies to the Joint Staff into an organization having numbered J-Directorates shown in Chart 2-3. These directorates were organized to deal with their recognized area of responsibility and to work effectively with the similar staff structures of the unified commands. Specific attention will be focused next on the Logistic Directorate (J-4), shown in Chart 2-4.

The Director of Logistics is charged with providing assistance to the JCS in carrying out their logistics responsibilities as advisors to the National Command Authority (NCA) and as the Military Staff in the chain in operational command with respect to the unified and specified commands. At present, the functions of the JCS, Logistics Directorate (J-4), under the authority and



NOTES: * Principal Deputy
 --- Admin Support

Chart 2-4. Logistics Directorate (J-4)
 (Source: JCS Pub 4, 1980)

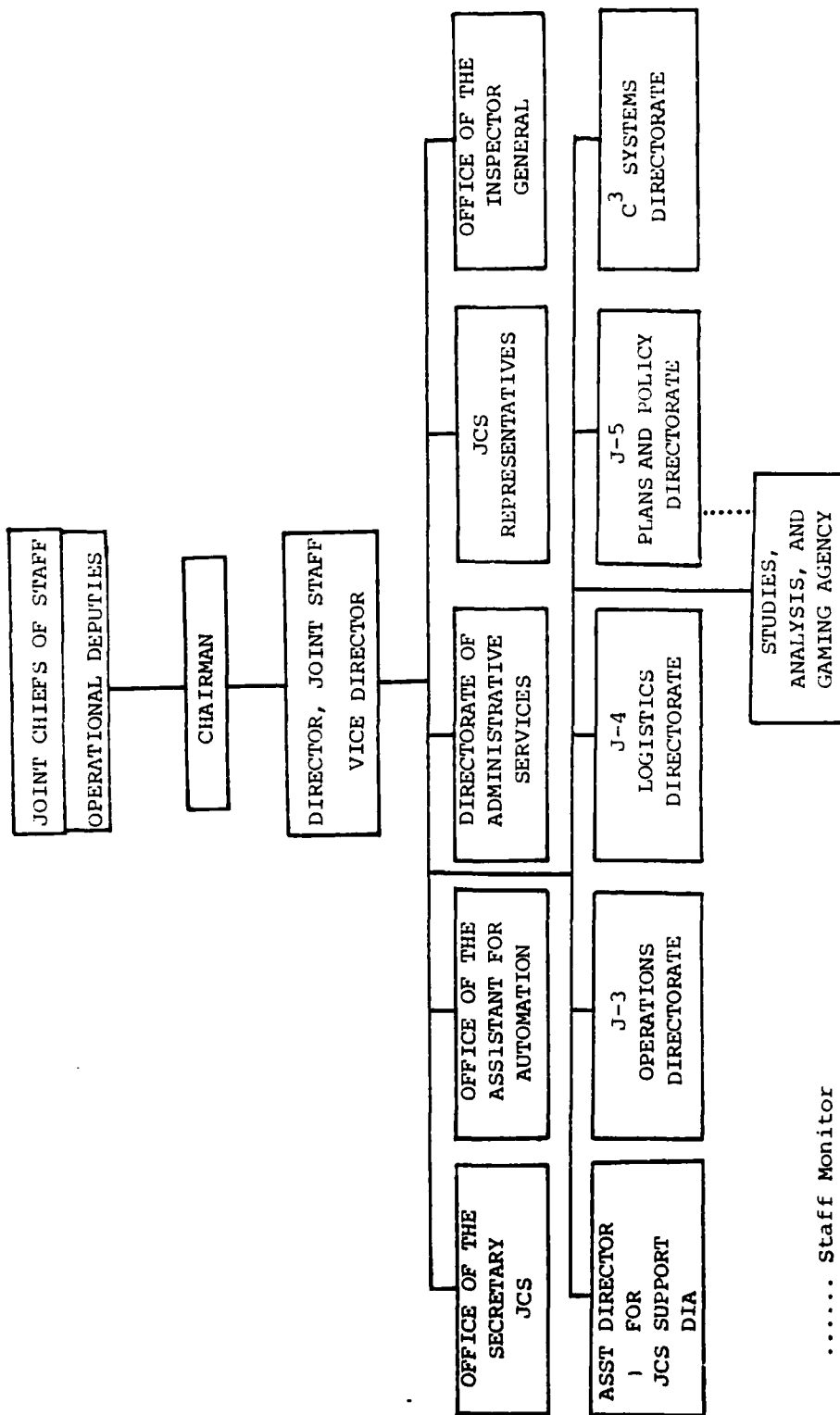


Chart 2-3. Internal Organization of the Joint Chiefs of Staff
(Source: JCS Pub 4, 1980)

direction of the Chairman, JCS, and subject to the supervision and guidance of the Director, Joint Staff, include staff supervision and cognizance over joint logistic, strategic mobility, and mobilization matters.

None of the assigned functions shall infringe on the prerogatives of the Military Departments/Services or on their assigned responsibilities to provide logistic support to their forces [69:p.III-4-3 .

Specifically, the Director for Logistics shall:

1. Serve as the principal adviser to the Joint Chiefs of Staff on joint and combined logistic matters.
2. Prepare for the Joint Chiefs of Staff joint logistic studies, estimates, and plans. Recommend to the Joint Chiefs of Staff assignment of logistic responsibilities to the Military Services and the DLA in accordance with these plans.
3. Prepare for the Joint Chiefs of Staff the logistic objectives and the strategic mobility resource requirements necessary to support the strategy and force structure recommended by the Joint Chiefs of Staff in the Joint Strategic Planning System (JSPS).
4. Prepare for the Joint Chiefs of Staff recommendations for appropriate logistic guidance for the Military Services which, if implemented, will result in logistic readiness consistent with the approved strategic plans.
5. Review and analyze guidance and decisions by the Secretary of Defense to assess their impact on the logistic support available to the unified and specified commands.
6. In collaboration with the Director for Plans and Policy (J-5), prepare recommendations on logistic and strategic mobility matters for consideration by the Joint Chiefs of Staff for submission to the Secretary of Defense in connection with the DoD Planning, Programming, and Budgeting System (PPBS).
7. Prepare for the Joint Chiefs of Staff joint logistic planning guidance for use by commanders of unified and specified commands, the Military Services, and DLA, as needed, in preparing their respective detailed plans.
8. Review the major materiel and other logistic requirements of the Armed Forces in relation to joint strategic and logistic plans.

9. Review logistic plans and the logistic aspects of operation plans of the commanders of unified and specified commands, in collaboration with the Director for Operations (J-3) and the Director for Plans and Policy (J-5), and make recommendations to the Joint Chiefs of Staff as to the adequacy, feasibility, and suitability of such plans for the performance of assigned missions.
10. Ascertain the adequacy of the logistic support available to the unified and specified commands to execute the general war and contingency plans, including the assets available through industrial mobilization.
11. Report to the Joint Chiefs of Staff significant logistic deficiencies affecting the capability of military forces involved in current operational activities of the commanders of the unified and specified commands.
12. Prepare for the Joint Chiefs of Staff, when required, a statement of the worldwide logistic posture in relation to the tasks assigned to the unified and specified commands. This statement will be based on information furnished by the commanders of unified and specified commands and coordinated with the Military Services.
13. Serve as the OJCS point of contact within the Joint Staff for matters concerning joint facilities planning including rights, authorizations, and arrangement of facilities in support of joint planning.
14. Serve as the OJCS point of contact for military assistance matters that are primarily logistic in nature; e.g., cooperative logistic support of approved programs. In collaboration with the Director for Plans and Policy (J-5), support the preparation of joint plans, policies, studies, and reports on cognizant matters pertaining to military assistance programs.
15. Serve as the office of primary responsibility within the OJCS for strategic mobility, including strategic movement planning and operations.
16. Prepare for the Joint Chiefs of Staff strategic mobility policy and guidance for use by commanders of unified and specified commands, the Military Services, and the transportation operating agencies in preparing their detailed plans. Review and assess for the Joint Chiefs of Staff the strategic movement aspects of unified command operation plans.

17. Maintain Joint Staff cognizance for logistic activities relating to the Military Airlift Command, Military Sealift Command, and Military Traffic Management Command. Monitor and evaluate all aspects of strategic mobility planning and operations to insure that adequate capability is available to execute assigned missions.
18. Monitor and evaluate for the Joint Chiefs of Staff the transportation and logistical aspects of unit deployments associated with the execution of operation plans and strategic mobility activities associated with crisis situations, civil defense, disaster relief, and similar activities. Provide the Joint Chiefs of Staff logistic appraisals for each option of the Crisis Action System being evaluated.
19. Participate, as directed, in the preparation of logistic aspects of combined plans for military action in conjunction with the armed forces of other nations.
20. Conduct the joint logistic and strategic mobility studies, evaluations, and analyses associated with assigned functions.
21. Supervise the Logistic Coordination Center (LCC) insuring that the LCC exercises its responsibilities as the point of contact for all logistic and strategic mobility matters during crisis situations and exercises in support of the OJCS.
22. Provide the OJCS representative to international/ bilateral boards and agencies primarily concerned with logistic or strategic mobility matters, including the NATO Planning Boards for Surface Transportation, Ocean Shipping, and Civil Air Planning.
23. Maintain active liaison with appropriate offices of the OSD.
24. Determine the requirements for logistic support of the headquarters of unified and specified commands and US elements of international commands and recommend to the Joint Chiefs of Staff the Military Department(s) responsible for providing such support.
25. Represent the Joint Chiefs of Staff as a member of the Military Logistics Council.
26. Serve as Chairmen, Joint Materiel Priorities and Allocations Board, who recommends the allocation of materiel resources among the Military Departments and other Defense agencies, reviews and acts upon requests for modification in force activity designators, and reviews recommendation for inclusion in the Master Urgency List. -

27. Provide the chairmen and administrative support for the Joint Transportation Board (JTB) and recommend allocation of strategic mobility resources in support of activities of the Joint Chiefs of Staff.
28. Provide the point of contact within the Joint Staff for the OSD concerning those aspects of international logistics that affect the logistic readiness of US Forces, including rationalization and standardization.
29. Provide members to other joint logistic boards and study groups, as may be required, and provide Logistics Directorate personnel for execution of joint logistic operations in exercises and emergencies.
30. Serve as the OJCS point of contact for consideration of all petroleum matters originating within the OJCS or referred to the Joint Chiefs of Staff.
31. Serve as the OJCS point of contact for all actions pertaining to the Defense Acquisition Regulatory System (DARS).
32. Serve as the OJCS point of contact for mobilization planning and its interface with deployment.
33. Serve as the OJCS point of contact for the Joint Deployment Agency [69:pp.III-4-3 to III-4-6].

The J-4 organization includes two activities involved with defense transportation, the special assistant for Strategic Mobility and the Joint Transportation Board, which are discussed in the next two sections.

Special Assistant for Strategic Mobility

During Robert S. McNamara's tenure as Secretary of Defense from 1960 to 1968, efforts were made to improve DoD management of transportation, with the greatest attention given to strategic mobility in JCS planning. Secretary McNamara directed a study to determine the need for a strategic mobility office in 1965 and the study committee was placed under the leadership of Air Force Major General

James C. Sherrill, then serving on the JCS as Deputy Director for Transportation. The following March, a new position, the JCS Special Assistant for Strategic Mobility (SASM), was created and General Sherrill was selected to fill the position (76:128-134).

The Special Assistance for Strategic Mobility consisted of a Special Assistant, a Deputy Special Assistant, an Executive Officer, and appropriate subordinate divisions, as shown in Chart 2-5. SASM's missions include:

1. The analysis, evaluation, and monitoring of all aspects of strategic movement planning and operations with the objective of attaining an "overview" whereby problems and the achievement of an effective strategic movement posture would receive optimum consideration.

2. Joint transportation planning, policy, and guidance, including matters pertaining to joint and international transportation operations.

3. The administration and support of the Joint Transportation Board and its elements (29:27).

Moreover, SASM provided a single point responsibility and authority in the development of information, advice, and recommendations on strategic movement matters. SASM's effectiveness was questionable since the charter did not give the organization any control functions to allocate transportation resources. Furthermore, SASM was not

How Strategic Mobility Experts Are Organized

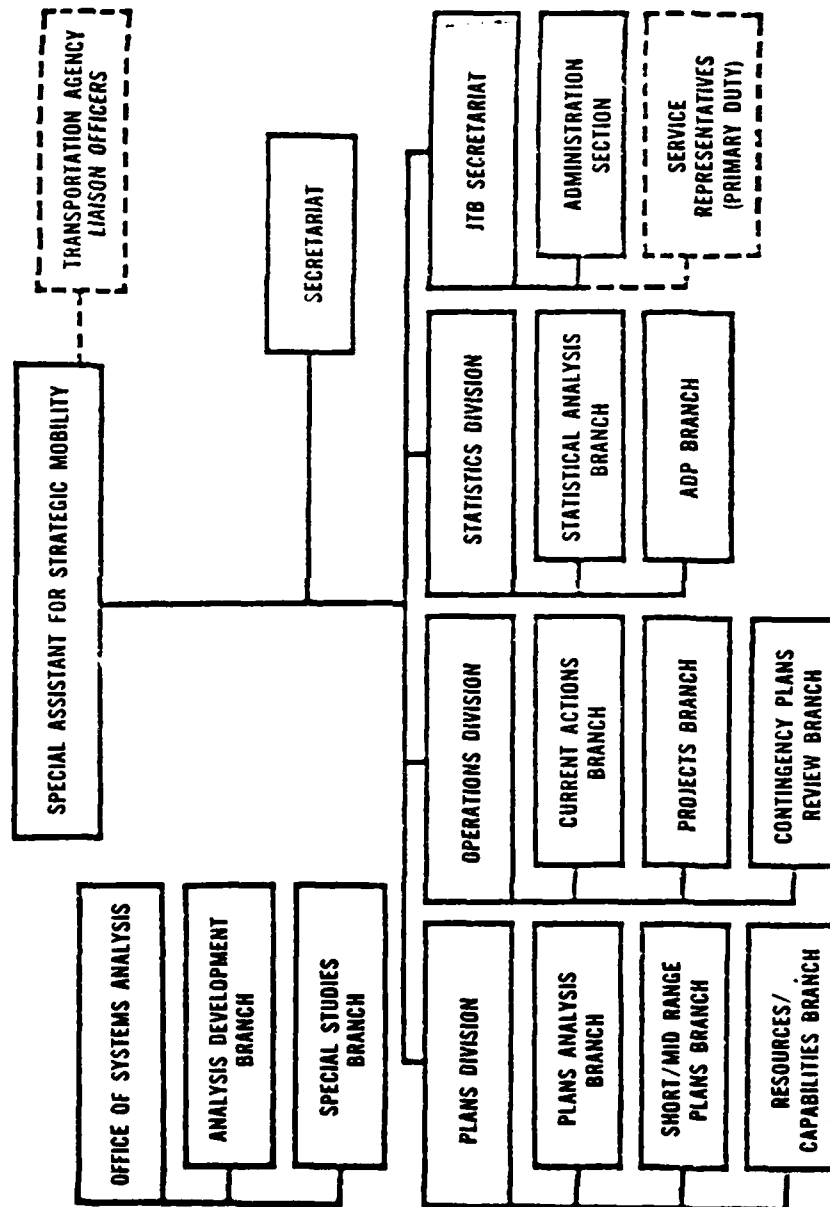


Chart 2-5. How Strategic Mobility Experts are Organized
(Source: National Defense Transportation Journal
September-October, 1966)

universally accepted within the DOD. In 1969, a reduction in force was directed for the office of the Joint Chiefs of Staff, and the Deputy Chief of Staff for Logistics was appointed the Deputy Director for Strategic Mobility to absorb SASM's missions (11:76-77).

The Joint Transportation Board

The mission of the Joint Transportation Board (JTB) is to assure that transportation resources assigned or available to the Department of Defense are used to achieve the objectives of responsiveness and effectiveness (68:p.3-1). The JTB, as an agency of the Joint Chiefs of Staff, acts in their behalf on transportation matters (29:28). However, on matters where service members of the JTB have divergent views, the unresolved situation is referred to the Joint Chiefs of Staff for decision (68:p.3-1). The JTB membership is composed of:

- a. Chairman-Deputy Director for Strategic Mobility, who also represents the Logistics Directorate, OJCS.
- b. Principal Members:
 1. Representing the Operations Directorate, OJCS, Vice Director for Operations, Joint Staff.
 2. Representing the Plans and Policy Directorate, Director for Plans and Policy, Joint Staff.
 3. Representing the U.S. Army--Director, Army Transportation, ODCS, Logistics.
 4. Representing the U.S. Navy--Director, Material Division, DCNO (Logistics).
 5. Representing the U.S. Marine Corps--Deputy Chief of Staff for Installations and Logistics.

- 6. Representing the U.S. Air Force--Director of Transportation, DCS/S&L.
- c. Secretary of the JTB--Chairman--JTB Secretariat.
- d. Secretary/Recorder of the JTB. Secretary/Recorder of the JTB Secretariat [68:p.3-1].

According to the Logistics Directorate, Office of the Joint Chiefs of Staff, the JTB will:

- a. Maintain continuing cognizance over transportation requirements and capabilities and insure information is available to determine and recommend resolution of problems which may cause an imbalance in transportation requirements and capability.
- b. Recommend to the Joint Chiefs of Staff, or direct, as appropriate, courses of action with respect to allocation of airlift, sealift, and surface capabilities and/or modification of procedures based on the following considerations.
 - 1. When requirements submitted by the Services exceed capabilities to a significant degree, and/or agreement as to space assignments proposed by the TOAs cannot be reached, the matter will be referred by the Services or the TOAs through their respective Services, to the JTB. The JTB will review the requirements of the Services against the total requirement for all forms of transportation and evaluate competing claims for available capability.
 - 2. The J-3 and J-4 representatives will furnish guidance on current and forecast joint operational and logistic priorities of the areas or forces involved.
- c. When required, evaluate courses of action being taken by the TOAs and Services to resolve a transportation situation or problem and make appropriate recommendations to the Joint Chiefs of Staff, TOAs, or Services.
- d. Provide an interface between the Services, the TOAs, and the OJCS on matters concerning transportation.
- e. Establish the "JCS-Assured Logistics Airlift" and the "JCS-Assured Logistics Sealift" and periodically review them for accuracy [68:pp.3-2 to 3-3].

Problem Areas

Until March of 1979 there was no single agency to coordinate and monitor the movement of mobilized U.S. armed

forces, both active and Reserves, within the United States and to overseas areas. The Joint Deployment Agency (JDA) was established in 1979 as the JCS activity to improve wartime transportation management and coordination. The Director, JDA, a four-star general, is dual-hatted as the Commander in Chief, United States Readiness Command, and is headquartered at MacDill Air Force Base, Florida. The JDA was established to plan, coordinate and monitor the movement of mobilized U.S. armed forces, both active and Reserve, within the United States and to overseas areas. These forces are designed to reinforce U.S. unified and specified commands during contingencies, exercises or war. Successful execution of this mission ensures that combat forces and material are provided, when needed, to a commander conducting operations anywhere in the world.

The complexity and magnitude associated with the mobilization and deployment planning and coordination has long been recognized by those organizations involved in deployment planning. The Joint Deployment Agency coordinates common user land, sea and airlift for the planning and movement of forces, equipment, and supplies. As a centralized coordinator, the JDA assembles masses of timely data relating to the strength, readiness, equipment status and deployability of all military combat and support forces. This information is constantly refined and updated by the JDA staff and is continuously available to all the unified

and specified commands for use in updating their plans. JDA's role is to ensure that people and material can be moved to support military objectives. One way this is accomplished is through an operations plan (OPLAN) refinement process which identifies specific forces and equipment included in an OPLAN, adjusts resupply and reinforcement schedules, and updates the characteristics of material needing transport. By matching validated requirements of the overseas commands with actual capabilities of the Transportation Operating Agencies, OPLANS accurately list how a specific unit or material will move and to which port on what day. When a contingency develops which requires military action and no plan is in existence, the Agency coordinates deployment planning efforts using time-sensitive planning procedures (13; 22:71-74; 59; 60).

Actual movement of U.S. forces will be accomplished in coordination with the three established TOAs; the Military Traffic Management Command for surface movement within the Continental United States, the Military Airlift Command for aerial movements, and the Military Sealift for movement by sea. The JDA has established a Joint Deployment Systems Users' Group comprised of representatives of the JCS, unified and specified commands, TOAs, the military Services and designated Department of Defense agencies. The primary purpose of the Users' Group is to provide a forum for exchange of information and ideas and to

develop recommendations for the Joint Chiefs of Staff to achieve overall improvements in movement and deployment planning, processes and capabilities. With the creation of the JDA the problem of coordination and monitoring the movement of mobilized U.S. armed forces was somewhat eliminated. However, the transportation operating agencies which oversee the transportation systems which the JDA is designed to coordinate, are decentralized and, in the case of MSC and MTMC, perform duplicative and overlapping functions. This impedes the coordination planning and monitoring functions of the JDA in preparing for and executing strategic deployments. Until centralization and integration of functions and management information systems occur, force deployment and sustainment will be impeded (13; 22:71-74; 59; 60).

Efforts to reorganize the transportation operating agencies into a centralized transportation command have been considered since World War II, but none led to any change. Most recently, the complex and bureaucratic nature of the Defense deployment community drew congressional attention during the FY 1981 Appropriations process (68:18). In December 1980, Congress requested that the Secretary of Defense submit a plan for centralizing defense transportation. The JCS subsequently advised OSD that the issue was larger than organizational duplication and traffic management and established a Special Task

Force to develop ways to strengthen the then existing JDA and the TOA organizational framework. The terms of reference for the JDA were strengthened and it now performs the function previously described. The remaining issue of TOA organization framework will be discussed next.

The special task force, responding to the Deputy Secretary of Defense tasking Memorandum (JCSM-284-81), reviewed the functions, organizational structures, and relationships of the TOAs in the transition from peace to wartime and in their support of wartime movement requirements. The Special Task Force found the airlift system, operated by MAC, encompassed the functions, controls, and operational interface necessary to meet wartime requirements. However, the responsibility for management of the surface movement system was divided between MSC and MTMC, particularly with regard to routing, booking, Automated Data Processing (ADP) development, and operating responsibilities. The fragmented management, duplication and overlap of functions can be mainly attributed to growth in intermodalism. According to Major Thomas C. Harrington:

During the past decade there has been a considerable shift toward containerization and intermodal transportation systems. For example, in 1969, 80 percent of the U.S. export oceanborne dry cargo was transported via break bulk vessels, the remainder moving on container ships. These statistics almost reversed by 1978, when 72 percent of the export dry cargo moved on containerships [22:27].

According to Lt Col Marshall E. Daniel, Jr., this growth calls for integration of the elements of the Defense transportation organizations: Also, according to Daniel,

Recent developments in transportation technology, such as the dramatic impact of containerization, have forced changes in both the organization and procedures in use in modern transportation systems. The development of an intermodal system stemming from the significant rise in the use of containers in the DoD has provided not only the justification and opportunity, but also the imperative, for significantly increased integration and centralization of the various elements of the Defense Transportation System [11:82].

Based on their findings, the Special Task Force recommended to the JCS that the MSC and MTMC be integrated into a single command responsible for surface transportation and traffic management functions. The JCS approved the recommendation on 24 July 1981, and Deputy Secretary of Defense Carlucci approved the concept on 16 September 1981 (22:49). The JCS was subsequently tasked to plan for the integration by 1 October 1982. However, there have been delays pending further Congressional hearing. More discussions of this reorganization will be provided in subsequent chapters.

Summary

Transportation within the Department of Defense is complex and involves the organization of agencies at various levels which interface with all Services. The Joint Chiefs of Staff have the vast responsibility for reviewing and evaluating transportation requirements and capabilities and

allocating resources when required. The success of any system depends on total coordination, cooperation, and the ability to change. It is important to note that the Secretary of Defense and the JCS are involved in making DTS more effective through organizational change. This is a difficult problem because of the Services' desire to maintain control as noted by Ester T. White:

The present arrangement of single managers for each mode of transportation provides a reasonably high level of service; nevertheless, indications are that greater efficiency and economy could be achieved by eliminating redundant headquarters and unnecessary duplications of service, and by further revising shipment controls to take advantage of proven technological advancements. The military departments insist, and with good reason, that they must control those elements of transportation required to accomplish their basic missions, and generally each military department has resisted moves to reduce traditional autonomy over the modes of transportation it operates [76:128].

CHAPTER III

DOD TRANSPORTATION BY AIRLIFT

Introduction

Air superiority is the first essential for effective offense as well as defense. A modern, autonomous, and thoroughly trained Air Force in being at all times will not alone be sufficient, but without it there can be no national security. Air power includes a nation's ability to deliver cargo, people, destructive missiles, and war-making potential through the air to a desired destination to accomplish a desired purpose.

—General Henry H. Arnold
Commanding General of the Army
Air Force, 12 November 1945 [4:305]

General Arnold's statement clearly addresses the challenge faced by the Military Airlift Command (MAC) today; the ability to move massive amounts of cargo and people to far reaches of the world in minimum time to accomplish desired objectives. The purpose of this chapter is to describe the organization which is responsible for several missions which serve the Air Force and the Department of Defense: deployment, employment and redeployment of combat forces and their support equipment; logistical resupply of these forces; aeromedical evacuation; presidential airlift; aerial search, rescue and recovery of downed flyers; weather reconnaissance and atmospheric sampling; acquisition and dissemination of

atmospheric and space environment information; and humanitarian and combat documentary photography and other audiovisual services. Additionally, the command contracts for long-term commercial airlift for the Department of Defense.

MAC's specified command status applies to airlift matters and does not include the technical services of MAC. Accordingly, this chapter will only deal with the airlift matters. Further, this chapter will not address the United States Air Force's service responsibility for administrative airlift and logistics support in day-to-day operations.

Background

Ingle and Burden noted that during World War I, military air transportation was provided by the United States Army Air Forces and the Navy on both the Pacific and European fronts (29:35). These authors further noted that as a result of heavy airlift requirements and the lack of sufficient aircraft, the President of the United States directed the Secretary of War to assume control of transport aircraft within the civil aviation industry. Therefore, this gave the Army Air Forces and the Navy the additional capability to meet the combat requirements (29:35).

In June 1948, the Secretary of Defense consolidated the long-range airlift fleets of the Air Force and the Navy into one noncombatant command, the Military Air

Transport Service (MATS), under the control of the Secretary of the United States Air Force (15:5). This organizational change was one of the first applications of the Secretary of Defense's authority outlined in the National Security Act of 1947 (18:56-60). The character of the MATS mission was similar to that of a commercial airline transporting passengers and cargo on scheduled flights. MATS's first major operation was the 1948 Berlin Airlift. This operation provided the military and civil leaders of the United States knowledge that airlift has an enormous potential impact for accomplishing a desired purpose, and that present aircraft design was unsatisfactory to transport vast amounts of cargo (18:5). MATS continued to provide military airlift support during the 1950s, a period characterized by "brush fires," and widely scattered contingencies (39:26).

The next step in the evolution of the Military Airlift Command occurred when the Secretary of Defense signed a directive designating the Secretary of the Air Force as single manager for Military Airlift services on 7 December 1956 (29:38). At that time, MATS was named the single manager operating agency for airlift services (11:76). According to Ingle and Burden, the Secretary of Defense directive included the following objectives.

1. To insure that approved D-Day and wartime airlift requirements of DoD are met.

2. To provide that level of military airlift capability and organizational structure required to meet D-Day and wartime demands, augmented as required by the use of available commercial airlift.

3. To integrate into a single military agency all transport aircraft engaged in scheduled point-to-point service.

4. To provide an effective and economical airlift service to support the requirements of the Armed Forces under all conditions.

5. To develop and guide the peacetime employment of airlift services in a manner that will enhance the wartime capability, achieve greater flexibility and mobility of forces, and increase effectiveness and economy (71:1). "The directive also included the provision that the Air Force would provide airlift for all DoD agencies and for other authorized agencies of the United States [71:1]."

In July 1958, funding for airlift services was established under the Airlift Services Industrial Fund (ASIF), with an initial working capital of \$75 million (11:36). The ASIF is a revolving fund in which provisions for airlift service are paid from the fund. Airlift users then reimburse the fund from their own appropriated funds for airlift transportation.

As a result of supporting widely scattered crises during the 1950s, it became recognized that MATS would be

needed to provide fast reaction in the deployment of highly mobile forces able to deter, contain or terminate conflicts posing a threat to the United States. The advent of modern jet airlift aircraft gave MATS this ability to position these forces where and when they were needed. Moreover, this evolution was reflected in 1965 when Congress directed that the command be named the Military Airlift Command (MAC), and placed on a par with other Air Force combat elements. On July 1, 1966, MATS officially became MAC (77:76).

Specified Command status for MAC was approved by the President in December 1976, and became effective on February 1, 1977. As a specified command, the Commander in Chief, MAC, reports to the President, through the Secretary of Defense, during wartime or periods of crisis, and to the Joint Chiefs of Staff during exercises, and as otherwise necessary to insure operational support to the other specified and unified commands. The establishment of MAC as a specified command provided better crisis management of airlift resources. It also simplified and streamlined command relationships and made the Commander in Chief of MAC directly responsible to the National Command Authorities as are the Commanders in Chief of the other specified and unified commands.

On December 1, 1974, MAC became responsible for all C-130 aircraft within the continental United States,

accepting the tactical airlift mission from the Tactical Air Command (TAC). On March 31, 1975, MAC also assumed responsibilities for overseas C-130 aircraft resources. Involved in this transfer were the C-130 airlift resources of U.S. Air Forces in Europe, Pacific Air Forces, U.S. Air Force Southern Command, and the Alaskan Air Command. The consolidation of intertheater airlift operations was aimed at increasing efficiency and flexibility of total airlift capability and combining like airlift support functions. The C-130s were added to MAC's longer-range heavy airlift cargo jets, the C-140 and C-5. This addition of about 290 C-130 Hercules brought MAC's active transport inventory to about 640 aircraft (see Table 3-1).

TABLE 3-1

MILITARY AIRLIFT COMMAND

T/UH-1F	27	C-12	5
UH-1N	49	C-130	259
HH-1	22	HC-130	28
C/HH-3	46	WC-130	13
HH-53	21	C-135	13
C-5	77	C-137	5
C-6A	1	C-140	11
C-9	23	C-141	270
CT-39	113		
TOTAL		983	

NOTES: 1. As of 30 November 1981.

2. Numbers are total active aircraft inventory.

(Source: Defense Transportation Journal, February 1982).

Military Airlift Command

Functional Responsibilities

The Military Airlift Command is presently operating under the functional responsibilities and organizational structure outlined in DoD Directive 5160.2, dated 17 October 1973 (71:1-10). According to Lieutenant Colonel Marshall E. Daniel, Jr.,

The mission of the Military Airlift Command (MAC) is to maintain in a constant state of readiness, the military airlift system to perform all tasks assigned by the Joint Chiefs of Staff (JCS). The military airlift system consists of both strategic and tactical airlift, as well as operating bases and worldwide air lines of communication for support of strategic and tactical airlift deployment and supply operations [11:39].

DoD Directive 5160.2 outlines the functions of MAC, as follows:

1. Within the Mission of MAC, provide transportation planning support to the Organization of the JCS, the Unified and Specified Commands, the Military Services, and the DoD agencies in support of the plans of the JCS and other military operations as required.
2. Provide airlift service support to the DoD components as required.
3. Develop, establish, and operate an integrated transportation information data system to support the mission of the Agency.
4. Develop plans to assure the efficient use and control of military-owned and commercial air transportation resources and capabilities made available to the DoD under mobilization or other emergency conditions other than LOGAIR/QUICKTRANS.
5. Based on evaluated requirements submitted by the DoD Components, prepare long and short range forecasts of airlift requirements and match them with airlift capabilities. In accordance with procedures established by the OJCS, submit requirements and capabilities to the OJCS together with

recommendations as appropriate to assure a proper balance.

6. Provide necessary information required by MTMTS or other military commands or activities exercising traffic management functions for the diversion of passenger groups or release of unit cargo between modes of transportation or to alternate loading points due to changes in capabilities. However, no diversion is to be made without the concurrence of the shipper Service or agency affected.³
7. Cooperate with MTMTS in the performance by MTMTS of analytical studies of all overseas outbound passenger patterns within CONUS.
8. Advise MTMTS and the Military Service representatives of any problems encountered at aerial ports of embarkation which prevent passengers from boarding planes due to incomplete preparation for travel.
9. Maintain and operate a DoD airlift service system within limits approved by the Secretary of Defense to:
 - a. Maintain an adequate emergency readiness position.
 - b. Carry out realistic training programs.
 - c. Control, operate and administer government-owned aircraft assigned, and control and administer all other aircraft required for the purpose of providing air transportation service for the movement of personnel, cargo and mail.
 - d. Provide attached airlift service as required to DoD components.
 - e. Provide channel traffic and special assignment airlift service as required by DoD user components and, as authorized, for other agencies of the United States Government:
 - (1) Between points in CONUS and overseas areas,
 - (2) Between and within overseas areas, and
 - (3) Within CONUS when necessary for reasons of national security or to supplement commercial air carrier service based on determinations of MTMTS.
 - f. Provide aeromedical evacuation service within CONUS, between CONUS and oversea areas, and between and within oversea areas, consistent with assigned resources.

³Effective 31 July 1974, Military Traffic Management and Terminal Service (MTMTS) was redesignated the Military Traffic Management Command (11:59).

10. Augment the airlift capacity of the Agency, as required to meet requirements, by the use of commercial airlift service in peacetime on a basis which will contribute to the sound economic development of an increased modern civil airlift capacity and enhance the ability of civil carriers to operate with maximum effectiveness in support of the military forces in the time of war.
11. Procure all long-term (in excess of 90 days) contract airlift service in CONUS, such as LOGAIR and QUICKTRANS.
12. Procure by contract or otherwise all commercial contract airlift service between CONUS and overseas areas and within and between overseas areas, including both (a) charter service and (b) service on scheduled commercial flights where advance space blocking is necessary. Also, negotiate with scheduled air carriers, as appropriate, the terms and conditions and rates for service on scheduled commercial flights without space blocking; however, such space on specific flights shall be procured by the DoD user components, except as otherwise agreed between a component and the Agency. In coordination with MTMTS and the user components, expand arrangements for the use of scheduled overseas commercial service, minimizing the need for advance space blocking, to include all major points of origin and destination for DoD traffic.
13. Prepare recommendations for the design, specifications and equipment of transport aircraft. In collaboration with appropriate government agencies, make studies, analyses and recommendations for the improvement of air transportation systems.
14. Determine and advise MTMTS regarding the volume and rate of flow of cargo and passenger traffic that can be received into air terminals. (MTMTS will control the movement and release of unit cargo and passenger groups into these terminals in accordance with provisions of DoD Directive 4410.6, reference (g)). Loading plans and the loading and unloading of cargo and passengers (including patients) shall be the responsibility of MAC utilizing, as appropriate, the advice and participation of the DoD user components when required.
15. Operate a worldwide passenger reservation system for all international travel via MAC transport aircraft and commercial contract airlift. Develop procedures in coordination with DoD components for obtaining reservations for such travel.
16. Operate aerial ports/air terminals (including the processing of traffic) at Air Force installations

and operate or arrange for operation at civil airfields serving MAC channels flown by scheduled Agency airlift, except as specifically excluded by the Single Manager for Airlift Service or the Airlift Clearance Authority functions assigned to MTMTS by DoD Directive 5160.53, reference (e) regarding the movement of cargo. Operation of terminals at other installations shall be the responsibility of the host Department unless otherwise agreed between the Department and the Agency.

17. Select routes and negotiate rates for commercial overseas passenger service other than charter flights. MTMTS will participate with MAC in the selection of routes.
18. Provide MTMTS with necessary reports of tonnage on hand at aerial ports of embarkation in accordance with procedures established by MTMTS in coordination with MAC.
19. Provide MTMTS with concurrent copies of reservation confirmations for overseas air passengers.
20. Advise MTMTS with respect to traffic and documentation irregularities regarding CONUS outbound air cargo.
21. Advise MTMTS of receipt of retrograde air cargo.
22. Provide reoperating, repacking, marking, and similar services as required for cargo in transit.
23. Maintain on a current basis and provide to MTMTS a listing of supplemental carriers approved for contract (charter) domestic military passenger operations based on the results of capability and related surveys.
24. Act as a central clearance agency on all matters pertaining to the proposed establishment, amendment or interpretation of such rules and regulations as may be promulgated by air regulatory bodies relating to the movement of dangerous articles aboard MAC assigned aircraft, to include commercial airlift procurement as applicable [71:5-9].

To perform these functional responsibilities, MAC maintains a constant state of readiness for airlift capability, exercises its global airlift capability for movement of combat forces, and maintains equipment to perform aerial drops in combat areas. Furthermore, as a by-product of the constant training required for the global airlift

mission, MAC routinely supports the worldwide logistics needs of the Department of Defense. MAC participates annually in joint training exercises to both refine procedures and demonstrate airlift capability.

MAC's Current Airlift Assets

MAC had a total of 938 military aircraft as of 30 November 1981 (see Table 3-1). In addition to assigned aircraft, MAC is augmented by 28 C-7, 36 C-123 and 154 C-130 aircraft assigned to Air Force Reserve units (2:180). MAC airlift capability can be doubled through augmentation of civilian crews and equipment of the Civil Reserve Air Fleet (CRAF). A unique and significant part of the nation's mobility resources is provided by the CRAF program, started when the 1952 DoD plan for CRAF activation provided for payments to modify commercial aircraft for military use (11:41; 39:30). Under the program, selected civil aircraft from U.S. airlines are contractually committed to CRAF, which supports Department of Defense airlift requirements in emergencies when the airlift need exceeds the capability of military aircraft. The CRAF is composed of four segments: Long-Range International, Short-Range International, Domestic, and Alaskan. Aircraft are assigned to a segment depending on the nature of the requirement and the performance characteristics needed.

The aircraft in the Alaskan segment provide airlift within the Alaskan Air Command's area of responsibility. The Domestic segment is made up of short- and medium-range cargo aircraft. The majority of this fleet operates during peacetime in the Air Force's LOGAIR and the Navy's QUICKTRANS systems. The LOGAIR and QUICKTRANS operations provide logistic support to U.S. Air Force and Naval bases in the Continental United States.

The Short-Range International segment is composed of medium-range convertible cargo aircraft and is used to augment theater airlift forces. The Long-Range International segment is made up of long-range passenger and cargo aircraft capable of trans-ocean operations. The role of this fleet is to augment the Military Airlift Command's long-range intertheater C-141s and C-5s during periods of minor contingencies through full national emergencies. The civil aircraft in this reserve fleet are pledged contractually by the airlines to one or more of three stages of airlift emergencies. Activation requirements of these stages are:

1. Stage I may be activated by MAC's Commander in Chief. The civil aircraft committed to Stage I could be used to maintain military aerial port levels within acceptable limits freeing military aircraft to support any existing contingency.

2. Stage II may be activated by the Secretary of Defense to provide airlift capability for a major contingency requirement not warranting national mobilization.

3. Stage III can be activated by the Secretary of Defense only after a national emergency is declared by the President or the Congress.

The airlines commit their aircraft to the appropriate stages by annual contract with MAC. Each stage of the CRAF may be activated only to the extent necessary to provide the amount of civil augmentation airlift needed by DoD. The aircraft missions would be under the control of MAC. The procedures for incremental activation were established in 1963. Prior to that time (the CRAF program was formally established in 1952), the CRAF was not available to DoD until a national emergency or general war was declared.

To help develop the CRAF program and to assure the United States of adequate airlift reserves, MAC peacetime airlift contracts for International, Domestic and Alaskan requirements are awarded only to civilian airlines which offer aircraft to Stages I and II of the CRAF. As of 1 October 1981, the CRAF included twenty carriers, and as of December 1981, it had the assets shown in Table 3-2. However, these numbers are subject to change on a monthly basis (11:41-44; 77:77-91).

TABLE 3-2
CIVIL RESERVE AIR FLEET

Aircraft allocated as of December 1981 (408) (numbers change monthly)		
Domestic Segment (44)	Alaskan Segment (12)	
DC-9-30F 3	B737-200C 5	
L-100 Series 12	L-188C 2	
L-188C 29	L-100-30 5	
Short-range International Segment (28)		
B727C/QC		14
DC-8-50F		14
Long-range International Segment (324)		
Passenger (215); Cargo (109)		
B-707 0	9 =	9
DC-8 10	47 =	57
B747 114	36 =	150
DC-10 71	17 =	88
L-1011 20	0 =	20

(Source: Defense Transportation Journal, February 1982).

Organization

MAC is a major air command under the operational jurisdiction of the United States Air Force. MAC's resources are separated into three types of organizations--airlift, technical service, and special units (reference Chart 3-1). In order for MAC to accomplish the airlift portion of its mission, the command maintains a close working relationship with the Joint Chiefs of Staff, other DoD agencies, and the other two Transportation Operating Agencies (TOAs). The relationship between MAC, JCS and

MILITARY AIRLIFT COMMAND MAJOR UNITS AND AIRCRAFT

As of November 1981

1. Twenty-first Air Force (21 AF), McGuire AFB, New Jersey
 - 322 Airlift Division (ALD), Ramstein Air Base (AB), Germany
 - 435 Tactical Airlift Wing (TAW), Rhein-Main AB, Germany
 - C-9
 - C-130
 - 313 Tactical Airlift Group (TAG), Mildenhall AB, England
 - C-130 (ROTC)
 - 58 Military Airlift Squadron (MAS), Ramstein AB, Germany
 - C-135
 - C-140
 - CT-39
 - C-12
 - 436 Military Airlift Wing (MAW), Dover AFB, Delaware
 - C-5
 - 437 Military Airlift Wing (MAW), Charleston AFB, South Carolina
 - C-141
 - 438 Military Airlift Wing (MAW), McGuire AFB, New Jersey
 - 438 Military Airlift Group (MAG), McGuire AFB, New Jersey
 - C-141
 - 317 Tactical Airlift Group (TAG), Pope AFB, North Carolina
 - C-130
 - 76 Airlift Division (ALD), Andrews AFB, Maryland
 - 39 Military Airlift Wing (MAW), Andrews AFB, Maryland
 - 1 Military Airlift Squadron (MAS), Andrews AFB, Maryland
 - C-6
 - C-12
 - C-135
 - C-137
 - C-140
 - C-9
 - 1 Helicopter Squadron (HS), Andrews AFB, Maryland
 - UH-1
 - CH-3
2. Twenty-Second Air Force (22 AF), Travis AFB, California
 - 60 Military Airlift Wing (MAW), Travis AFB, California
 - C-141
 - C-5
 - 834 Airlift Division (ALD), Hickam AFB, Hawaii
 - 374 Tactical Airlift Wing (TAW), Clark AB, Philippines
 - C-9
 - C-130
 - 318 Tactical Airlift Group (TAG), Yokota AB, Japan
 - 345 Tactical Airlift Squadron (TAS), Yokota AB, Japan
 - C-130
 - 62 Military Airlift Wing (MAW), McChord AFB, Washington
 - C-141
 - C-130
 - 63 Military Airlift Wing (MAW), Norton AFB, California
 - 63 Military Airlift Group (MAG), Norton AFB, California
 - C-141
 - 443 Military Airlift Wing (Training), Altus AFB, Oklahoma (Aircraft Training)
 - C-5
 - C-141
 - 314 Tactical Airlift Wing (TAW), Little Rock AFB, Arkansas
 - 314 Tactical Airlift Group (TAG), Little Rock AFB, Arkansas
 - C-130
 - 34 Tactical Airlift Training Group (TATG), Little Rock AFB, Arkansas
 - C-130
 - 463 Tactical Airlift Wing (TAW), Dyess AFB, Texas
 - C-130
 - 616 Military Airlift Group (MAG), Elmendorf AFB, Alaska
 - C-130
3. 375 Aeromedical Airlift Wing (AAW), Scott AFB, Illinois (units at 15 bases for CT-39 aircraft)
 - C-9
 - CT-39
4. Air Weather Service (AWS), Scott AFB, Illinois
 - 1 Weather Wing (WW), Hickam AB, Hawaii
 - 2 WW, Kapaun Barracks, Germany
 - 3 WW, Offutt AFB, Nebraska
 - 5 WW, Langley AFB, Virginia
 - 7 WW, Scott AFB, Illinois
 - Air Force Global Weather Central (AFGWC), Offutt AFB, Nebraska
5. Aerospace Rescue and Recovery Service (ARRS), Scott AFB, Illinois
 - 39 Aerospace Rescue and Recovery Wing (ARRW), Eglin AFB, Florida (units at 28 bases)

UH-1/F	CH-3
HH-3	TH-1
HH-53	HH-1
HC-130	
 - 41 Rescue Weather Reconnaissance Wing (RWRW), McClellan AFB, California (Units at 8 bases)

HH-3	WC-130
HH-53	WC-135
HC-53	CH-3
 - 1550 Aircrew Training and Test Wing (ATTW), Kirtland AFB, New Mexico

UH-1	HC-130
HH-3	TH-1
HH-53	CH-3
6. Aerospace Audiovisual Service (AAVS), Norton AFB, California
 - 1361 Audiovisual Squadron (AVS), Arlington, Virginia
 - 1363 AVS, Hickam AFB, Hawaii
 - 1365 AVS, Lackland AFB, Texas
 - 1369 AVS, Vandenberg AFB, California

Chart 3-1. Military Airlift Command Major Units and Aircraft (Source: Defense Transportation Journal, February 1982)

the other transportation agencies is necessary to integrate the DoD transportation system.

Channel Traffic and Special Assignment Airlift Missions

MAC operates two types of airlift support:

(1) channel traffic, and (2) special assignment Airlift Missions (SAAMs). Channel traffic missions move normal aerial port traffic between designated points on a scheduled basis while SAAM missions are required by the DoD departments on a nonscheduled basis as needs arise (38:28). Chart 3-2 provides a summary of cargo and passenger movement within the MAC system from fiscal year 1970 through fiscal year 1981.

MAC relies upon organic, reserve, and augmented commercial aircraft to accomplish the channel traffic and SAAM mission requirements. Further, the command has developed a worldwide network of aerial ports to provide the passenger and cargo movement support.

Problem Areas

In a recent article appearing in the National Defense Journal, Paul Seidenman commented:

MAC's picture isn't good. Its principal airlifters which would move the people and fire power, first, are plagued with a scarcity of repair parts. Giant C-5's often sit on tarmacs for days because parts for just minor repairs aren't at hand. Second, military cargo, slated for airlift, is often delayed or sent via surface transport as aircraft priorities shift. To complicate matters further, MAC is operating

**SUMMARY OF TONNAGE MOVED BY
MILITARY AIRLIFT COMMAND 1970-1980**

	FY 70	FY 71	FY 72	FY 73	FY 74	FY 75	FY 76	FY 77	FY 78	FY 79	FY 80	
Channel Cargo	658643	520757	510998	451102	280907	273324	265250	59223	271350	280349	279167	287376
Special Assignment	57637	65815	101735	59505	64514	78107	57376	11437	66844	82609	76695	55757
Air/R Missions												
Total	715680	592570	610731	510607	355461	351431	322634	69660	338002	363158	355862	343133

NOTES: 1. Fiscal years FY 70-76 went from 1 Jul of the year previous to 30 Jun of the nominal year. In other words, FY 70 started 1 Jul 69 and ended 30 Jun 70.
 2. Fiscal year 77 went from 1 Jul 76 to 30 Sep 76.
 3. Subsequent fiscal years go from 1 Oct of the year previous to 30 Sep of the nominal year. In other words, FY 79 started 1 Oct and ended 30 Sep 79.
 4. "Channel" is normal aerial port traffic moved through scheduled missions.
 5. Special Assignment Air/R Missions are non-scheduled at the request of DOD departments.

**SUMMARY OF PASSENGERS MOVED BY
MILITARY AIRLIFT COMMAND 1970-1980**

	FY 70	FY 71	FY 72	FY 73	FY 74	FY 75	FY 76	FY 77	FY 78	FY 79	FY 80	
Channel Passengers	2890514	2546090	1906402	1411211	1137696	1091546	1048010	280330	1062593	991468	1045750	1038839
Special Assignment	308485	82512	107824	174073	110437	213064	141927	28843	186620	270078	237823	192581
Air/R Missions												
DOD Specie Available	372824	359977	336229	309832	282254	309140	249359	59952	248633	290609	343686	427740
Total	3567823	2988587	2350655	1895516	1530387	1613750	1439704	369125	1497866	1552155	1629265	1659120

Chart 3-2. Summary of Tonnage Moved by Military Airlift Command 1970-1980
 (Source: Defense Transportation Journal, February 1981)

with only half the airframes it would need if a worst case scenario developed right now. Finally, complication arises out of the heavy attrition among highly skilled personnel, often at the time when their years of expensive training are just beginning to pay off. The bottom line of MAC's difficulties is money and people, not management [57:38].

MAC is faced with other problems such as spiraling fuel prices (38:58), pilot retention, and inadequate material handling equipment.

Scarcity of Repair Parts

In an article in the National Defense, General Huyser, former Commander of MAC, said, "The parts business is something which has been neglected for years [57:40]." The parts shortage has been caused not only by inadequate funding, but defective planning based on lack of experience with the C-5 aircraft, which is too new to have established a track record. However, MAC can perform its peacetime mission well, but, if MAC is involved in a large contingency, that command does not have sufficient repair parts to realize the full potential of its airlift assets. The parts problem causes MAC to fail in sustaining the utilization rate. The effect of the parts shortage could result in the Military Airlift Command's ineffectiveness to meet its wartime requirements.

Shortage of Airlift

The shortage of airlift applies to MAC in an effort to meet its wartime requirements. The United

States relies heavily on the civil sector in time of war or national emergency. If the U.S. were involved in a NATO deployment scenario we would not be able to meet anticipated airlift requirements of the first thirty critical days. This shortage would also include the three stages of the CRAF program (11:40-44; 57:39). General Robert E. Huyser commented that MAC's current airlift force of C-5, C-141 and C-130 aircraft, while good, simply is too small and does not provide enough airlift to meet our nation's ever-increasing need for rapid mobility. We need to double our airlift capability if we are to counter potential threats to our national security as we can only fulfill 50 percent of the requirements called for by sound military strategy (28:7). The General also said that by 1986 each mechanized division is expected to increase in total weight by 20 percent with more than a 60 percent increase in "outsized" equipment (equipment that is too large for the C-141, C-130 and Civil Reserve Air Fleet aircraft) (28:7).

Airlift shortfall does exist, and the problem will be discussed in Chapter VI. In brief, the effects of this shortage of airlift would result in our inability to reinforce NATO. We just do not have sufficient airlift with everything operating properly, to meet our wartime needs.

Attrition of Skilled Personnel

The Air Force does not have a problem with recruiting qualified people. However, the long-term retention has been a problem with skilled personnel. The primary cause is considered the poor military pay picture compared to better-paying opportunities in the civilian job market for highly skilled personnel. MAC is losing career personnel (57:42). Career personnel are those who enlist for a third term. At that point in time an individual has peaked in job experience. Attrition of skilled personnel coupled with the shortage of repair parts effect the peacetime and wartime missions. People should be considered a number-one priority; wars are won by people and not machines (57:38-42,177).

Spiraling Fuel Prices

MAC, like the other two TOAs, is facing the same problem with rapidly rising costs, particularly fuel. These rising costs for MAC makes it difficult to accomplish its assigned mission. A large portion of the defense budget goes to the rising costs of fuel and operations and maintenance (O&M). Fuel is expected to rise 14 percent per year until the year 1990 (66). The effect of rising fuel costs is that MAC will find it difficult to meet the airlift demands of the DoD. It must be noted that the Military Airlift Command is striving to meet the

rising cost of fuel problem through a joint effort with the air industry. Chapter VI discusses some of these issues.

Pilot Retention

MAC has a problem retaining pilots after they have been trained. MAC has lost many of those who have served in the six to eleven year period. The effect of the problem is that with a shortage of pilots MAC will not be able to fully utilize its assets to accomplish its mission (57:177).

Inadequate Materiel Handling Equipment

With the advent of the C-5 aircraft, materiel handling equipment has been limited. The C-5 and the C-141s must be loaded as rapidly as possible, and the same is true for unloading these aircraft. The total effect of not having adequate ground materiel handling equipment is expanded lead time in aircraft handling (57:39).

Airlift Enhancement Programs

Efforts are being made to eliminate the problems controlled by MAC. Some of the specific airlift enhancement programs include:

1. Actions to increase the potential utilization rates of C-141 and C-5 aircraft by procurement of additional spares (11:45; 13).

2. Stretching the fuselage of the C-141 by 280 inches, increasing the pallet capacity from 10 to 13 pallet positions. Also, in-flight refueling will be added (11:45; 13).

3. Development and deployment of Advanced Cargo Tanker aircraft (11:45; 13).

4. Improved materiel handling equipment. Further discussion of these and other enhancement programs will be provided in Chapter VI.

Summary

Air transportation within the Department of Defense has come a long way since the Military Air Transport Service (MATPS) was organized in 1948. Airlift permits the United States to exert influence almost immediately at virtually any destination worldwide. The experience gained in the 50s and early 60s gave MAC the ability to carry out wartime deployment missions. However, the wartime mission is assured by continually exercising the total airlift system in peacetime. This does not only mean the crews--active, reserve, and civil--but

also the support, maintenance, and aerial port functions.

the problems MAC faces

. . . must be resolved to reserve the inherent advantages of each mode and to give the most effective and efficient overall transportation system for the Department of Defense [29:59].

CHAPTER IV

DOD TRANSPORTATION BY SEALIFT

Introduction

Without adequate and reliable sealift literally none of our military plans are executable. More than 90 percent of all wartime cargo will go by sea--mostly in merchant bottoms--regardless of where the conflict is.

—Admiral Thomas Hayward
Chief of Naval Operations
United States Navy, April 1980 (23)

"Every war in which the United States has been involved has required heavy reliance on the nation's merchant fleet [23]." As Admiral Hayward predicts, this reliance will continue in the future and presents a real challenge before the Department of Defense and specifically the Military Sealift Command (MSC). The purpose of this chapter is to describe the organization, purpose and challenges of the MSC.

Background of Military Sealift

Throughout World War II, there were four organizations which controlled cargo movement by sealift: the Army Transport Service, Naval Transportation Service, the War Shipping Administration and the Fleet Service Forces. Furthermore, the Army and Navy organizations independently

operated their shipping services (41:6). This continued until the National Security Act of 1947 gave the Secretary of Defense the authority to assign a single manager for all Department of Defense ocean transportation. Subsequently, on August 2, 1949, Secretary of Defense Louis Johnson issued a directive making the Secretary of the Navy the single manager for sealift and directing him to establish an operating agency within the Navy (40:24). On October 1, 1949, a sealift command officially began operating with Vice Admiral William M. Callaghan its first commander. The organization was known as the Military Sea Transportation Service (MSTS), the name it held until August 1970, when it was renamed the Military Sealift Command (41:6).

"Barely had MSC come into its own when hostilities erupted in Korea on June 5, 1950 [40:24]." MSC had received 92 ships from the Navy, but 115 Army ships were in the process of being transferred when the conflict began. By July 1, 1950, MSC had an additional six ships on charter from private companies and the Maritime Administration had been asked to remove 130 more vessels from mothballs and turn them over to commercial firms to operate under government contract to MSC. This process created a bridge of ships spanning the Pacific from the United States to Korea, to support United Nations troops deployed to Korea (41:8)..

During the Korean War, MSC delivered 87 percent of United Nations fighting forces and equipment to Korea by sea (40:24). "This figure represents 3.5 million passengers and 98.1 million measurement tons of cargo [41:8]." At the height of the Korean War, MSC had a fleet of 467 ships that operated around the world.

During the 1950s MSC continued routine sealift operations; however, in the 1960s MSC entered the space age even as wars and other national tragedies continued to occupy its ships around the world (40:24-25). The nose cone of the first missile fired into space was recovered in August 1960 by the USNS Haiti Victory, now the USNS Longview. Other space exploration support missions were accomplished by MSC in that time period including the monitoring of Astronaut Gordon Cooper's twenty-two-orbit space flight by the USNS Ranger Tracker's stellar inertial navigation system in July 1953 (41:14). The decade ended on a scientifically optimistic note when the MSC "Moonship Fleet," USNS Vanguard, Redstone, Mercury and Huntsville, supported the successful Apollo 11 flight to the moon (41:15; 40:25).

Meanwhile, MSC was involved in far-reaching, though routine operations between crises, but the big story was command support of the war in Vietnam. MSC ships first came on the scene in March 1965 when the USNS Mann transported an advance element of 2,000 Republic of

Korea soldiers from Korea to South Vietnam. In June, MSC chartered ships seafreighted U.S. Coast Guard Squadron One, composed of seventeen patrol craft, to the war zone, and in August, elements of the Army's 1st Cavalry Division sailed to Vietnam (41:17). One year later, in August 1966, MSC completed the longest troop lift in United States military history, carrying American soldiers 12,500 miles from Boston to Vietnam. In October 1966, two vessels, operated by U.S. Lines, were added to the MSC fleet in Southeast Asia. From 1960 until the Vietnam buildup in 1965-66, the MSC fleet averaged eighty-five ships (see Figure 4-1).

During the 1960s, the U.S. Merchant Marine underwent a technological change with the introduction of the containership. Container service helped reduce cargo pilferage, damage and cargo handling time. For example, one gang of longshoremen could load as much cargo in twelve hours on a containership as six to eight gangs formerly loaded on a breakbulk ship in a week (41:18). MSC, as well as the DoD customers, began to develop an appreciation for the new container service, and by 1969, 40 percent of the MSC-sponsored oceanborne cargo moved by containership under competitive procurement agreements (22:28). Another significant event during the decade included MSC's role as an industry partner in the continued development of vehicle roll-on, roll-off ships.

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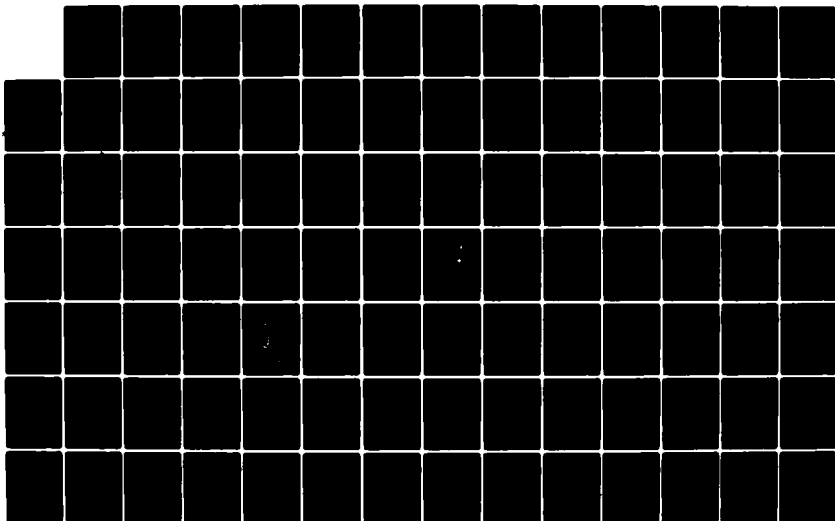
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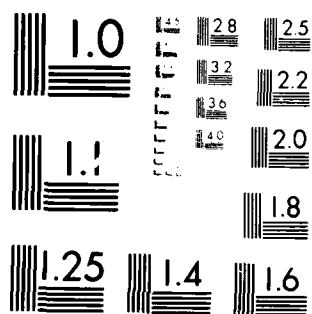
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MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS-1963-A

Four of these vessels are now in the nucleus fleet (see Chart 4-1) and are considered specialized cargo ships in the Fleet Support Naval Fleet Auxiliary (NFAF) (40:23). Finally, troop transports went out of service during the 1960s, although they were used right up to the end of the decade, shuttling U.N. troops in and out of South Vietnam. As a result of the troop ship phaseout, MSC merged its passenger and cargo divisions and troops began to move overseas predominantly by air. The MSC fleet remained relatively stable after the buildup in Vietnam and more than 400 ships were controlled by MSC during much of the latter half of the 1960s (see Figure 4-1).

During the war years, MSC delivered nearly 181 million measurement tons of dry cargo and almost 198 million long tons of petroleum products to military customers [41:19].

In one year, MSC delivered more than 32 million measurement tons of dry cargo; and in four fiscal years, 1965 through 1969, the dry cargo carried to Southeast Asia, or moved in-theater, totaled 53.7 million tons and petroleum products accounted for 7.6 million long tons (41:18). In total, MSC moved 96 percent of all military ocean cargo during that time period (40:25). The problem after the U.S. withdrawal from South Vietnam was how to reduce MSC assets to the needed level, and the reduction process took two years to complete.

During the decade of the 1970s MSC was given the responsibility of providing support to Navy ships at sea.

INVENTORY OF CONTROLLED SHIPS
AS OF 25 DEC 1981

NUCLEUS	69	70	71	72	73	74	75	76	77	78	79	80	81
CARGO	90	87	77	75	71	35	26	6	6	6	6	7	11
TRANSPORTS	11	3	2	2	-	-	-	-	-	-	-	-	-
TANKERS	27	26	25	20	17	21	21	21	21	21	21	23	23
PROJECT SCIENTIFIC SUPPORT	40	33	31	35	35	35	29	24	24	24	21	22	21
FLEET SUPPORT NAVAL FLEET													
AUXILIARY FORCE (NFAF)						5	10	16	17	18	23	27	30
TOTAL NUCLEUS	<u>168</u>	<u>149</u>	<u>135</u>	<u>132</u>	<u>123</u>	<u>96</u>	<u>86</u>	<u>67</u>	<u>68</u>	<u>69</u>	<u>71</u>	<u>79</u>	<u>85</u>

CHARTERED	157	131	84	96	49	41	29	28	28	30	28	29	34
CARGO	52	31	31	29	23	20	12	9	6	4	5	11	16
TANKERS	6	4	6	9	9	8	4	4	4	2	3	3	5
PROJECT-SCIENTIFIC SUPPORT													
NFAF												1	2
TOTAL CHARTERED	<u>215</u>	<u>166</u>	<u>121</u>	<u>134</u>	<u>81</u>	<u>69</u>	<u>45</u>	<u>41</u>	<u>30</u>	<u>36</u>	<u>36</u>	<u>44</u>	<u>57</u>
GENERAL AGENCY AGREEMENT	144	70											
TOTAL CONTROLLED	<u>527</u>	<u>385</u>	<u>256</u>	<u>266</u>	<u>204</u>	<u>165</u>	<u>131</u>	<u>108</u>	<u>106</u>	<u>105</u>	<u>107</u>	<u>123</u>	<u>142</u>

Chart 4-1. Inventory of Controlled Ships

However, emphasis turned to a new role: operation of the Naval Fleet Auxiliary Force (NFAF). MSC's expanding role in Navy fleet support began with a single step in the early 1970s when the command was assigned the USNS Taluga. It was manned by a 105-man civilian crew and a small detachment of Navy communications specialists to determine if Civil Service mariners could replenish fleet ships under way (41:21). The results justified expectations of the optimistic and overcame objections of the skeptics. Civilian manning of Navy auxiliaries frees highly trained military men for service on warships. Through the 70s, in emergencies and in meeting normal requirements for cargo delivery, MSC and the maritime industry have strengthened their working relationships. It was reported in a recent edition of Sealift that:

In 1978, MSC paid nearly \$700 million to private companies for services and supplies. Some \$107.4 million was paid to operators of chartered ships and tanker operators received another \$122 million. Another \$45 million was paid to industry in fiscal 1978 for movement of crude oil for the Department of Energy Strategic Petroleum Reserve Program and \$326 million went to private carriers to move military cargo on scheduled liners. Approximately \$98 million was expended for nucleus fleet ship repairs and other engineering services [41:23].

MSC continued to expand its intermodal service during the 1970s. Intermodal service now is provided from supplier to the military user, over land and sea.

Typical of intermodal services provided are MSC contracts with Alaska Hydro Train for tug and barge service, with Sea-Land Service for containerized

delivery of military cargo and with Tote for roll-on, roll-off ship services with all these systems providing for land and sea transportation in the most northern U.S. state [41:26].

In 1978, MSC established a new headquarters division for strategic mobility planning, with the remainder of the previous planning function incorporated in another division having primary responsibility for systems development. The 70s were a time for change; however, the 1980s will be a time for greater change.

Military Sealift Command

Mission and Responsibilities

The Military Sealift Command was established to provide ocean transportation for the Department of Defense. The mission of MSC is sixfold:

1. To eliminate duplication and overlapping of effort between and among military departments, Defense Agencies, and other components of DoD.
2. To improve the effectiveness and economy of ocean transportation service throughout the Department of Defense.
3. To ensure that approved emergency and wartime requirements of the Department of Defense are met.
4. To provide the level of DoD ocean transportation capability and the organization required for 3. above, having due regard for available commercial ocean transportation.
5. To develop and guide the peacetime employment of ocean transportation in a manner that will enhance the emergency and wartime ocean transportation capability, achieve greater flexibility and mobility of forces, and increase logistics effectiveness and economy.
6. To procure, control, operate, and administer services related to ocean transportation and, as assigned by the Secretary of Defense, provide services other than transportation [73:2].

DOD Directive 5160.10 outlines the functions of MSC as follows:

1. Within the mission of MSC, provide ocean transportation planning support to the Organization of the Joint Chiefs of Staff, the unified and specified commands, the Military Services and the Department of Defense agencies in support of the plans of the Joint Chiefs of Staff and other military operations as required.
2. Provide ocean transportation support to the DoD components as required.
3. Develop, establish, and operate an integrated transportation information data system to support the mission of the agency.
4. Develop plans to assure the efficient use and control of military-owned and commercial ocean transportation resources and capabilities made available to the DoD under mobilization or other emergency conditions.
5. Based on evaluated requirements submitted by the DoD components, prepare long and short range forecasts of sealift requirements and match them with sealift capabilities. In accordance with procedures established by the OJCS, submit requirements and capabilities to the OJCS together with recommendations as appropriate to assure a proper balance.
6. Provide necessary information required by MTMTS or other military commands or activities exercising traffic management functions for the diversion of passenger groups or release unit cargo between modes of transportation or to alternate loading points due to changes in capabilities. However, no diversion is to be made without the concurrence of the shipper service or agency affected.
7. Cooperate with MTMTS in the performance by MTMTS of analytical studies of all overseas outbound passenger travel patterns within CONUS.
8. Maintain and operate a DoD ocean transportation system within limits approved by the Secretary of Defense to:
 - a. Maintain an adequate emergency readiness position.
 - b. Carry out realistic training programs.
 - c. Control, operate and administer government-owned ships assigned, and all other ships acquired for the purpose of providing ocean transportation service for the movement of personnel, cargo, bulk petroleum, and mail.

- d. Provide ocean transportation service, except that performed by units of the fleet, to all components of the Department of Defense, and as authorized for other agencies of the United States Government on a basis consonant with national policy, the need for efficient and economical operations, and responsiveness to military requirements.
- 9. Procure ships outside the MSC fleet by bare boat, time, or voyage charter, or by allocation from other government agencies, and procure passenger (except individual travel which may be procured by the military departments) and cargo space in commercial ships to meet the requirements of the Department of Defense and such other agencies of the United States Government as authorized by the Secretary of Defense. The DoD agencies may be authorized by MSC to purchase passenger space on an individual transportation request basis. In the procurement of cargo space in commercial ships, contract provisions for or relating to the working of cargo, terminal facilities, or other responsibilities of the military departments or MTMTS will be coordinated with the military departments or MTMTS, as appropriate, prior to inclusion in MSC contracts.
- 10. In coordination with appropriate government agencies, prepare recommendations for the design, specifications and equipment of ocean-going ships except combatant types. In collaboration with appropriate government agencies, make studies, analyses and recommendations for the improvement of ocean transportation systems.
- 11. Keep MTMTS informed, to the extent mutually agreed necessary, as to the availability of opportune MSC ocean lift including coastwise and inter-coastal lift capacity.
- 12. Meet all requirements of the Department of Defense and other agencies as authorized for ships and craft for purposes other than transportation, such as research, survey, oceanographic, cable laying, repair facilities, and range instrumentation ships except those met by ships and craft organic to the Military Services and those required in the installation phase of a system by the systems contractor.
- 13. Provide or arrange for the maintenance, repair and alteration of all Government-owned ships assigned to MSC, plus the maintenance and repair of any ships acquired through bare boat charter to MSC.

14. Coordinate with MTMTS in the booking of outbound ocean cargo, passengers, and mail and with the Military Services or the theater commander as appropriate for retrograde, or intra- or inter-theater ocean cargo, passenger, and mail movements.
15. Approve stowage plans and their implementation to insure seaworthiness of the ship, safety of the cargo and efficient use of ship space. (The responsibility of MSC for cargo normally begins when finally stowed on board and accepted by the Commanding Officer of the ship and terminates when the cargo is accepted free on board at destination.)
16. Book, billet and exercise control of all passengers aboard MSC ships and book and billet passengers in commercial space procured by MSC. Administrative control may be exercised through commander of personnel assigned by the Military Services concerned. (The responsibility of MSC for passengers begins when the passenger embarks and terminates when the passenger debarks.)
17. Coordinate MSC operations with appropriate port authorities.
18. Manage, process, determine and settle claims by or against commercial carriers and/or the Government arising out of MSC contracts for ocean transportation of personnel, cargo, mail, and bulk petroleum.
19. Provide tankers to meet ocean transportation bulk POL requirements of the military departments.
20. Provide services which are related to the basic ocean transportation service when operationally required or directed by higher authority.
21. Book cargo, passengers, and mail in coordination with MTMTS and the DoD agencies, as appropriate, in accordance with reference (10).
22. Provide information to MTMTS on ship operating costs to enable that Agency to determine the advisability of working ships at overtime rates.
23. Provide ocean transportation rates when requested by the military departments and MTMTS in accordance with policies established by the Secretary of Defense.
24. Serve as single point of contact with ocean carriers in regard to the negotiation of ocean rates, terms, and conditions of ocean transportation and the procurement of ocean shipping capability or ocean transportation services [73:4-7].

Organization

MSC headquarters is located in Washington, D.C., and has four major subordinate area commands (see Figure 4-2). There are also two subarea commands: Military Sealift Command Mediterranean, Naples, Italy; and Military Sealift Command Southeast Asia, Subic Bay, Republic of the Philippines (40:21-22). MSC carries out its worldwide mission and responsibilities by operating under the Navy industrial fund. Unlike congressional appropriations, this is a revolving fund where the command bills the Services, to include the Navy, for service received. The billings cover all costs of service except military salaries. The objective of the industrial fund is to break even, although in recent years MSC has suffered from deficits (40:21). To support the operation of MSC, the command's controlled fleet consists of 142 ships (see Chart 4-1) (40:23).

MSC Controlled Assets

As of 25 December 1981, the controlled fleet is divided into the nucleus fleet of eighty-five ships, and the commercial chartered fleet of fifty-seven ships. Furthermore, Major Harrington (22:37) states,

. . . for peacetime, nonmobilization contingencies or for full mobilization, the MSC controlled fleet can be expanded through voyage or time charter of vessels from the U.S. privately owned merchant

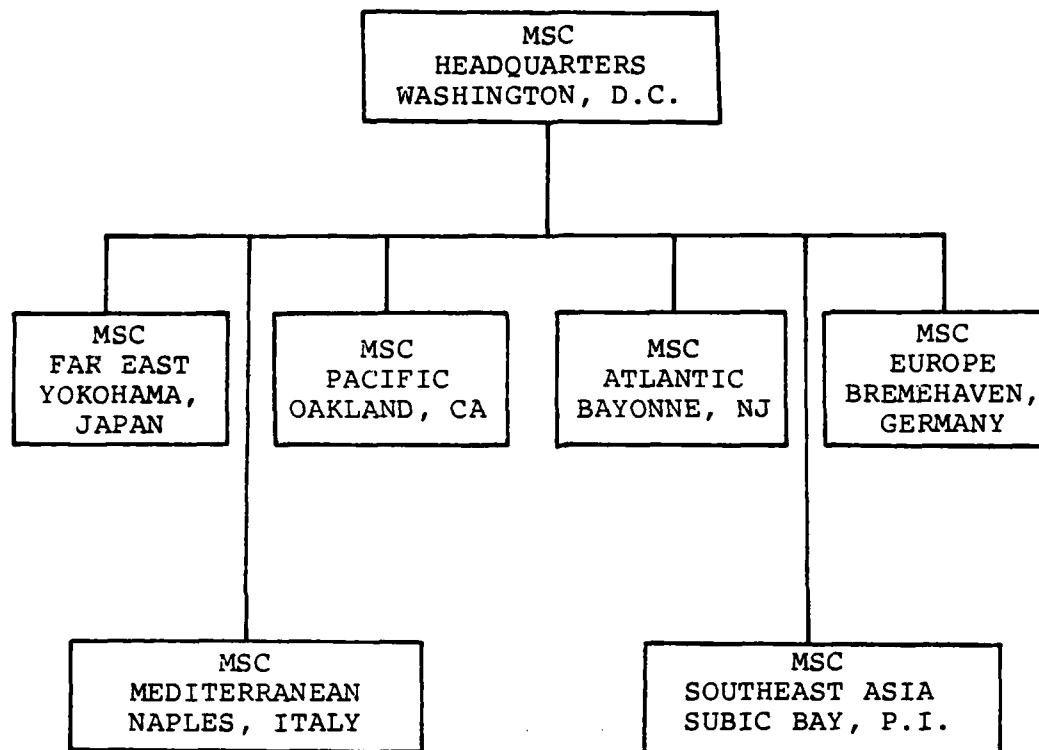


Fig. 4-2. Organization Structure--Military Sealift Command
(Source: Defense Transportation Journal, February 1982)

fleet. There are 284 dry cargo vessels considered suitable for carrying military equipment and supplies, as well as 268 tankers in this U.S. flag fleet [31:54].

The MSC controlled fleet can also be expanded during non-mobilization contingencies, as follows. First, ships from the National Defense Reserve Fleet (NDRF) shown in Tables 4-1 and 4-2, can be operated under General Agency Agreement by MSC (22:37). Second, privately owned ships from the Sealift Readiness Program (SRP) can be called up. The SRP is a Department of Defense program supported by the Maritime Administration, where U.S. privately owned shipping companies commit certain ships to meet DoD transportation requirements. According to Major Harrington (22:38), as of February 1979, there were 119 ships committed to the SRP. Finally, Major Harrington states, that in times of full mobilization, all of the above resources can be expanded to include:

1. American flag shipping not under the SRP.
2. NATO shipping (by agreement with the NATO Planning Board) for deployments in support of NATO.
3. U.S. owned foreign flag ships known as the Effective U.S. Control Fleet (EUSC) [22:38].

Figure 4-3 indicates the amount and breakdown of payments made to private industry in FY 1981. This amounted to \$1.253 billion for services, 73 percent of the total MSC expenditures (40:21).

TABLE 4-1
NATIONAL DEFENSE RESERVE FLEET--
SEPTEMBER 30, 1981

Fleets	Retention ¹	Scrap Candidates	Special Programs	Total ²
James River, Va.	107	19	41	167
Beaumont, Texas	46	1	5	52
Suisun Bay, Ca.	<u>82</u>	<u>5</u>	<u>11</u>	<u>98</u>
Totals	235	25	57	317

¹Vessel maintained for emergency activation under the first preservation program.

²Excludes one ship sold but not delivered, and the ATLANTIC BEAR moored alongside the James River Reserve Fleet.

(Source: Defense Transportation Journal, February 1982).

TABLE 4-2
NATIONAL DEFENSE RESERVE FLEET--
1945-1981

Fiscal Year	Ships	Fiscal Year	Ships
1945	5	1964	1739
1946	1421	1965	1594
1947	1204	1966	1327
1948	1675	1967	1152
1949	1934	1968	1062
1950	2277	1969	1017
1951	1767	1970	1027
1952	1853	1971	860
1953	1932	1972	673
1954	2067	1973	541
1955	2068	1974	487
1956	2061	1975	419
1957	1889	1976	348
1958	2074	1977	333
1959	2060	1978	306
1960	2000	1979	317
1961	1923	1980	320
1962	1862	1981	317
1963	1819		

(Source: Defense Transportation Journal, February 1982).

PAYMENTS . . . COMMERCIAL - FY 81 (OCT SEP)

	AMOUNT (\$000)	PERCENT OF TOTAL	
		MSC EXPENSES	COMM'L PAYMENTS
COMMERCIAL SHIPPING			
SHIPPING AGREEMENTS/CONTRACTS*	\$ 356,725	21	29
SHIPPING CONTRACTS**	3,171	—	—
BERTH TERMS	60,778	4	5
TIME & VOYAGE CHARTERS	480,837	28	38
OTHER****	4,339	—	—
TOTAL COMMERCIAL SHIPPING	\$ 905,850	53%	72%
NUCLEUS			
GOV'T OWNED CONTRACT OP	\$ 52,870	3	4
BAREBOAT CHARTERS-CONTRACT OPERATED	151,099	9	12
GOVERNMENT OPERATED	10,490	—	1
OTHER***	132,833	8	11
TOTAL COMMERCIAL PAYMENTS	1,253,142	73%	100%
TOTAL MSC EXPENSE	\$1,711,279	100%	

* REPRESENTS CARGO PAYMENTS
 ** REPRESENTS PETROLEUM PAYMENTS
 *** INCLUDES PAYMENT FOR MAINTENANCE & REPAIR ACCIDENT & DAMAGE CLAIMS
 EXTRAORDINARY REPAIRS ALTERATIONS ACTIVATION & INACTIVATION FOR MSC
 OPERATED NUCLEUS SHIPS
 **** REPRESENTS START OF COSTS FOR INDIAN OCEAN PREPOSITIONING SHIPS

Fig. 4-3. Payments--Commercial, FY81 (Source: Defense Transportation Journal, February 1982)

MSC Interface with the
Merchant Marine

Since the MSC relies heavily upon the U.S. Flag Fleet during both peace and wartime, it is important to understand the status of the merchant marine. The Merchant Marine Act of 1970 was the broadest and most far-reaching piece of maritime legislation enacted in more than thirty years and was signed into law on October 21, 1970. The intent of this Act is to transform the U.S. Merchant Marine into one of the most modern and highly efficient in the world. The Act extended construction and operating subsidies to bulk cargo carriers as well as to scheduled carriers. Moreover, the Act allowed shipbuilders and shipowners to qualify as applicants for subsidies; up to 45 percent of operating costs in 1971 and reduced to 35 percent by 1976. However, the revitalization of the merchant fleet and the upgrading of its competitive position has been slow and will be difficult in the years to follow (41:20-21; 76:25-26). The total inventory of merchant vessels, 1,000 tons and over, in the U.S. fleet decreased to 860 as of June 30, 1980. This inventory includes 569 privately owned vessels of 20.6 million tons, and 291 government owned vessels of 3.0 million tons. However, only 29 of the 291 government vessels were in operation in 1980, the remainder being laid up in mothballs in three National Defense Reserve Fleet sites: Suisun Bay,

California; Beaumont, Texas; and Lee Hall, Virginia (75:3). Table 4-3 reflects the four major vessel types in the inventory, and shows how each type has fluctuated over recent years.

TABLE 4-3
TOTAL INVENTORY OF MERCHANT VESSELS--
1,000 TONS AND OVER

Type	1980	1979	1978	1975	1970
Freighters	466	476	469	529	1,259
Tankers	308	306	287	279	301
Combo/Pass. and Cargo	65	73	62	64	177
Bulk Carriers	<u>21</u>	<u>22</u>	<u>22</u>	<u>19</u>	<u>43</u>
Total	860	877*	840*	891	1,780

*Includes three bulk and six tank integrated Tug/Barge Combination vessels.

(Source: Vessel Inventory Report, June 30, 1980, U.S. Department of Commerce Maritime Administration).

It is important to note that the U.S. privately owned or operated portion of the total inventory has decreased from 852 vessels in 1970 to 569 vessels in 1980, as shown in Table 4-4. The current state of the merchant marine impacts upon the MSC strategic mobility enhancement programs which will be discussed in a later chapter, and on the cost of procuring sealift transportation which will be discussed in the last section of this chapter.

TABLE 4-4

PRIVATELY OWNED FLEET FROM 1970-1980

Type	1980	1979	1978	1975	1970
Freighters	256	271	284	310	523
Tankers	285	282	273	247	268
Combo/Pass. and Cargo	7	6	6	7	20
Bulk Carriers	<u>21</u>	<u>22</u>	<u>22</u>	<u>19</u>	<u>41</u>
Total	569	581*	585*	583	852

*Includes three bulk and six tanker integrated Tug/Barge Combination vessels.

(Source: Vessel Inventory Report, June 30, 1980, U.S. Department of Commerce Maritime Administration).

When the total number of U.S. privately owned or operated vessels has declined, the deadweight tonnage has actually increased from 15.0 million tons in 1970, to 20.6 million tons as of June 1980 (12:3). This trend reflects the technological change to larger displacement vessels. In reflection of another technological change, the number of intermodal vessels, including container ships, barges and roll-on, roll-off ships has increased over the same time period. These shifts also impact upon the MSC enhancement programs to be discussed in Chapter VI.

Problem Areas

MSC is faced with important challenges, and while all are important, the most demanding is enhancing the ability to strategically deploy forces during mobilizations and contingencies. The strategic mobility lift capability and enhancement programs will be discussed in Chapter VI. Other major problems are listed below and will be discussed in this section.

1. DoD Directive 5160.10 states:

MSC was established to provide ocean transportation for the DoD, to eliminate duplication and overlapping of effort between and among military departments, Defense Agencies, and other components of DoD [73:2].

However, MSC and the Military Traffic Management Command have long-standing issues of duplication concerning cargo booking and contract administration.

2. Rising cost of procuring commercial sealift.

Duplication of Functions

When the three Transportation Operating Agencies--MAC, MSC and MTMC--were established within the respective service structures, the defense and national transportation systems were divided into air, land and sea segments. It was appropriate after the signing of the National Security Act of 1947, to put MAC in charge of airlift operations and give it a command relationship with the Air Force; to give MSC the responsibility for sealift as a Navy Command;

and to give MTMC the responsibility for land transportation and traffic management as an Army command.

However, with the advent of intermodalism in the 1960s, especially containerization, the defense and national transportation systems evolved from three into two segments: surface and air. This evolution caused the problem of duplication and overlap of functions between MSC and MTMC for cargo to be moved from inland CONUS installations to overseas destinations by surface modes of transportation. Figure 4-4, reprinted from Major Russell's article on "Force Deployment and Sustainment" which appeared in the December 1981 edition of the Defense Transportation Journal (53:18-23), contrasted the smooth flow of airlift cargo to the complicated management of surface movements. Major Russell described the surface movement process as follows:

The movement process is initiated by a shipment offer and routing request which are transmitted to the MTMC area command where routing and sea port of embarkation (SPOE) are recommended. The process is different for container and breakbulk movements (cargo that cannot be packed in containers, e.g., most wheeled or tracked vehicles). For container movements, MTMC provides the necessary information to MSC for booking with an ocean carrier. Once booked by MSC, that information is provided to MTMC. MTMC provides the shipper with the designated carrier and SPOE. The shipper then releases the material to the designated carrier. Containers move under the MSC container agreement via commercial ports and ships. The ship manifest is prepared by MTMC based on the shipper's documentation and forwarded to the commercial carrier and overseas consignee.

Breakbulk cargo is offered to and routed by MTMC to the military ocean terminals. MTMC either

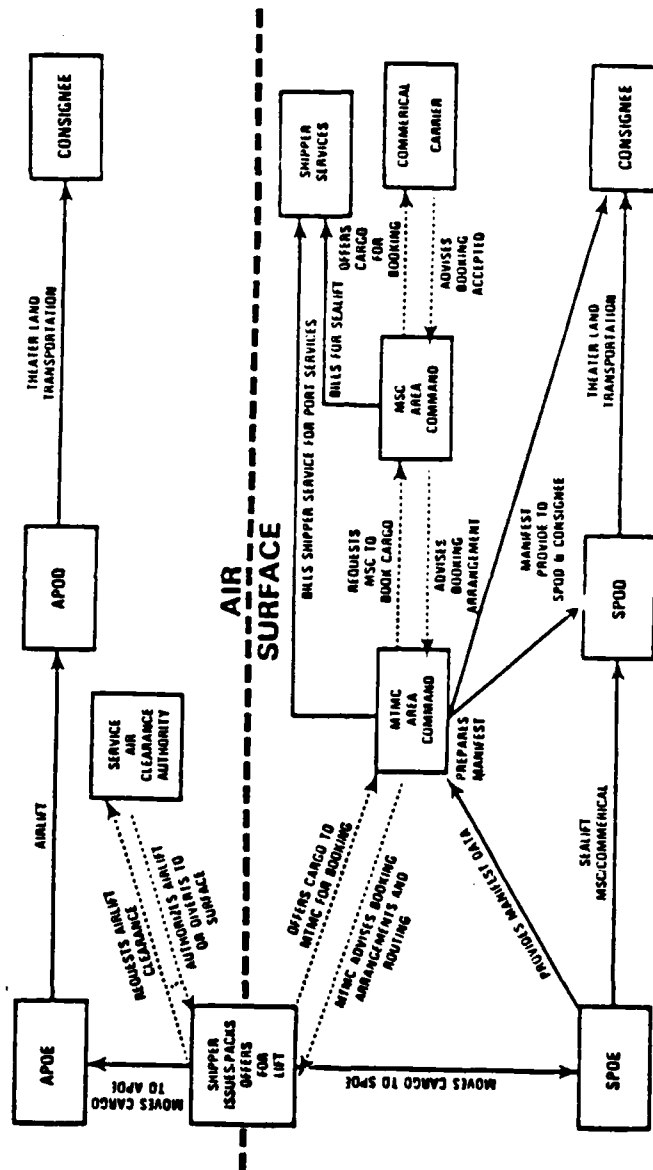


Fig. 4-4. Surface Movement Compared to Air Movement
(Source: Defense Transportation Journal,
December 1981)

consolidates shipments for container, in which case movement will be as previously described above, or offers it as breakbulk shipment to MSC for movement on a commercial or MSC-controlled vessel. MSC schedules a vessel, while MTMC provides terminal handling and prepares and forwards documentation.

The terminal operating function of MTMC and the sealift operation of MSC are industrially funded. Separate bills are prepared by each and forwarded to the shipper's military Service [53:18].

The effects of the problems of management fragmentation, duplication and overlap of function is increased pipeline time and inventories and delayed transition from peace to wartime operations. In an article from the Armed Forces Management Journal in March 1969, Major General John J. Lane, Commander of MTMC, was among the first to recognize the problem:

. . . the development of intermodal transportation concepts will highlight the need for consolidation of government transportation regulatory authority. . . . Control should be placed in the hands of one agency with authority to cut across functional transportation boundaries [14:50,53].

General Lane's view of the future defense transportation system was correct: surface transportation requirements should be handled by one agency if it would eliminate duplication and overlap of functions by another agency performing the same services. Part of the problem was solved as a result of the JCS study of TOA organizations and functions accomplished in 1981 and previously referenced in Chapter II. One of the JCS special task force study recommendations was to realign sealift cargo booking and contract administration. Secretary of Defense

Casper W. Weinberger summarized the recommendation in a statement before the U.S. House of Representatives Budget Committee, September 23, 1981:

On July 7, we announced a realignment of the Department's transportation and traffic management to include a plan to transfer the sealift cargo and passenger booking and contract administration from the Navy's MSC to the Army's MTMC. This action and approved consolidation of personal property shipping offices is expected to result in annual savings of \$2.6 million plus reductions in pipeline inventories. We have also recently approved a JCS concept for consolidation of MSC and MTMC. This should result in significant additional savings.

This realignment of cargo booking and contract administration functions was the first step. However, it is still necessary to fully integrate MSC and MTMC into one transportation command to cut across the old transportation boundaries with regard to routing, management information systems and operational responsibilities. The complete elimination of duplication and overlap of functions is necessary to decrease pipeline time and inventories, eliminate management fragmentation, and allow for effective transition from peace to wartime operations. The integration would, furthermore, align the defense transportation organization with the defense and national transportation systems it manages--systems that have evolved because of intermodal concepts.

Rising Costs of Procuring
Commercial Sealift

It was previously noted that the U.S. privately owned or operated merchant marine, which is relied upon by MSC in the conduct of its sealift transportation mission, has shown a significant decrease in recent years. What was once the envy of the world and first among maritime nations, the U.S. merchant marine now numbers eleventh in size (49:23). The decline has been attributed to bad management, restrictive regulations, slow introduction of new technology, operating costs two and one-half times those of trading partners and construction costs four times greater than Japan (49:23). Operating costs have been driven up by a number of management and labor factors, and also by rising fuel costs. For example, fuel costs amounted to approximately 40 percent of operating costs in 1974, compared to 15 percent in 1972 (77:72). More recently, ocean freight rates increased 14 percent in 1980 as a result of rising fuel costs (1981 future look long-range planning seminar, 20-24 April 1981, Homestead AFB, Florida). The effect of rising operating and fuel costs is that MSC finds it difficult to break even in recent years and the industrial fund has suffered deficits (77:72).

The Reagan Administration is now introducing proposals to allow U.S. flag ship companies more freedom to compete in world markets, specifically to "seek antitrust

immunity for shipping firms, allowing them to set prices, pool their cargos and share the profits as many foreign countries do [49:25]." The proposals are designed to reduce the cost of procuring U.S. flag vessels for transportation purposes. These actions, along with energy conservation measures, are necessary in order to reduce MSC's cost of operating nucleus fleet vessels and chartering U.S. flag ships.

Summary

MSC has played, and will continue to play, a major role in providing national security for the United States and our allies. However, MSC is facing some critical challenges, especially in the area of strategic mobility. These will be discussed in Chapter VI.

CHAPTER V

DOD LAND TRANSPORTATION AND TRAFFIC MANAGEMENT

Introduction

The "what," "where," and "when" of military movements lie outside the purview of the MTMC mission. These determinations remain with the shippers and their sponsoring commands. But the "how" of military transportation and the control necessary to insure the "when" are the central substance of the MTMC mission. This is the core of military traffic management.

—Paul H. Riley, "TOA Operations-Relationship to Total Force Concept," Report on Worldwide Logistics Conference, 22-24 April 1975 [11:61].

The Military Traffic Management Command (MTMC) is a jointly staffed, industrially funded major Army Command through which the Secretary of the Army carries out single manager responsibilities for the management of military traffic, land transportation, and common user ocean terminals in the Continental United States (CONUS) and selected overseas areas (22:33-34). This chapter presents an overview of the background, mission, organization, responsibilities and challenges facing the MTMC.

Background⁴

In the spring of 1944, the Woodrum Committee held hearings on the post-war organization of the military establishment. Despite strong support for some consolidation of the Services, there was a general feeling that no radical changes should be made at that critical juncture of the war. After reconsideration of the question when the war was over, Congress passed the National Security Act of 1947 on 27 July 1947.

In the "Unification Act," Congress stated that it was not its intent to merge the military departments into a single organization or to make radical changes in missions. It did contemplate, however, that the new Secretary of Defense would take appropriate steps to eliminate unnecessary duplication or overlapping in the fields of procurement, supply, transportation, storage, health and research. The concept of integrating the military services, which had been advanced by some advocates, gave way to the principle of interdependence. The benefits of greater efficiency and economy were to be sought through common or cross-servicing arrangements. Steps leading to unification of land transportation and traffic management functions are reviewed in the following sections.

⁴Material concerning the Background section for MTMC was drawn from Historical Background, Military Traffic Management Command, A.E. Ostrom, Staff Historian, 20 September 1979, pp. 1-16.

Consolidation in World War II

As with other logistics elements, the experiences of World War II pointed to the need for organizing military transportation activities to provide greater efficiency and economy. Parallel transportation organizations for traffic management, port operations, sea and air transport services resulted in duplication of effort and questionable efficiency. However, competition for scarce facilities and overlapping of operations was reduced during the war through establishment of coordinating agencies or by cooperative efforts of the military services.

An example of the former was the Transportation Control Committee, comprised of representatives of the Army, Navy, War Shipping Administration (WSA), Office of Defense Transportation, and the British Ministry of War Transport. This committee provided centralized control over the release of freight moving to ports for the purpose of preventing port congestion. An example of successful joint operations was the Army-Navy Consolidation Car Service in which the less-than-carload freight of both services was pooled to form carload shipments for faster service, better shipment control and lower transportation costs. Because of a critical shortage of sea-going tugs, the Army, Navy and WSA cooperated to effect the most efficient utilization of towing equipment. Still another

example of cooperation arising through the urgency of war, was the development of uniform shipping documentation and a consolidation of Army and Navy information agencies for shipments from Pacific ports. Despite earnest efforts at coordination, the existence of these separate transportation organizations and systems resulted in extensive and costly duplications in virtually all transport activity.

Assignment of Transportation
by Activities

After the passage of the National Security Act in 1947, instead of consolidating transportation services, the elimination of duplication and overlap in military transportation was sought by assignment of the various types of transportation activities--air, sea and land--to the military departments best qualified to handle them. The general pattern of thinking was that air transport would go to the Air Force, sea transport to the Navy, and land transport to the Army. In implementation of this concept, the Air Force and Navy Military Air Transport Service (MATS) was established 1 June 1948, under Air Force direction. MATS was subsequently redesignated as the Military Airlift Command (MAC) on 1 January 1966). The Army and Navy ocean shipping missions were consolidated 2 August 1949 with the establishment of the Military Sea Transportation Service (MSTS), under Navy direction, as an ocean

carrier service for the three military departments. MSTC was redesignated as the Military Sealift Command on 1 August 1970. These actions did, in fact, provide for unified airlift and sealift services, and were significant milestones in eliminating overlap and duplication in military transportation activities.

Military Traffic Service and the
Joint Land Transportation Agency

The course of unification in land transportation, however, was slow compared to the air and sea transport areas. Proposals to establish a traffic management service under the Army encountered resistance from the other military departments. This resistance was predicated on the concept that traffic management was inseparable from the supply mission of the individual departments. As a compromise measure, the Military Traffic Service (MTS) was created in 1950 within the Office of the Secretary of Defense. The purpose of the MTS was to provide uniform policy guidance and standards of practice for the individual military services. However, it failed to meet the underlying problem: the continued operation of duplicate transportation services and traffic management operations. Continued consideration of the problem resulted in some recognition of the advisability of consolidating land transportation functions. As one result, oversea commanders were given authority to assign responsibility

for land transportation and related matters to one military service--the Army.

Furthermore, within the CONUS, the creation of the Joint Land Transportation Agency (JLTA) on 10 March 1952, which was a jointly staffed emergency planning activity under the Army, represented another step in this direction. The JLTA did a creditable job in publishing uniform policies and procedures for use by the military services and in effecting agreements with other government agencies and carrier organizations to insure the smooth accommodation of military requirements under emergency conditions. Nevertheless, the fact remained that the JLTA's usefulness in the then current scene was negligible. Opinion in the Army persisted that failure to assign the Army common servicing responsibilities in the field of land transportation, commensurate with the charters held by the Navy (MSTS) for ocean shipping and by the Air Force (MATS) for air transport, was a major deficiency requiring correction.

The Single Manager Approach

A number of surveys dating as far back as 1945, pointed to the need for centralized traffic management operations for the military services. However, as late as the close of the Korean War, the Department of Defense was far from having a unified traffic management service

comparable in mission, organization and operation to MATS and MSTs. In 1949, the first Hoover Commission recommended the establishment of an agency responsible for both Department of Defense and federal government traffic management. The commission conceived the responsibilities of a central traffic management office in the government to be nearly identical with that of an industrial traffic organization:

The situation is analogous to that of a commercial firm with multiple plant operations where the general traffic manager and his staff at headquarters control the company's traffic by performing traffic management functions and, at the same time, traffic men at the various plants perform the operational functions incidental to the day-to-day handling of traffic.

—U.S. Commission on Organization of the Executive Branch of the Government, Transportation: A Report to the Congress (Washington, D.C.: Government Printing Office, 1955).

Although a single agency responsible for Department of Defense as well as other federal government traffic management never materialized, progress was accelerated to establish a single manager for land transportation and traffic management in 1955. This progress followed from the development of a Single Manager Plan which was created as a practical approach to consolidate and integrate common military supply and service operations.

The Single Manager Plan, devised in 1955 by a working group from the Office of the Assistant Secretary of Defense (Supply and Logistics), was a concept whereby

the Secretary of one military department was designated by the Secretary of Defense as a Single Manager responsible for the performance of all management functions related to a specified common user item or service for all departments. The Single Manager, in turn, selected a military or civilian individual as Executive Director to manage the operating agency that performed the assigned functions. Initially applied to the commodity area in late 1955, the single manager concept was extended to the Secretary of the Army in 1956 for traffic management within the CONUS, under DoD Directive 5160.53, 1 May 1956.

The Military Traffic Management Agency

Following the designation of the Secretary of the Army as Single Manager for Traffic Management within the United States, the task of organizing the operating agency was assigned to the Army Chief of Transportation. Within two months, the Military Traffic Management Agency (MTMA) was established in Washington, D.C.; and subsequently, five regional offices were established at Oakland, California; Dallas, Texas; St. Louis, Missouri; Atlanta, Georgia; and Pittsburgh, Pennsylvania. The agency became fully operational on 1 July 1957. The creation of MTMA achieved the integration of all existing headquarter commands and field traffic management elements of the military departments. From its inception, MTMA was responsible for policy and

command matters to the Secretary of the Army through the Army Chief of Transportation, the Deputy Chief of Staff for Logistics, and the Assistant Secretary of the Army for Installations and Logistics. On technical matters pertaining to traffic management and related services, MTMA communicated directly with offices or representatives designated by the Departmental Secretaries and directly with military installations and activities in the field. During the five and one-half years of operation, MTMA achieved a commendable record of effectively supporting the military services and gained significant economies. It contributed greatly to overcoming the traditional resistance to the unification of military traffic management within the CONUS.

The Defense Traffic Management Service

In 1961, Secretary of Defense Robert S. McNamara initiated a comprehensive analysis of centralized management for the provision of common supplies and related services to the military departments. This analysis, known as Project 100, concluded that even greater economy and efficiency could be gained if all common supply management activities and related services were combined into a single agency. As a result, a new organization, the Defense Supply Agency (DSA), was established on 1 October 1961, directly under the Secretary of Defense, as outlined

in DoD Directive 5105.22, 6 November 1961. The establishment of DSA brought together all of the then existing and several projected commodity single manager operating agencies as well as various common services directly associated with supply management, including CONUS traffic management. MSTS and MAC (then MATS) were not made a part of DSA but remained with the Navy and the Air Force, respectively. MTMA was transferred to DSA on 1 January 1962, and was designated the Defense Traffic Management Service (DTMS). As a field activity of DSA, DTMS had essentially the same mission as MTMA; namely, the effective and economical procurement, use, and control of commercial transportation service required for the movement of cargo and passengers within the CONUS and for the worldwide movement of uncrated household goods for all of the military services. The Commander, DTMS (formerly the Executive Director, MTMA), reported directly to the Director, DSA. Although a part of the DSA organization, DTMS's mission went beyond DSA's supply management mission since it involved areas not in the supply management field. Three outstanding examples of this were passenger traffic management, household goods transportation, and transportation mobilization planning. DTMS, during its slightly more than three years of operation, made a substantial contribution toward improving the efficiency and economy of DoD transportation activities.

The Military Traffic
Management Command

In 1964, the Deputy Secretary of Defense directed that a detailed interservice study be made of the CONUS air and ocean terminal system. The object of the study, made under the direction of the Joint Chiefs of Staff, was to determine the most effective means for the organization, management, functioning and operation of the CONUS air and ocean terminal system to insure responsiveness to military needs with minimum expenditure of resources. Of the many possible combinations of management alternatives and command options, the Study Group concluded that any one of three proposed concepts (Alpha 1, Alpha 2 and Bravo) would meet desired objectives. Under Alpha 1 and Alpha 2, CONUS traffic management and input control of movement into air and ocean terminals would be combined with the management of common-user ocean terminals, and the combined missions would be assigned to the Secretary of the Army as single manager (Alpha 1), or to DSA (Alpha 2). Concept Bravo envisioned combining the management of CONUS common-user ocean terminals and ocean transport (surface movement only), and placement of the missions under the Secretary of the Navy as single manager for ultimate assignment to MSTs. Specifically, the first two concepts linked the ocean terminals to the land portion of movements,

while the third concept associated ocean terminals with the seaward portion of movements.

The Alpha 1 concept won the unanimous approval of the Joint Chiefs of Staff, the Departmental Secretaries, and the Director, DSA. Subsequently, on 19 November 1964, the Secretary of Defense announced the designation of the Secretary of the Army as the Single Manager for Military Traffic, Land Transportation and Common-User Ocean Terminals. This action consolidated management and operation of military traffic, land transportation, and common-user ocean terminals under the Secretary of the Army as single manager. The Military Traffic Management and Terminal Service (MTMTS) was designated by the Secretary of the Army to discharge his single manager responsibilities. Several months of inter-service planning laid a solid base for the transfer of a variety of resources and functions from DSA and the military departments to the new agency. MTMTS was activated 15 February 1965, at Washington, D.C. The principal findings of the CONUS air and ocean terminal system study had a strong influence on the organization and tasks of MTMTS. One finding was that excess general cargo ocean terminal capacity existed. Another finding was that the Army had dominant interest in common-user ocean terminals, while fleet support was a unique function applicable only to the Navy. The study foresaw trends in land, sea and air transportation which would affect

future ocean terminal systems to a greater degree than in previous years. Consequently, it stressed the need for a uniform system of determining terminal handling costs and for the establishment of an integrated common-user ocean terminal system.

During its organization phase, MTMTS realigned and streamlined its newly acquired field organizations to achieve greater efficiency and economy and to provide more responsive service. A significant management improvement was the merger of five former DTMS traffic regions, three former Army technical commands and the former Joint Army-Navy Ocean Terminal at Oakland, California, into three MTMTS area commands located at Oakland, California; St. Louis, Missouri; and Bayonne, New Jersey. Subsequently, the St. Louis command was discontinued and the St. Louis Field Office was established under the jurisdiction of the Commander, Eastern Area, MTMTS. This action further streamlined the MTMTS organization by reducing the number of major field commands from three to two, and established the MTMTS command structure along lines closely parallel to those of MAC and MSTIS. On 31 May 1971, the St. Louis Field Office was closed as part of a DoD economy move. Functions of the office were assumed primarily by Headquarters, Eastern Area.

MTMTS subsequently was redesignated as the Military Traffic Management Command on 31 July 1974. This

redesignation was made in response to the request from the Commander, MTMTS, to the Department of the Army, to have the title of the command readily identifiable with its mission, so it would be more meaningful to the individual Service member, the Military Services, and the commercial transportation world. This change also brought the command's title in line with the other transportation Single Manager Operating Agencies; MAC and MSC.

Military Traffic Management Command

Mission and Responsibilities

MTMC's central mission involves providing effective, responsive and economical support to the military departments, the Joint Chiefs of Staff, the unified and specified commands and other DoD agencies in the areas of military traffic management, land transportation, and common-user ocean terminals (46:10). The MTMC mission encompasses a wide variety of responsibilities. These range from military planning support within specified parameters, to providing transportation information data support; from freight and passenger traffic management within CONUS to worldwide traffic management for the movement and storage of personal property; from management of common-user ocean terminals with CONUS and Northern and Central Europe to providing ocean terminal service in certain other oversea areas; and from providing a focal

point for the Highways for National Defense Program to certain activities pertaining to transportability and traffic engineering. Individually, these functional areas are substantial components of defense logistics; collectively, the quality of their performance has a tremendous impact upon DoD readiness, efficiency and economy (46:10; 77:94).

In the performance of MTMC mission, DoD Directive 5160.53 directs MTMC to:

1. Eliminate duplication and overlapping of effort between and among Military Departments, Defense Agencies, and other components of DoD.
2. Improve the effectiveness and economy of these operations throughout the DoD.
3. Ensure that the approved emergency and wartime requirements of the DoD are met [72:2].

Organization

MTMC headquarters is located in Washington, D.C., and there are four subordinate commands: MTMC Eastern Area and MTMC Western Area located at Bayonne, New Jersey and Oakland, California, respectively (see Chart 5-1); MTMC Transportation Engineering Agency located at Newport News, Virginia; and the MTMC Transportation Terminal Group, Europe located at Rotterdam, The Netherlands (see Chart 5-2) (42:31-32; 11:60). The Eastern Area Command covers thirty-four eastern and midcontinental states. "Its responsibilities include Eastern and Gulf ports, Azores, Panama, and

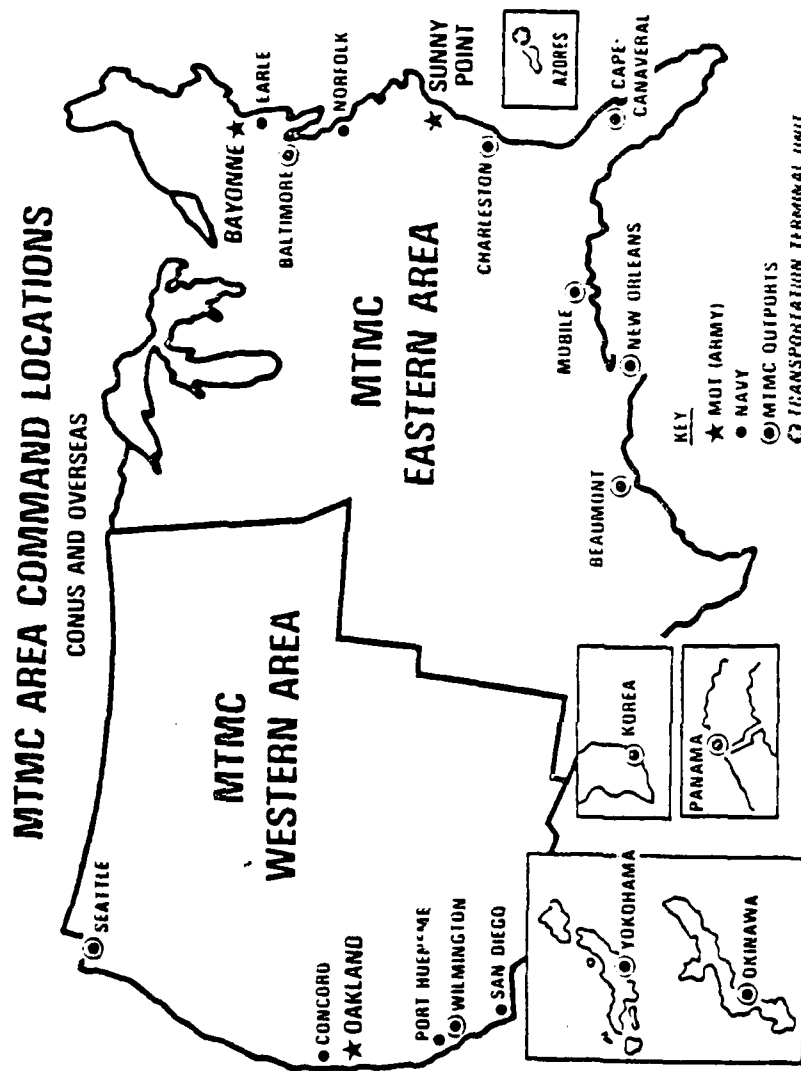


Chart 5-1. MTMC Area Command Locations (Source: Defense Transportation Journal, February 1982)

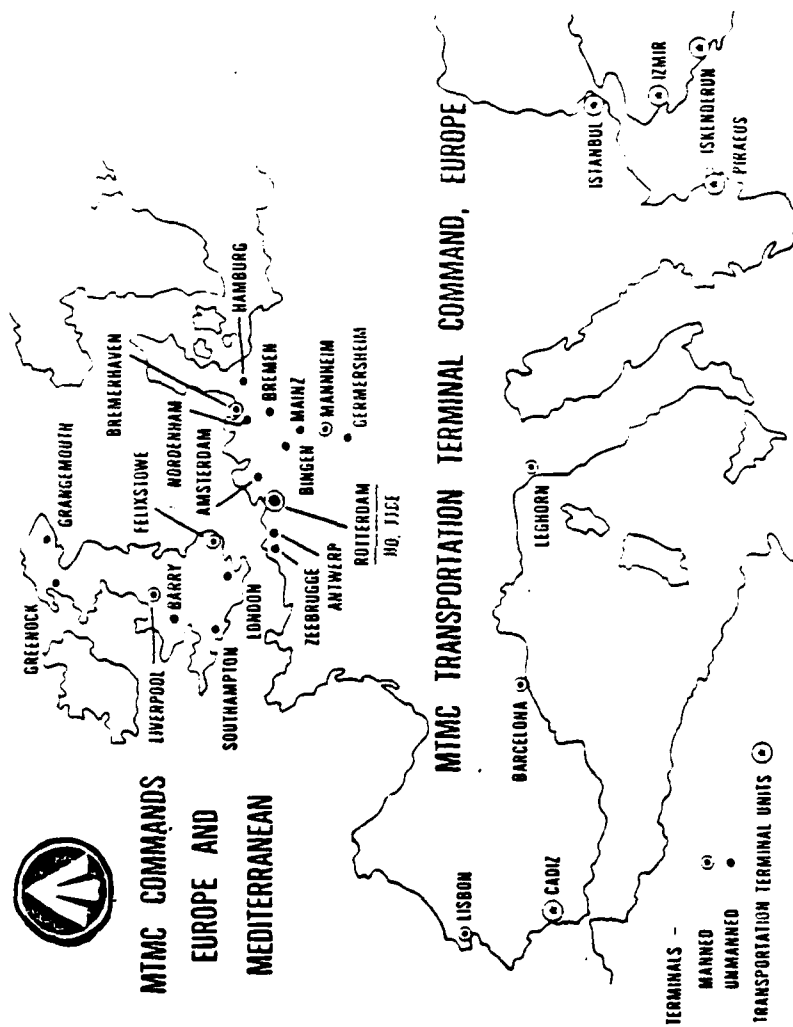


Chart 5-2. MTMC Transportation Terminal Command, Europe (Source: Defense Transportation Journal, February 1982)

management of the Defense Freight Railway Interchange Fleet [42:31-32]." The Western Area Command covers fourteen western states. Furthermore, its responsibilities include West Coast ports, Okinawa, Japan, Korea, and Alaska (42:32). Both Eastern and Western commands provide routing and movement release instructions for CONUS freight movements, operate military ocean terminals, and manage export cargo through commercial ports.

The Military Airlift Command and the Military Sealift Command are mode-oriented carrier operations. In contrast, MTMC is the interface between defense shippers and commercial as well as defense carriers. The core of the MTMC mission is often said to involve determining "how" military transportation traffic will move and what type of controls are required to ensure the shipper requirements have been met (11:61).

Traffic Operations

As a transportation operator, MTMC is engaged in a variety of operations. MTMC operates ocean terminals in CONUS and certain oversea areas and allocates and maintains the Defense Freight Railway Interchange Fleet (DFRIF) of some "1,740 tankcars, 87 boxcars, 908 flatcars, six cabooses, and five guard cars [22:34]." The DFRIF interchange fleet consists of railcars not normally available from the nation's railroads. These cars also include

tankcars to support DoD fuel supplies, special boxcars in support of the Navy's nuclear program and flatcars to support oversize and overweight equipment. Recently, MTMC made arrangements to procure heavy-duty 140-ton flatcars to support the movement of Army M-1 tanks. The Military Ocean Terminals at Oakland, California, and Bayonne, New Jersey, are general cargo terminals. However, MTMC contracts for additional services in commercial terminals in Atlantic, Gulf, and Pacific ports (42:32-33). MTMC activated a number of Military Export Cargo Offering and Booking Offices (MECOBOs) in October 1981 (see Chart 5-3). This action consolidated under MTMC, the single managership, of DoD intermodal containers and other dry cargo during both peace and wartime operations (42:32). Also, in October 1981, MTMC assumed responsibility for operation of common-user military water terminals, related cargo-handling activities and for water terminal clearance authority in Pusan, Korea.

As a transportation manager, MTMC manages CONUS freight and passenger traffic and Army passengers worldwide; manages the DoD Personal Property Movement and Storage Program; provides interface between military shippers, the civilian transportation industry, and the Military Airlift and Sealift Commands; and administers the DoD worldwide Cargo Loss and Damage Reporting and Analysis System (CLDRAS) (42:32). As a transportation manager

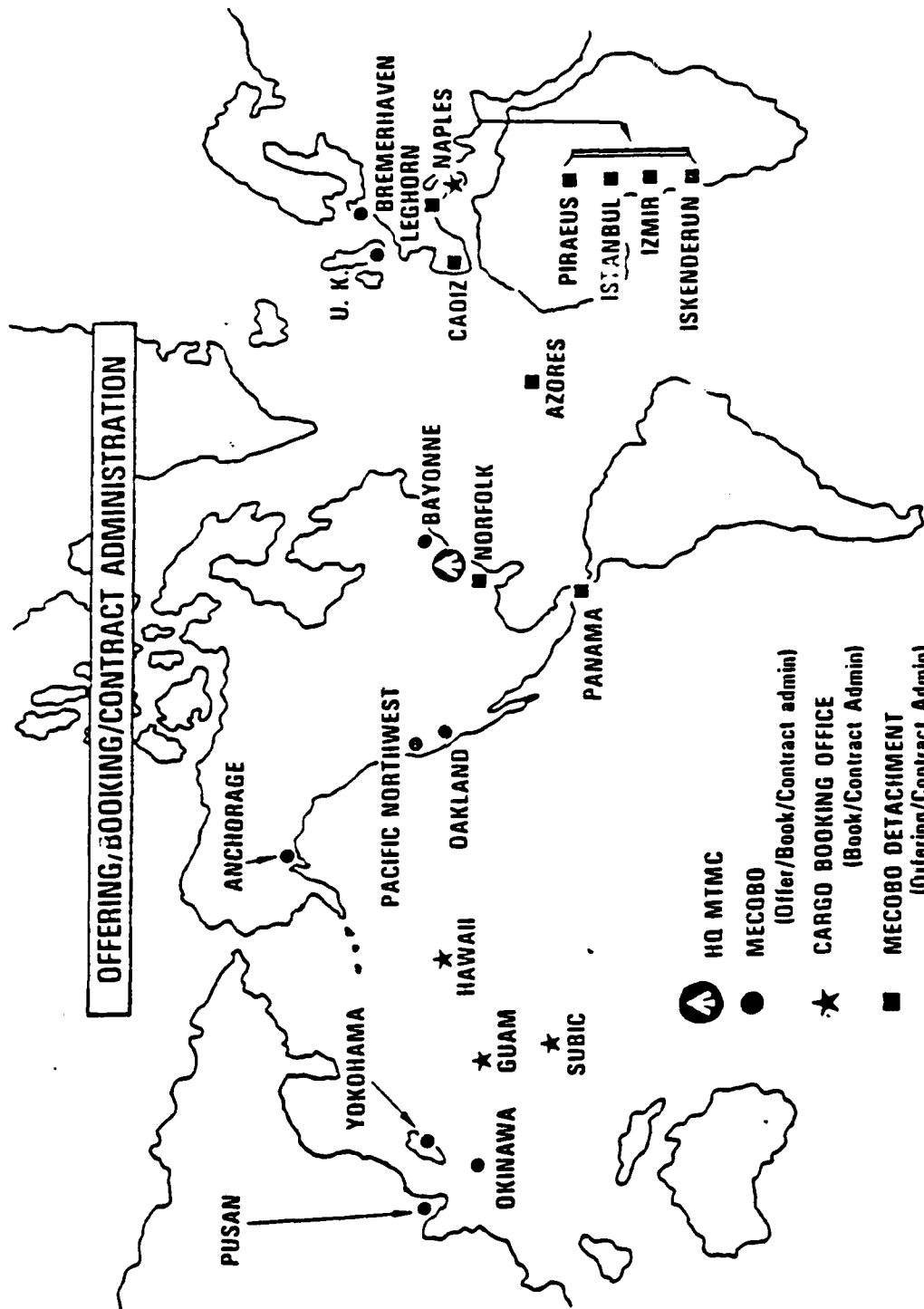


Chart 5-3. Offering/Booking/Contract Administration (Source: Military Traffic Management Command, A. E. Ostrom, 1982)

MTMC recorded the following impact on the private sector in fiscal year 1981:

Passengers Moved	5.6 Million
Freight Routed	16.6 Million Measurement tons
Cargo Transshipped through MTMC Ocean Terminals	11.3 Million Measurement tons
Movement and Storage of Personal Property	\$1.9 Billion (42:31)

MTMC is also assigned the mission of administering the DoD Highways for National Defense Program, and works with the Federal Highway Administration under the Department of Transportation (DOT). Through this program, MTMC ensures that defense needs are integrated into the highway programs of the nation, its territories and possessions. Moreover, this program includes managing those public highway systems considered strategically important to defense, and managing the Defense Access Road Program (DARP) (42:33). Still another parallel program is MTMC's Railroads for National Defense (RND) program. This program assures that the defense needs are considered in plans, standards, programs and regulations related to the railroad industry. A major accomplishment of the RND was the designation of strategic rail corridors throughout the United States. Under the RND program, MTMC evaluates the impact of proposed mergers and abandonments on defense

transportation requirements planned for movement over the strategic network (42:33). MTMC is also involved in another more recent program--Pipelines for National Defense. This program is jointly administered by the Defense Fuel Supply Center and MTMC to ensure uninterrupted and economical delivery of fuel to military installations (42:34). Finally, MTMC serves an important role as a transportation advisor. Specifically, the command evaluates defense transportation activities and recommends system improvements to the Office of the Secretary of Defense.

Strategic Mobility Planning

MTMC, acting in its advisory capacity, provides transportation planning support to the Joint Chiefs of Staff, the Joint Deployment Agency, unified and specified commands, the Military Services and DoD agencies. The command routinely reviews contingency, mobilization and exercise plans for transportation feasibility and accuracy. The reviews are accomplished to ensure that sufficient commercial transportation assets are available when needed to move units, people and resupply items in support of U.S. forces during peace or wartime.

The Contingency Response (CORE) Program can best illustrate MTMC's strategic mobility planning responsibilities. CORE is a federal government program where key representatives from DoD and officials from various

federal agencies and the commercial transportation industry are tied together as a team to effect deployment and mobilization (see Chart 5-4). MTMC designed CORE to provide, through quick reaction procedures, DoD priority for commercial truck and rail transportation service prior to a declaration of national emergency (47). The program is patterned after the Military Airlift Command's Civil Reserve Air Fleet (CRAF) and Military Sealift Command's Sealift Readiness Program (SRP). The CORE program is implemented in three phases:

Phase 1. MTMC evaluates information available. The CORE Team is notified and given "heads up" alert.

Phase 2. (1) MTMC briefs CORE Team; (2) Transportation requirements are defined; (3) CORE Team members notify associations and carriers to plan geographical positioning of lift assets; (4) Potential shortfalls are identified; (5) Voluntary resolution of shortfalls is undertaken.

Phase 3. If shortfalls cannot be resolved, the Commander, MTMC, as a last resort, notifies Department of Transportation (DOT) and requests priority for DoD traffic. Upon receipt of notification, DOT authorizes the Interstate Commerce Commission (ICC) to arrange priority transportation service for the DoD in all surface modes (46; 42:35).

Members of the CORE Team

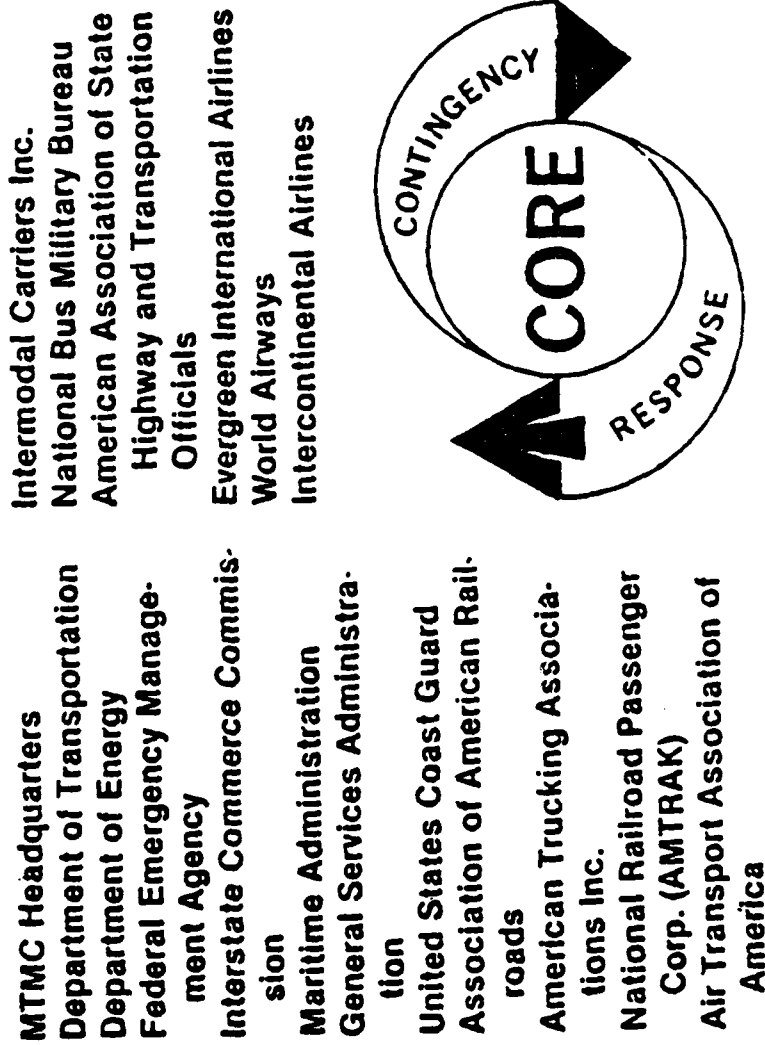


Chart 5-4. Members of the CORE Team (Source: Defense Transportation Journal, February 1982)

In 1980, MTMC conducted the first command post exercise, COREX-80, under the CORE Program. Selected members of the commercial transportation industry and federal agencies participated in the exercise which validated the CORE concept. In 1981, MTMC tested CORE (COREX-81) procedures in a more realistic setting by involving five major U.S. installations and two major depots. During the exercise, CORE improved its procedures to obtain priority service for passenger movements by all modes, including air, and to expedite route clearance for priority movement of heavy equipment moved over highways (see Figure 5-1). MTMC also developed the "Battlebook" concept for the transition from peacetime operation to a wartime or deployment posture. This concept specifies the who, what, where, when, and how the deployment and mobilization mission must be accomplished at commercial ports (46; 42:35-36).

Problem Areas

MTMC is faced with some important challenges in the future. The following challenges and problems will be discussed in this section:

1. Elimination of duplication and overlap of functions between MTMC and MSC.
2. Rising costs of commercial transportation service.

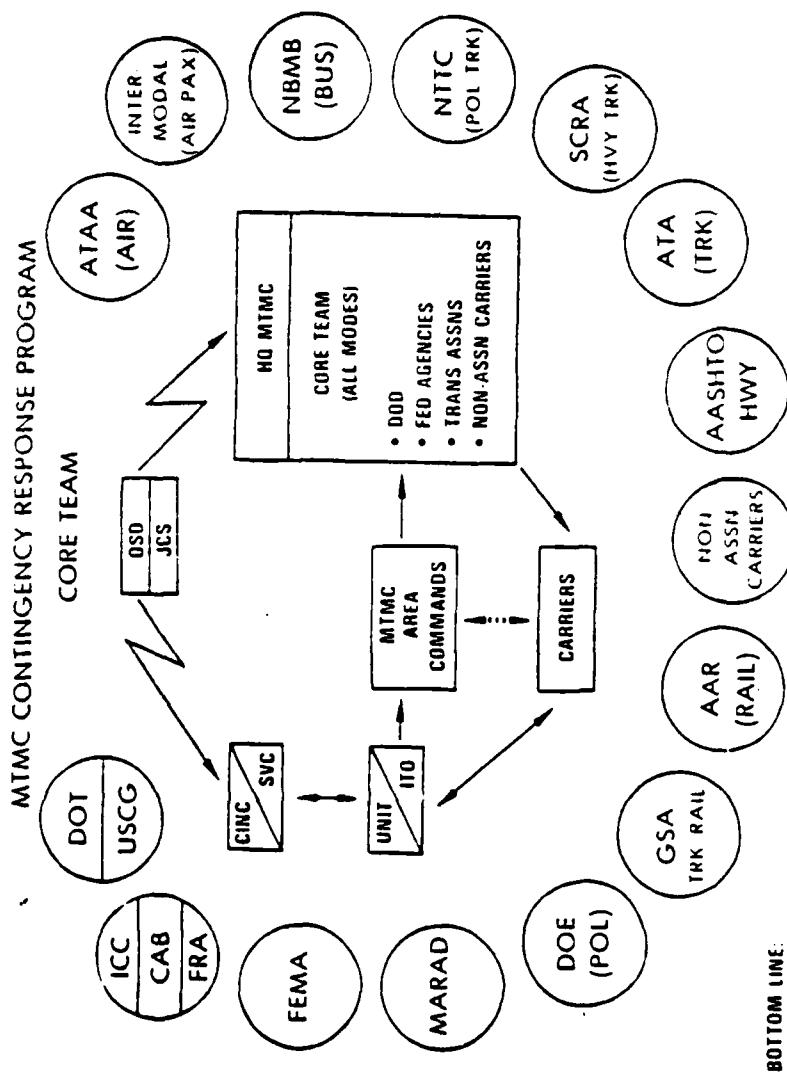


Fig. 5-1. MTMC Contingency Response Program (Source: Defense Transportation Journal, February 1982)

3. Communication between the military and the transportation industry.

Duplication of Functions

DoD Directives 5160.53 for MTMC and 5160.10 for MSC states that both MTMC and MSC are to eliminate duplication and overlap of functions between and among military departments, defense agencies, and other components of DoD. The Secretary of Defense placed the Army and Navy as Single Managers in charge of MTMC and MSC agencies, respectively, after the signing of the National Security Act of 1947. Consequently, the Army was given responsibility for land transportation and traffic management and the Navy was given responsibility for sealift transportation. Intermodalism became the way for future transportation in the 1960s, bringing with it a new way of thinking about defense and national transportation systems. Intermodals, especially affected the DoD because of containerization, and impacted on the functions of the three TOAs; specifically, the functions of MTMC and MSC. Prior to containerization, MTMC and MSC's failure to integrate functions and eliminate duplication was noted, but went without any corrective action. In March 1969, Major General John L. Lane, Commander of the Military Traffic Management and Terminal Service, believed that "in a transportation system, total control should be vested at

one point, rather than splintered, if maximum effectiveness is to be achieved [14:50]." After the advent of containerization, land and sea transportation service became consolidated into a surface transportation system, as discussed in Chapter IV. It therefore became imperative that MTMC and MSC integrate functions concerning movements that span land and sea systems.

The effects of the problem of fragmented management in surface transportation and traffic management is time lag between shippers and customers and delayed transition from peace to wartime operations. Deputy Secretary of Defense Frank C. Carlucci's Memorandum for Secretaries of the Military Departments, Chairman of the Joint Chiefs of Staff, and the Assistant Secretary of Defense Manpower, Reserve Affairs and Logistics (MRA&L), number 48467, dated June 30, 1981, gave direction for Realignment of Transportation and Traffic Management Functions between MTMC and MSC. The Memorandum stated that by October 1, 1981, the sealift cargo and passenger booking and contract administration function would be consolidated under MTMC. That command, as single manager, would have operational management, in peace and war, of defense intermodal containers and other dry cargo moving in partial or full shipments (14).

Deputy Secretary of Defense Memorandum 54054, September 16, 1981, confirmed the implementation plan for

the consolidation by October 1, 1981. This action was a giant step in the right direction. However, it is still necessary to fully integrate MTMC and MSC into one transportation command to eliminate duplication and overlap of functions, and to improve effectiveness and economy of operations throughout the DoD (59). Lieutenant General Joseph M. Heiser, Jr., former Commanding General, 1st Logistic Command, Vietnam, summarized the problem:

. . . localized, decentralized traffic management which resulted in waste of transport resources, ineffective use of transport capabilities, and lack of overall knowledge of countrywide transport capabilities [25:159-161].

Rising Costs of Procuring Commercial Transportation

MTMC, MSC and MAC are facing the same problem with rapidly rising costs, particularly for fuel. These rising costs make it difficult for the three TOAs to procure needed transportation service. Between fiscal 1964 and fiscal 1981, total defense spending more than tripled, from \$49.5 billion in 1964 to an estimated \$158.7 billion in 1981 (48:60). A vast majority of the defense budget has gone to the rising costs of fuel and operations and maintenance (O&M), as O&M expenditures amounted to about 30 percent of the defense budget. This author believes that the effect of rising costs is that MTMC will find it very difficult to meet the transportation of the movement demands within the DoD. It should be noted that MTMC is

striving to meet the rising cost problem through management initiatives. MTMC produced cost avoidances in excess of \$114 million during FY 1981 in the areas of freight traffic, passenger traffic, personal property and transportation engineering (12:3-4).

Communication Between the Military and the Transportation Industry

The Motor Carrier Act of 1980 (MCA1980), brought with it many changes that effect military requirements for transportation. MCA1980 resulted in the increase in competition among the carriers because the act eased the existing entry restriction regulations. This made more motor assets available to the Department of Defense. At the same time, however, the DoD's ability to rapidly marshall these new assets to a specified location is decreased because many of the new carriers are not affiliated with organized trucking associations (74:33). As was previously explained, the Department of Defense gains knowledge of carrier equipment inventories and communicates transportation requirements to the carriers through the organized trucking associations belonging to MTMC's Contingency Response Program (CORE) team.

Summary

MTMC has made significant changes in the past thirty years and will continue to provide high quality

transportation service to its customers during peace, emergencies or wartime, especially with the recent integration of some surface intermodal transportation management functions. However, by not becoming the complete single manager for surface transportation and traffic management, this author believes that duplication and overlapping of functions between MTMC and MSC will continue to result in a workable but more costly and less effective transportation system. If MTMC and MSC would fully integrate into a single command, the DoD customers would receive more effective and lower cost transportation and traffic management services. Further, MTMC and MSC, as a single surface and traffic management command, would be more closely aligned with the intermodal surface transportation system of the nation. However, Lieutenant Colonel Daniel commented in his Monograph, "Defense Transportation of Organization: Strategic Mobility in Changing Times," May 1979,

. . . for more than 30 years, repeated studies, commissions, boards, committees, and ad hoc groups have recommended increased integration and centralization of the traffic management function in the Department of Defense, only to meet with constant and predictable resistance from within the very department that the integration is designed to improve [11:89].

Deputy Secretary of Defense Carlucci saw the need for and made some changes with his Memorandum for Secretaries of the Military Departments, and Chairman, Joint Chiefs of Staff, by consolidation of sealift cargo and passenger booking and contract administration functions

from the Military Sealift Command to the Military Traffic Management Command, October 1, 1981. Certainly, MTMC and MSC were not fully integrated by these changes, but the changes constitute a step in the right direction.

CHAPTER VI

DOD STRATEGIC MOBILITY

Introduction

We are in a period of instability and turmoil throughout the world. The threat is greater than ever before, and friendly Allies are even more vulnerable. The burden to protect freedom is on the United States, because this country is capable of projecting military forces where needed. What we need to do is increase our ability to more rapidly deploy and effectively sustain such a force in times of crisis.

—General David G. Jones, USAF
Chairman of the Joint Chiefs
of Staff. National Strategic
Mobility Conference. August
1980, Defense Transportation
Journal, p. 14.

General Jones' comment is the subject of high concern from the executive branch to the Department of Defense levels. Major Thomas C. Harrington noted that, "The United States protects vital interests throughout the world with its instruments of national power, including our armed forces [22:52]." Since the maintenance of sufficient armed forces in dispersed foreign locations is far too costly, the concept of strategic mobility has been developed. Strategic Mobility is defined as "the capability to deploy and sustain military forces worldwide in support of national strategy [10:662]." Thus, strategic mobility is crucial for the continuous protection of national

interests throughout the free world. The purpose of this chapter is to discuss and analyze the current Department of Defense (DoD) strategic mobility capabilities.

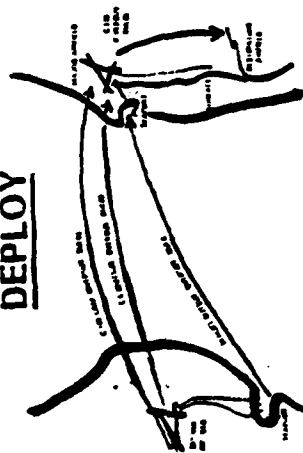
Background

The three Transportation Operating Agencies (TOAs) provide the necessary means of deploying, employing and sustaining our armed forces overseas (see Chart 6-1). Our fighting forces must first get to the objective area in a timely manner, and a great amount of emphasis has been placed on strategic deployments. However, employment is also crucial as is resupply since combat capability could be depleted if we cannot deploy or sustain the forces.

Over the past ten years, there have been 150 mobility assessments (13). Chart 6-2 shows seventeen major efforts performed in the last seven years by a variety of agencies including the Air Force, Army, JCS, Office of the Assistant Secretary of Defense (OASD), the Congressional Budget Office (CBO), and several civilian contractors (13). It appears that whatever scenario or assumptions were used, the conclusion was the same: a significant shortfall in strategic mobility deployment and resupply capability exists.

According to Lieutenant General DeHaven, Director of Logistics, Office of the Joint Chiefs of Staff, most of these study efforts addressed the mobility problem in a

SUSTAIN



COMBAT



TAC-AIR

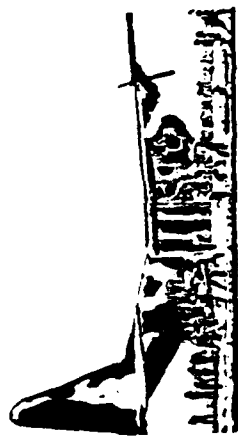
ATTACK HELICOPTERS



FIGHTING VEHICLES



CARRIER PERSONNEL



COMBAT SUPPORT



HELICOPTERS (UH1)



HELICOPTERS (OBS)



RECOVERY VEHICLES



CARRIER CP:



BRIDGE



**COMBAT SERVICE
SUPPORT**



TRANSPORTATION



MAINTENANCE



HOSPITALS



SUPPLIES



RATIONS



AMMO

AMMO

PM

Chart 6-1. Mobility Mission (Source: Lt Gen Dellaven, Director of Logistics (J4), 5 May 1982)

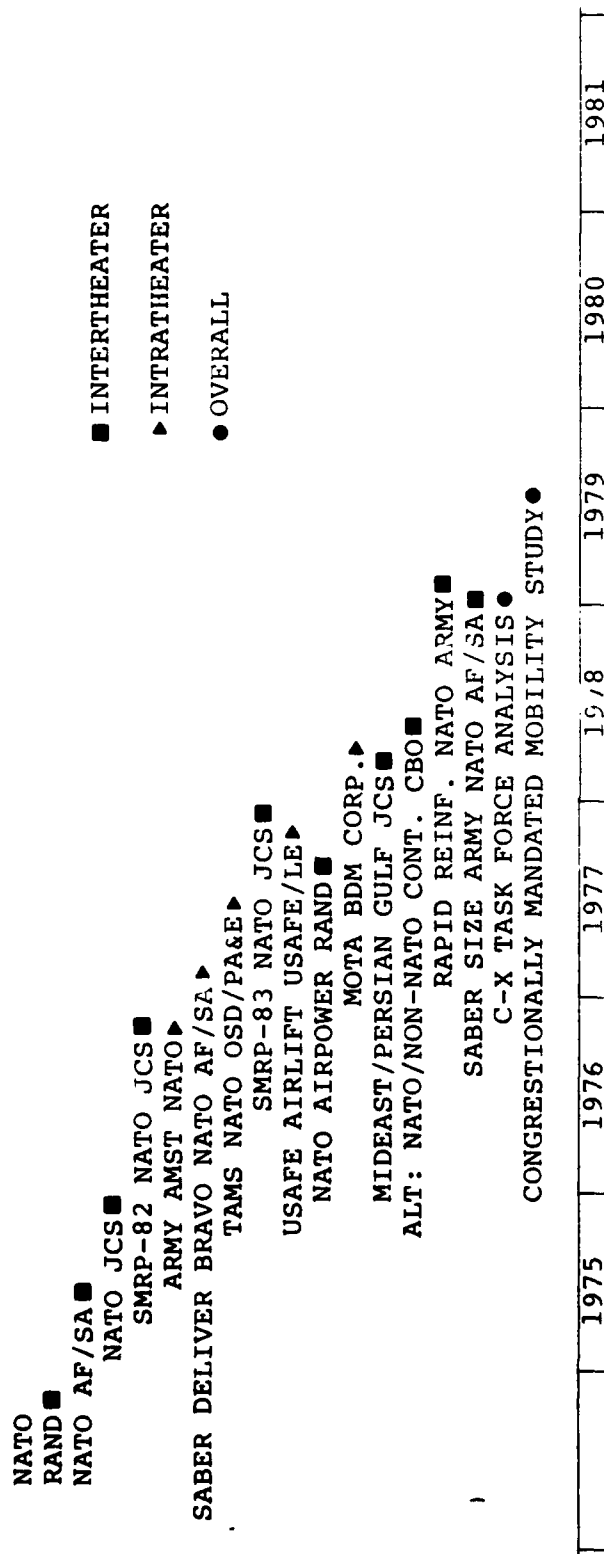


Chart 6-2. Major Mobility Studies since 1974 (Source: Speech presented by Lt Gen DeHaven, Director of Logistics (J4), 5 May 1982)

piecemeal fashion with the exception of the Congressionally Mandated Mobility Study (CMMS). The CMMS was the first effort to look at all modes of transportation under varying threats and four wartime scenarios;

First, a Soviet-backed indigenous force attacked Saudi Arabian Oil fields; second, the Soviets invaded Iran; the third scenario envisioned a NATO/Warsaw Pact Conflict; and finally, the study looked at a two-front engagement which combined the scenarios in Southwest Asia and NATO [13].

General Dehaven's summary comment was that in every case the bottom line was the same--we can't get there from here in time.

Results of the Congressionally
Mandated Mobility Study

After the CMMS study in 1981, the Secretary of Defense recommended to the Congress the following:

1. Base Line (1986)

a. Current airlift enhancement programs (the C-5 wing modification, additional C-141/C-5 spares and crews, and the CRAF enhancement program).

b. The SL-7 fast dedicated sealift program (8 Fast RO/RO ships).

c. Six divisions of POMCUS in NATO.

d. Additional USAF and USMC prepositioning in NATO.

e. Maritime prepositioning ship program as a follow-on to the current near-term program for two brigade-sized MAGTF.

2. Additions to baseline

- a. One hundred thirty thousand tons of pre-positioned munitions and resupply in Southwest Asia.
- b. MPS for a third brigade-sized MAGTF.
- c. Twenty million-ton-miles per day of additional outsize/oversize airlift capability.
- d. Dedicated RO/RO shipping with capacity for 100K tons.
- d. Provision of adequate support to the Army's D-Day force in Europe through some combination of pre-positioning, host nation support, or other mobility means to be developed after further negotiations with European allies.

Moreover, he recommended more airlift, sealift, and pre-positioning, both ashore and afloat. Airlift was recommended to increase to an additional twenty million ton miles per day, and at least half of which should be outsize capable. Even if all of these improvements were implemented, there still remains a shortfall, and the question remains--what are we doing in achieving these recommendations? The recommendations will be discussed in a later section of this chapter.

Determining Mobility Capability and Requirements

It has often been said that the most difficult task the United States is faced with in strategic mobility

is trying to determine, before the war starts, just what needs to be rapidly moved and how much of the needs we can satisfy. Other considerations concern: what is the size of the combat force to be deployed, the distance involved, required delivery dates and the sustainability requirements for those combat forces. We determine mobility capabilities and requirements by first estimating what the enemy will do, and then we plan accordingly (13). General DeHaven's speech to the Military Airlift Committee of the National Defense Transportation Association (NDTA), 5 May 1982, states,

In recent years we have shifted our planning, first from the Pacific to NATO, and then in addition to NATO we focus on Southwest Asia as well as other areas of potential conflict such as Africa, South America and Korea. All of these possible conflicts call for different force responses [13].

Once the requirements are known, airlift and sealift capability is planned to provide for the closure of U.S. forces in a timely manner. Airlift offers fast response (58:8), and MAC's mission is to maintain the military system in a constant state of readiness to perform all tasks assigned by the JCS. The military airlift system consists of both strategic and tactical airlift, as well as operating bases and world-wide airlines of communication for support of strategic and tactical airlift deployment and resupply operations (64:11). Sealift offers sustaining lift capability for the movement of vast amounts of

material to the battle areas during the course of the conflict. Figure 6-1 shows how airlift and sealift provided needed transportation capability for the 1973 Arab-Israeli War (58:10). Urgently needed supplies began arriving by air shortly after the commencement of hostilities. Although the slower mode, sealift accomplished the majority of the sustainability mission.

Strategic Mobility--Changing Times

Major Harrington notes Lieutenant Colonel Ronald K. Sable as stating (22:53):

Twenty-five years ago the U.S. had a significant lead over the Soviets in both strategic and tactical nuclear weapons and theater strike capability; thus, there was little mandate for rapid reaction [54:70].

However, with the ever-expanding Soviet capabilities, there will be less time for reaction and a commensurate requirement to move more forces in a future NATO war (22:53).

Nifty Nugget was the first Department of Defense (DoD) mobilization exercise since World War II. The results of that exercise received a tremendous amount of publicity because it identified many serious shortcomings within our strategic mobility system (45:27). During Nifty Nugget, the realization was made of what would happen if the United States suddenly had to go to war because of its long-standing commitment to defend its NATO allies in Europe. Congress reviewed the results of the exercise and in Major John G. O'Hara's article "Strategic Mobility--We

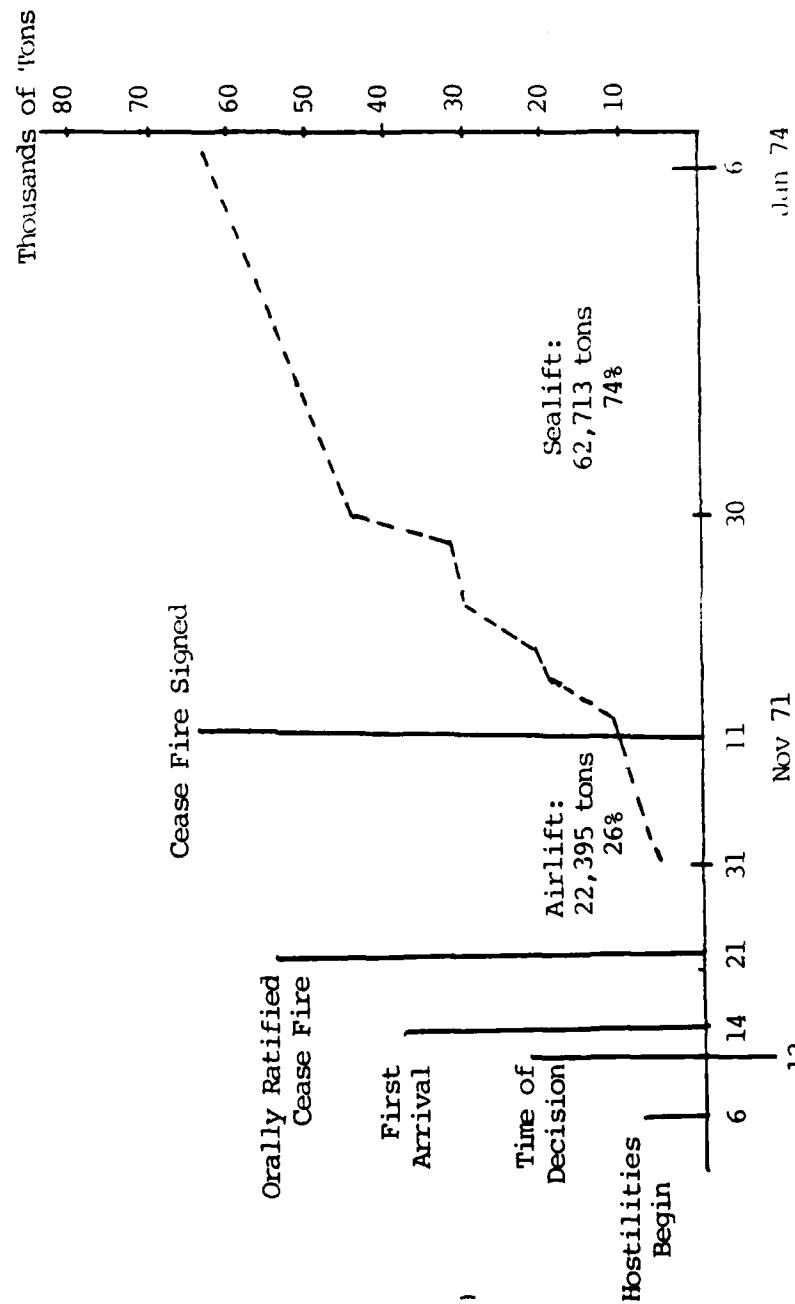


Fig. 6-1. Airlift and Sealift for Arab-Israeli War (Source: Israeli Resupply (58:10))

Have a Long Way to Go" (45:28), 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." Also, Representative Robin Beard, a member of the House Armed Services Committee, called the results of the exercise "devastating" (45:28).

Planning for the 1983 time frame "one war" NATO/Warsaw Pact war scenario calls for the airlifting of the equivalent of five Army divisions and 1300 to 1800 Air Force fighter aircraft to Europe within the first ten to fourteen days of continuous mobilization (45:27). Moreover, a requirement for strategic transport of a variable size force to the concurrent "one-half war" exists. Add the movement of 400,000 troops, and their equipment and 350,000 tons of ammunition (45:27), followed by supplies required for the NATO/Warsaw Pact emergency, and two questions unfold: can we get there from here, and on time?; and do we have a strategic mobility system to handle such contingencies?

Strategic Mobility System

The three TOAs provide transportation assets and traffic management for the strategic mobility system; however, quite often we focus our attention on only the transoceanic portion (Airlift and Sealift) of strategic mobility. That focus leaves out the vital surface movements

from the CONUS installations to the port of embarkation and final surface movement to the field commander in the theater (see Figure 6-2). We must use the total transportation system to optimize our capability to deploy rapidly and take advantage of the time element. One of the ways to get closer to an optimum total strategic mobility system is to focus on management procedures and organization (13).

Management Subsystem

During the Nifty Nugget exercise in 1978, the DoD recognized the need for a single planning and coordinating agency to manage the complex system and serve as a single point of contact for deployment operations. The Joint Deployment Agency (JDA) was established in March 1979 as that agency. The JDA coordinates the activities of the transportation operating agencies; MAC, MSC, and MTMC, in supporting the theater Commanders-in-Chief (CINC) (see Figure 6-3, and also the section on the JDA in Chapter II).

Command, Control, and Communication (C3) Subsystem

The Command, Control, and Communication subsystem begins with the National Command Authority (NCA). Timely decisions are necessary for the NCA to react to an emergency. Subsequently, the NCA decisions must then flow downward so they can be converted into execution tasks, which also need clear and rapid distribution. The NCA decisions provide the action impetus which would activate the mechanisms of

STRATEGIC MOBILITY SYSTEM

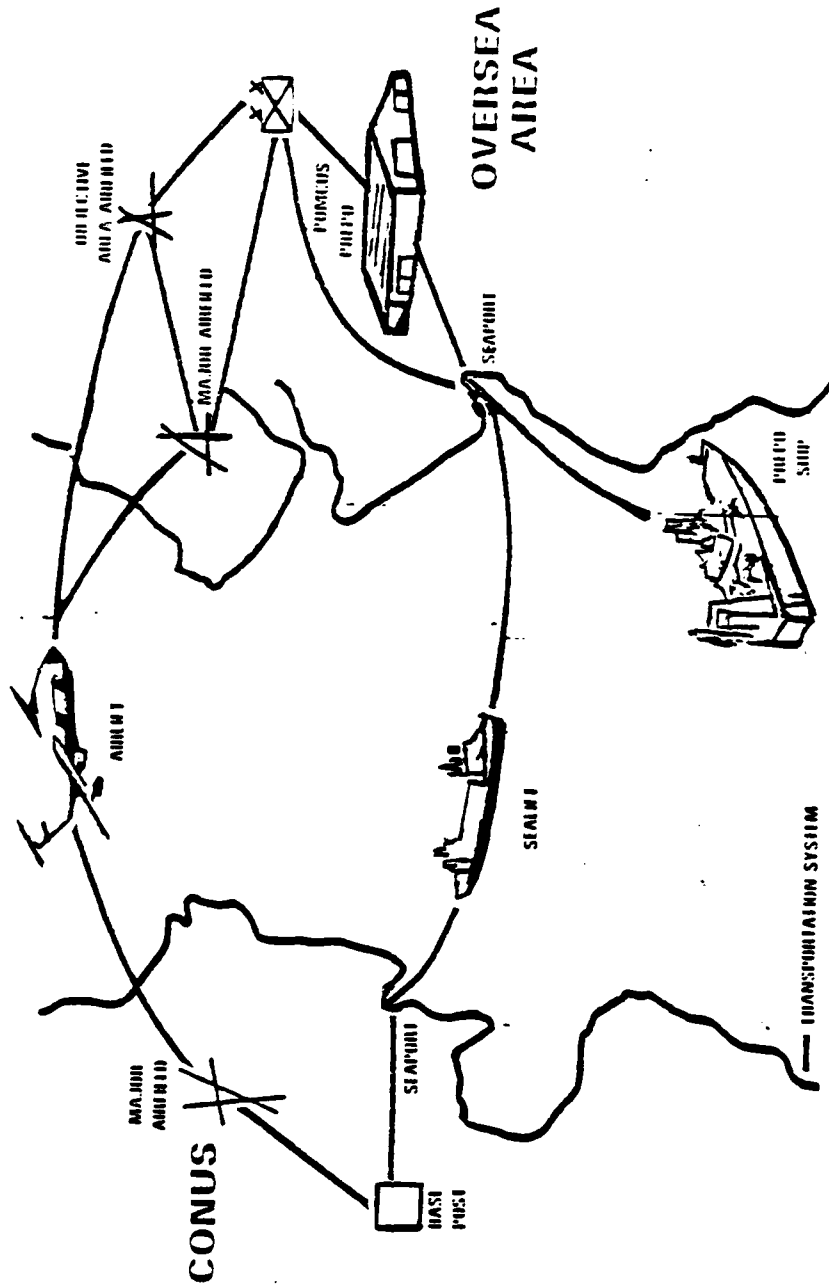


Fig. 6-2. Strategic Mobility System-1 (Source: Lt Gen DeHaven, Speech to the Military Airlift Committee of NDTA, 5 May 1982)

STRATEGIC MOBILITY SYSTEM

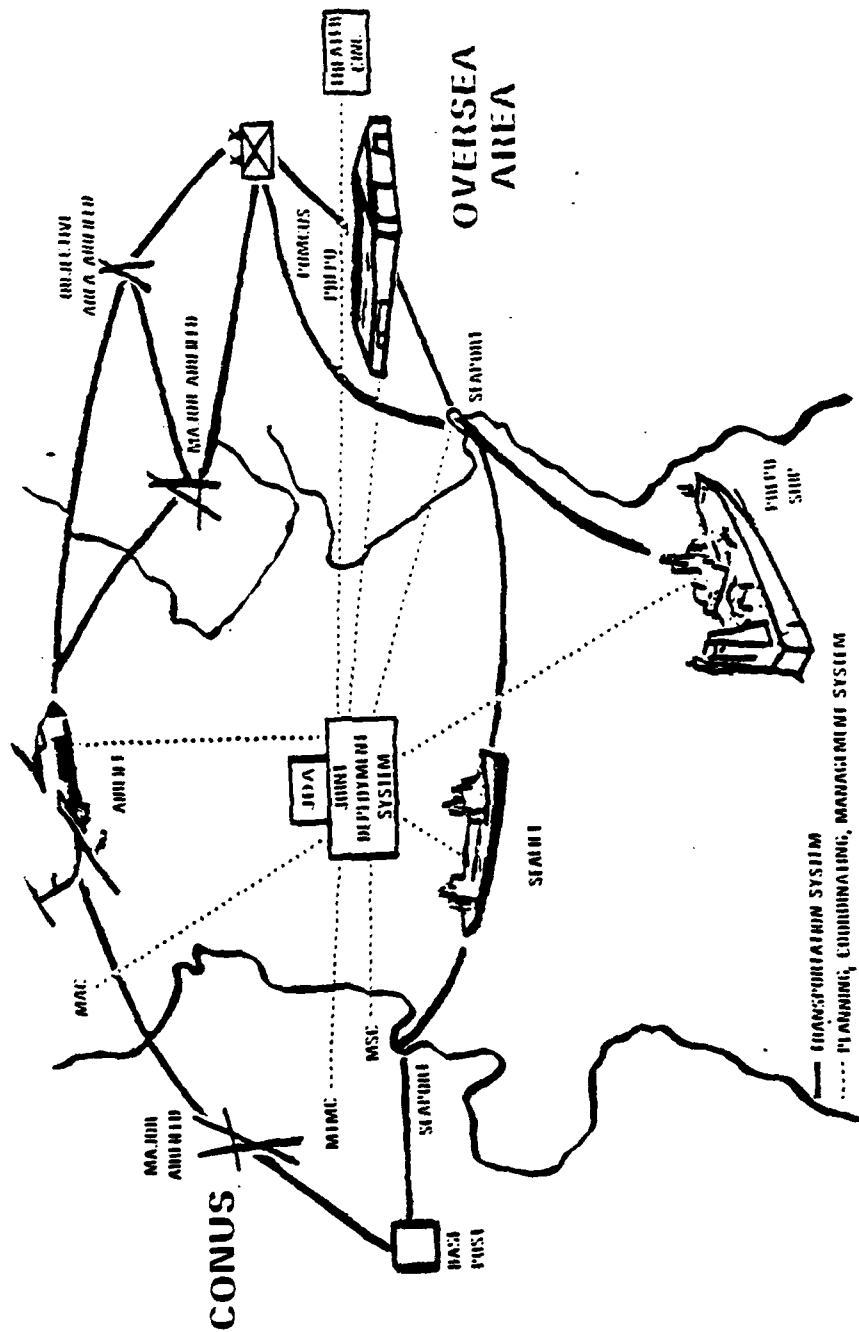


Fig. 6-3. Strategic Mobility System-2 (Source: Lt Gen Dellaven, Speech to the Military Airlift Committee of NDTA, 5 May 1982)

our civil/military partnerships across the mobility system (see Figure 6-4). The civilian partnerships consist of the Civil Reserve Air Fleet (CRAF), the Sealift Readiness Program (SRP) and Contingency Response (CORE) programs.

Department of Transportation,
Office of Emergency
Transportation

During defense emergencies, the Office of Emergency Transportation (OET) provides guidance, develops plans and coordinates actions with federal agencies (except Sealift) needing civil transportation support.

Major Harrington summarizes OET's peacetime requirement as:

The OET collects and analyzes emergency passenger and cargo movement requirements for civil transportation systems, and, as required, establishes priorities and allocates civil transportation resource capacity. In its planning role, the OET interfaces with the Federal Emergency Management Agency (FEMA) which serves as the principal coordinating agency for all Federal emergency planning [22:75].

Furthermore, OET functions primarily as an emergency planning agency during peacetime and does not manage the civilian transportation industry (22:74-78).

Upon the declaration of a national defense emergency, the OET is absorbed into the Department of Transportation Emergency Organization (DOT-EO) (22:76). The DOT-EO becomes the executive manager of national transportation resources by establishing priorities allocation and policy directives (22:76). It is important to note that the

[illegible]

Fig. 6-4.

DOT-EO doesn't receive all of the DoD transportation requirements for movement capability in the CONUS, but is only notified if a particular mode is overcommitted (22:77). Military activities request such relief from the DOT-EO through MTMC, the JDA, and the Secretary of Defense (Assistant Secretary, Manpower, Reserve Affairs, and Logistics) (22:77-78). Further, the military departments do not submit requirements to the DOT-EO for pre-allocated commercial transportation assets such as those being part of the Civil Reserves Airlift Fleet (CRAF) (22:77).

The Secretary of Commerce, through its Maritime Administration, performs many of the same peacetime planning and wartime execution functions as the DOT-OET and DOT-EO (22:76). The Maritime Administration also interfaces with the FEMA, through the Department of Commerce (22:76).

Control and Availability of Strategic Mobility Assets

Chart 6-3 shows how dependent we are on the civil sector or partnership, since over 50 percent of the aircraft and 90 percent of sealift assets are civilian owned and operated during an emergency. Without the Presidential approval for activation of CRAF, the MAC airlift organic fleet can only achieve about 50 percent of their potential productivity. Furthermore, if we do not have at least some of the 100,000 man reserve called-up by the

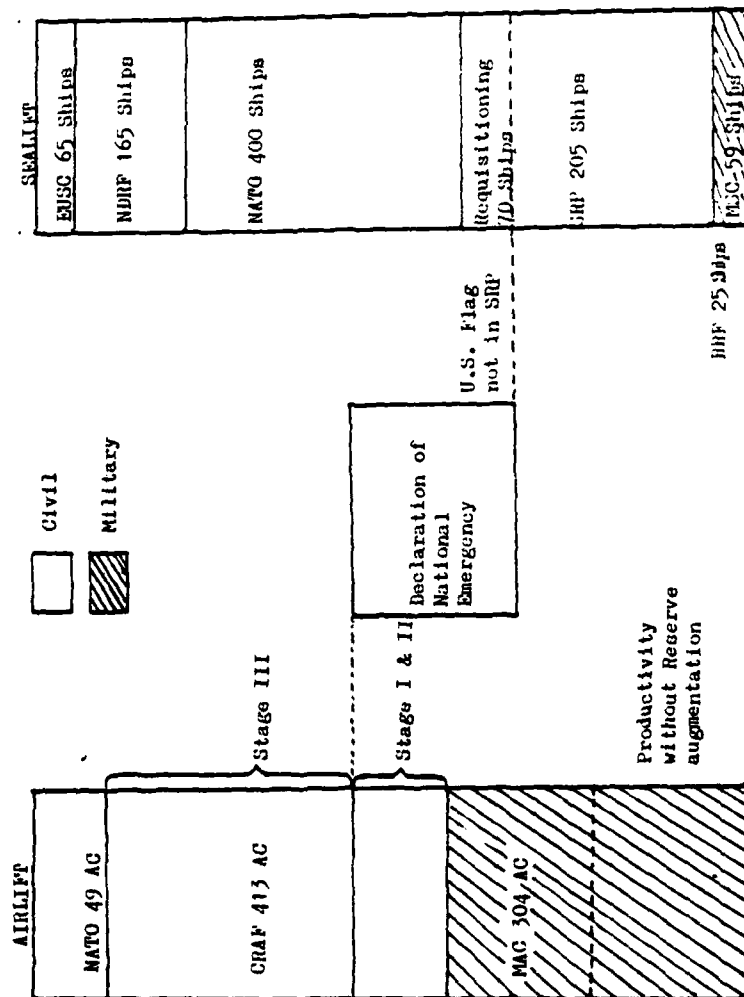


Chart 6-3. Control and Availability of Strategic Mobility Assets
 (Source: Lt Gen DeHaven, Speech to the Military Air-
 lift Committee of NDTA, 5 May 1982)

President (13), part of which is to augment transportation functions, the civil sector ships are virtually useless because we cannot get the required materiel to the ports, and we are limited in our ability to load and unload both ships and aircraft.

Military Airlift Assets

Airlift Support

Airlift deployment support for the Army forces now assigned to the two and one-third division sets of material prepositioned in Europe, must be expanded to accommodate two more brigades and an armored cavalry regiment programmed for the POMCUS⁵ in FY 1982 (19:2-5). Another recent change has been the growing threat of non-NATO emergencies, a threat which places new stresses on the defense transportation system. Even though there are capability shortfalls in support of NATO scenario deployments, the U.S. is best prepared for a NATO contingency: material is prepositioned at strategic locations, an extensive transportation infrastructure is in daily use, and U.S. forces have been operating in Europe since World War II (1:II-3).

Airlift Assets

The development of the organization and resources of U.S. military airlift over the years has resulted in the establishment of an impressing in-being capability to

⁵Prepositioning of Material Configured to Unit Sets.

support strategic mobility requirements. MAC currently maintains the following active airlift assets: 269 C-141s, 76 C-5 Galaxys, and 267 C-130s. Additionally, the Air Reserve forces provide about 250 C-130s, 60 C-123s, and about 45 C-7s, or approximately one-half of MAC's organic military airlift capability (27:24-30). As impressive as the capabilities of this sizable air fleet might be, they are not sufficient to meet the airlift requirements generated by our most demanding war plan scenarios. In an effort to increase the nation's strategic airlift capability, the United States relies heavily on the civil sector in times of war or national emergency (see Chart 6-4) for a percentage breakdown of defense strategic cargo moved by civilian owned assets). The required time frame for initial deployment to a major NATO war is within ten to fourteen days (13; 45:28). If MAC worked around the clock and was supplemented with the CRAF's 413 passenger and cargo aircraft, it would take sixty-eight days to complete the initial deployment mission without prepositioned equipment in Europe (45:28). With the prepositioning of the equipment for three divisions in Europe, the deployment time is reduced to twenty-eight days (45:28). Even though these estimates represent a strategic airlift capability shortfall, which will be addressed in later sections, the deployment closure times would be significantly extended without CRAF participation. The CRAF program was discussed in

CIVIL CONTRIBUTION
TO THE
DEFENSE STRATEGIC CARGO MOVEMENT CAPABILITY
(PERCENTAGE)

	<u>PERSIAN GULF*</u>	<u>NATO**</u>
AIRLIFT	30%	42%
SEALIFT	79%	96%
CONUS LAND/SEAPORTS	99%	99%

*CRAF II AND AVAILABILITY OF SRP IS ASSUMED.

**CRAF III AND SHIP REQUISITIONING AUTHORITY IS ASSUMED.

Chart 6-4. Civil Contribution to the Defense Strategic Cargo Movement Capability
(Source: Organization of the Joint Chiefs of Staff, Directorate of Administrative Services)

Chapter III; however, just a brief review is in order. The CRAF program is called a voluntary civil-military partnership by the Air Force. Under CRAF, the civilian air carrier industry commits selected airlift resources (airplanes and crews) to the Department of Defense in time of emergency. President Truman issued the Executive Order creating CRAF in February, 1951. Presently, the program consists of three stages. In Stage I, aircraft can be committed by contract to a call-up by the Commander-in-Chief of MAC. Stage II is activated by the Secretary of Defense after conferring with the Secretary of Transportation, and Stage III is activated after the President or Congress has declared a national emergency (5:56-57). CRAF has allocated 413 aircraft, of which 340 are long-range, international aircraft, suitable for strategic mobility (13).⁶

Strategic Airlift Shortfalls

In March 1979, the Joint Deployment Agency (JDA) was established, and eight months later, President Jimmy Carter announced that the United States would establish a Rapid Deployment Force (RDF) in response to events in the Middle East. The U.S. had discovered that it possessed neither a credible military response nor the means to transport sufficient forces in a timely manner to the

⁶ The number of CRAF aircrafts change fairly often because of retirement or other reasons.

Persian Gulf region (36:30). In order for the RDF to become a workable strategic option and an instrument of U.S. foreign policy, it must fulfill several demanding criteria (36:30). First, the RDF must be ready, organized, and trained for combat in a variety of locations and climates. Second, it must be tactically and logistically workable; that is, it must be capable of sustained combat for a minimum of thirty days without resupply or reinforcement. Third, it must be positioned in proximity to the area of potential crisis. Fourth, contingency plans must be drawn up to provide for reinforcement within thirty days. Finally, the forces must be set in motion only as the product of the timely decision-making process in the White House (30:55-59).

MAC's current airlift force of C-5, C-141 and C-130 aircraft, while impressive, simply is too small and does not provide enough airlift to meet our nation's increasing need for rapid mobility (see Charts 6-3 and 6-4). This is especially true if strategic airlift was called upon to support deployments to one-and-one-half wars.⁷ Today's mobility forces will meet only one-third to one-fifth of the lift needed in the first fifteen days of such contingencies (13). The fifteen-day period is

⁷"One-and-one half wars"--the "one-war" contingency is a major NATO conflict; the "one-half war" is a lesser contingency in a Third World/Persian Gulf area.

significant because the first sealift will just begin to arrive with large quantities of equipment and resupply material at the end of that period (see Figure 6-1). At the thirty-day point, our present mobility forces can meet only between one-fourth to one-half of the lift needs, depending upon the scenario (13; 36:30). Furthermore, airlift requirements will change dramatically between now and 1986. An Army mechanized division will increase in total weight by 20 percent, with more than a 60 percent increase in its "outsize" cargo (32:30).⁸

Airlift Enhancements to
Improve Airlift Capability

To reduce the shortfall in strategic airlift capability, work is being accomplished on several significant airlift enhancement programs, which are viewed in four phases:

1. Maximize current assets
 - a. Readiness and sustainability
 - b. C-141B stretch/air refueling
 - c. C-5A wing mod
2. Near Term
 - a. C-5B and KC10
 - b. CRAF enhancement

⁸"Outsize cargo is defined as all wheeled equipment and all other items of cargo, programmed for transportation by any mode, for which any single dimension exceeds 100 inches in length, 74 inches in width or 67 inches in height, or exceeds 10,000 pounds in weight [10:504-505]."

3. Mid Term

C-17

4. Long Term

Advanced civil/military aircraft (ACMA)

Efforts are underway to buy sufficient C-5 and C-141 spares to achieve the wartime objective and the surge to sustain utilization rates. An improvement of our existing fleet is underway, along the same lines. However, we need more Materiel Handling Equipment, pallets, and aerial port personnel to both on and offload the aircraft, and MAC will need more crews to fly at the increased utilization rates with the C-5 wing modification. Funds have been requested for all these actions. As a result, General DeHaven reported, "the budget calls for almost a billion dollars between 1982 and 1985 in the area of spares alone [13]." Chart 6-5 shows the capability and the effects of the increased spares on utilization rates by the rise in the C-5 and C-141 capability curves between 1982 and 1986.

The Near-Term program will provide much of the added airlift requirements identified by the CMMS. The procurement of fifty additional C-5 aircraft provides needed airlift capability faster than other alternatives at no additional research and development cost. Also, the KC-10 adds both cargo and tanker capability to the force, and the tanker can give the C-5 and C-141 worldwide capability without intermediate basing (13). With the CRAF

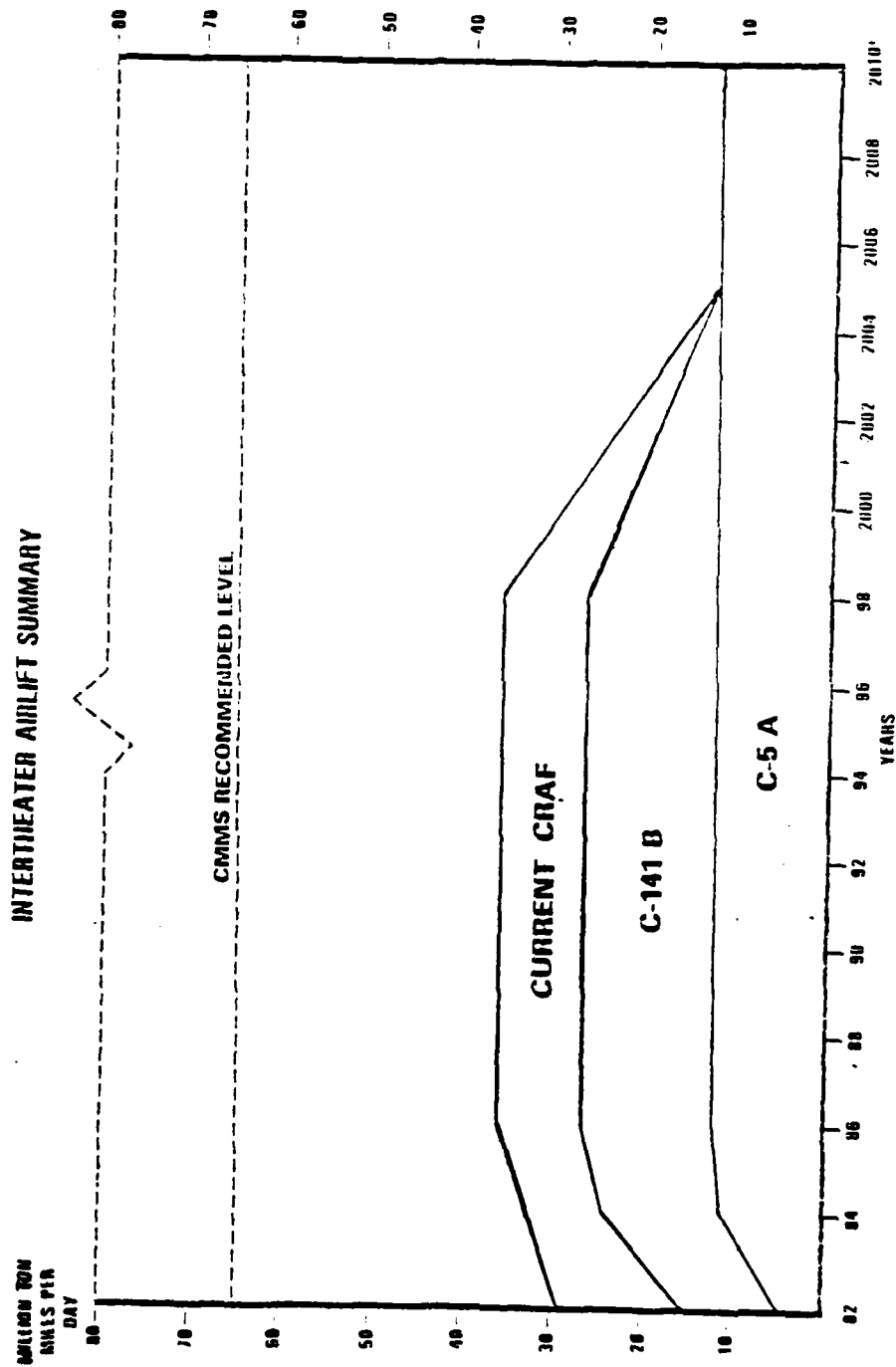


Chart 6-5. Intertheater Airlift Summary-1 (Source: Lt Gen DeHaven, Speech to the Military Airlift Committee of NDTA, 5 May 1982)

enhancement program, defense planners and analysts urge for the civil sector to purchase new aircraft, with the needed range and configuration for defense purposes (22:63). The result of the current and near term airlift enhancement programs is to increase the total airlift capability to about 52 million ton miles per day by the year 1989 (13).

The DoD continues to evaluate the C-17 for Mid-Term enhancements. The C-17 will enable the U.S. to increase airlift capability, both inter and intratheater, and at the same time improve responsiveness, improve operational flexibility, and develop a placement for the aging C-130 and possibly the C-141 (22:63-64). Finally, the Long Term program will begin the Advanced Civil Military Aircraft (ACMA) design in 1984. This program involves the joint development of an early 21st century replacement for existing military aircraft and civil airplanes such as the B-747, DC-10 and the L-1011 (13). As shown in Chart 6-6, the addition of the C-17 and the ACMA will bring the airlift capability up to the CMMS recommended level. General DeHaven's final comment on the airlift enhancement program was "with the C-17, more CRAF enhancement and the ACMA, we can visualize the desired airlift capability by the mid 1990's and into the 21st century [13]."

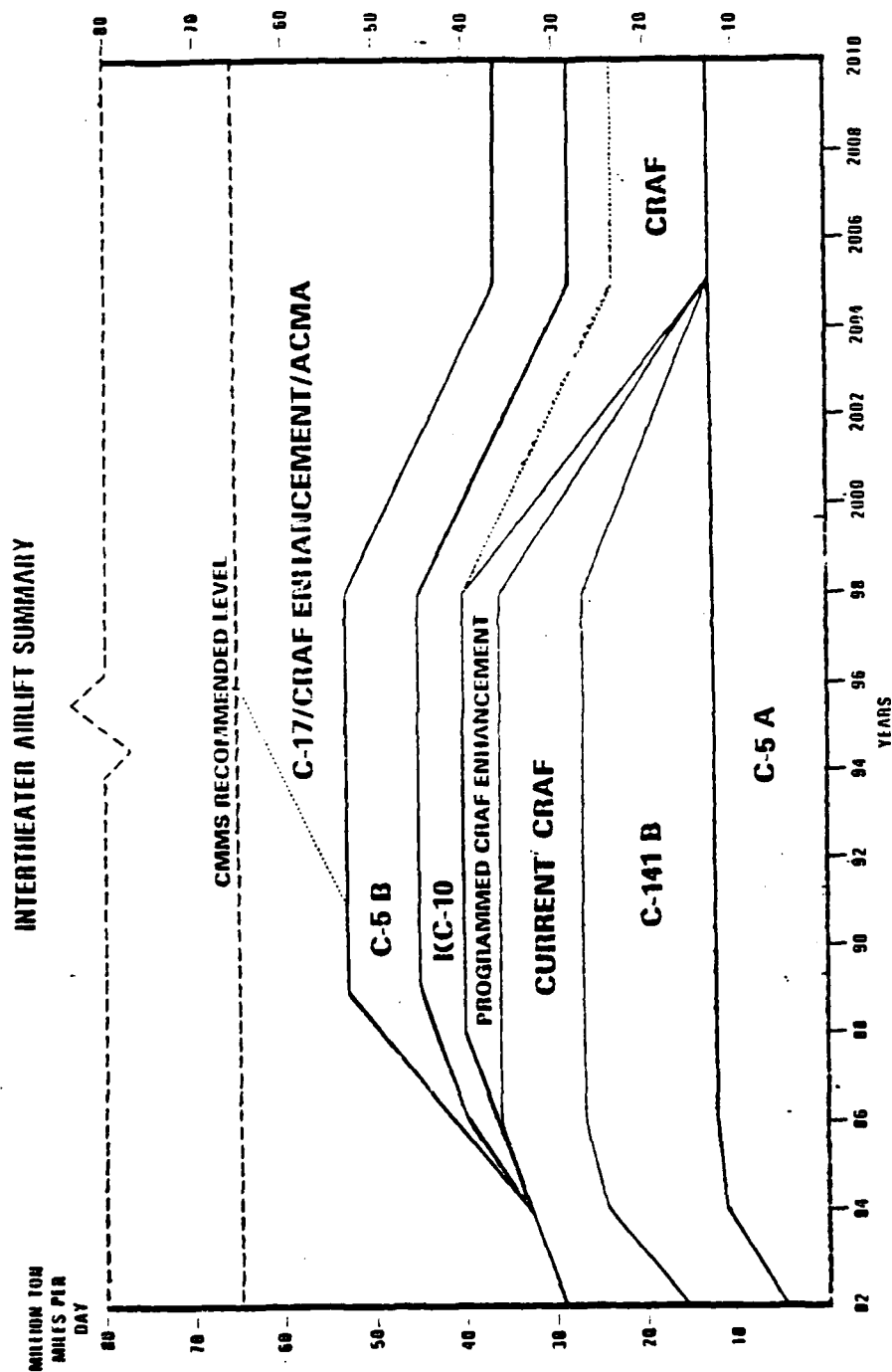


Chart 6-6. Intertheater Airlift Summary-2 (Source: Lt Gen DeHaven, Speech to the Military Airlift Committee of NDTA, 5 May 1982)

Military Sealift Assets

Sealift Support

United States' policy of not striking the enemy first places a tremendous requirement on both airlift and sealift to deploy, after hostilities begin, combat fighting forces anywhere in the world. In a recent article in the Armed Forces Journal International, Admiral Thomas B. Hayward stated: "Without adequate and reliable sealift, literally none of our military plans is executable [24:35]."

Sealift plays a complementary role to airlift and is a very important component of strategic lift capability. Rear Admiral Bruce J. Kenner III, Commander of the Military Sealift Command (MSC), explained to the 1980 National Strategic Mobility Conference members, that we need in strategic mobility, the right mix of airlift and sealift to maintain a forward deployed strategy--one that assumes our wars will not be fought on the U.S. homeland (44:21).

Sealift Assets

MSC's primary mission is to provide contingency and mobilization sealift support of U.S. military forces around the world. It is also charged with developing strategic plans and techniques which would enable expansion of its sealift capabilities in times of national emergencies or other contingencies. The MSC-controlled fleet consists of 126 ships, of which 125 are on

full-operating status. This controlled fleet is divided into the nucleus fleet and the commercial chartered fleet. There were seventy-seven ships in the nucleus fleet by the end of FY 1980. All ships in the nucleus fleet are known as United States Naval Ships (USNS). The fleet consists of eighteen tankers operated under contract with private companies, six specialized cargo vessels, five tankers, and a Naval Fleet Auxiliary Force of twenty-six ships. For further details on MSC assets, reference Chapter IV, DoD Transportation by Sealift (also see Chart 6-3).

Strategic Sealift Shortfalls

An article in the August 1981 edition of the Defense Transportation Journal reports Rear Admiral Bruce Kenner as stating:

The present United States flag strategic fleet is not capable of supporting the "one-and-one-half war" contingency, or even a major "one-war" requirement in its present condition [34:29].

MSC, under the Chief of Naval Operations, is the single manager for strategic sealift in the U.S. Armed Forces. During the reinforcement of NATO, airlift will provide high priority passenger and equipment movement, approximately 80 percent of the equipment tonnage is scheduled for sealift (45:29-30). Of the seventy-seven MSC-controlled ships in the nucleus fleet, only four vessels are suitable to deploy military cargo. The Merchant Marine contains 520 ships, of which 300 are equipped to carry military cargo.

Of the 300, over 100 are modern containerships, which require a vast amount of support resources at both origin and destination ports. The resupply objective of MSC after the initial deployment to Europe, is 1000 U.S. ship arrivals per month, and the shortfall is approximately 600 cargo ships (45:29-30). According to a report published by the MSC, the Navy-sponsored management agency charged with assuring military wartime sealift, MSC cannot be expected to "meet wartime needs for sealift simply because it provides worldwide and efficient peacetime ocean transportation for military service [35:35]." Today, MSC estimates that 95 percent or more of the supplies needed to sustain U.S. troops deployed under emergency conditions would be transported by sea under MSC command authority. MSC is authorized to augment its control fleet from the U.S. Merchant Marine, foreign flag shipping, and the National Defense Reserve Fleet (NDRF), and its quickly deployable Ready Reserve Force (RRF). However, the total number of ships capable of sealift is very low, and nearly the entire American fleet would be needed for a major, conventional war (35:35-37).

Sealift Enhancements to
Improve Sealift Capability

Sealift enhancements are viewed in three major areas:

1. SL-7 Procurement⁹
2. SL-7 Conversion
3. Sealift Discharge
 - a. Offload container ships (Army and Navy).
 - b. Discharge cargo and POL over the shore.
 - c. Temporary container discharge facility (Barge Ship).
 - d. Mobile piers-elevated causeways.
 - e. Facilities to offload tankers and store

POL and water.

Like the airlift enhancement program, efforts are being made to respond to the needed sealift program. Appropriation was made in 1982 for funds to buy the last two of eight SL-7s. Moreover, funds to convert four of the eight SL-7s to roll-on/roll-off type vessels were appropriated (13). The 1983/84 request will provide funds to convert the remaining four ships. Requests were also made in the last budget for funds to begin several programs that should increase the flexibility and productivity of

⁹SL-7s are considered to be the world's largest, fastest class of container ships, belonging to Sea Land, Inc. DoD will purchase the last two of eight total vessels from Sea Land FY 82. SL-7s are 946 feet long and can carry 1096 containers at a speed of 33 knots.

our sealift assets, specifically in discharge capability (see major area number 3 above).

Even with the major sealift and airlift improvement programs, lift capability is still inadequate and plans are underway to preposition material in selected areas to reduce deployment requirements by having equipment in-place. The major prepositioning programs will be discussed next. We have prepositioned equipment in Europe for a NATO reinforcement, and in Southwest Asia to support the Rapid Deployment Joint Task Force (RDJTF) deployment to that region. For Southwest Asia, additional requested funds will provide for procurement, transportation, storage, and maintenance of Mobile Bare-Base Kits, resupply, and ammunition (13). A Memorandum of Understanding with the Norwegian Government was established to enable prepositioning of Marine equipment in Norway which will assist in the defense of NATO's Northern flank (13). Under the Near-Term Prepositioning Force (NTPF), unit equipment and supplies for a brigade-sized Marine Air Ground Task Force (MAGTF) have been prepositioned aboard thirteen dry cargo and tanker ships. These ships are chartered and controlled by MSC, and are on station at Diego Garcia in the Indian Ocean. These ships are fully crewed and fully loaded, and ready to go the support of a U.S. deployment anywhere in Southwest Asia on twelve hours notice (20). The Maritime

Prepositioning Ships (MPS) program will replace the NTPF program in the near future (13).

MTMC, Land and Other Surface Enhancements

More than 70 percent of international DoD surface cargo moves on board containerships during peacetime, reflecting the technological change in the U.S. flag fleet (22:69). These same containerships will be relied upon for intermodal surface deployment of equipment during wartime. Since only about 20 percent of combat unit equipment can be directly containerized (1:III-19), the surface sealift enhancements already discussed are necessary to increase break-bulk and roll-on, roll-off capability (22:69). Other programs are now being studied to make more equipment compatible with the intermodal container system (22:27-29). In 1979, another enhancement program was established by MTMC called the Contingency Response (CORE). The CORE program allows for the American Rail Road Association and the American Trucking Association officials to jointly coordinate Civil and DoD planning requirements within MTMC (22:79-80).

MTMC Achievements

In June 1982, MTMC expanded the SAFE HAVEN/REFUGE through CONUS. This procedure made it mandatory for CONUS installations having adequate facilities to provide

SAFE HAVEN/REFUGE for qualifying carriers transporting DoD explosives and protected classified freight (12:4). Another MTMC achievement was the establishment of the Reserve Component Transportation Terminal Units (TTUs) and Development Control Units (DCUs) to support Contingency plan deployments. The TTUs and DCUs will be rapidly activated to augment MTMC's peacetime capability. A Battle Book Concept was developed to enhance the readiness of key units from peacetime to a deployment posture. At commercial ports, the Battle Book serves as a mobilization and operational guide for the TTUs and the DCUs, answering questions on how deployment operations should be handled (12:3).

Summary

The primary air and sealift programs that have been presented in this chapter emphasize the DoD's commitment to improve our strategic mobility lift capability. About half of our airlift capability for wartime support comes from the private sector. The magnitude of the wartime deployment task is indicated by the fact that during a war we would have to move more cargo out of the United States to Europe in two days than we move in thirty days in peacetime. The initial mobilization objective of five Army divisions and 1300 Air Force fighters is scheduled to close in Europe within ten to fourteen days. MAC,

working around the clock and supplemented with 413 passenger and cargo aircraft from the U.S. Civil Reserve Air Fleet (CRAF), would still take twenty-eight days to complete the mission, considering that three divisions of equipment is positioned. Follow-on logistics supply and other priorities are not even addressed in this calculation.

Over the years, United States military and civil transportation assets have been subjected to planned reductions after each war, and have required extraordinary effort in order to be reconstituted to meet new wartime shipping levels that far exceed peacetime requirements. In past wars, there has been time to reconstitute the transportation system for force deployment and resupply. However, in previous pages, this author has emphasized that current strategy considers a significant time compression in mobilization efforts. With the major transportation enhancement programs presented in this chapter, the Executive Branch, Secretary of Defense, the Joint Chiefs of Staff as well as the Transportation Operating Agencies appear strongly committed to meeting the challenge of rapid mobilization deployment capability. Our very future depends upon these enhanced and responsive air/land/sea transportation programs.

CHAPTER VII

CONCLUSIONS AND RECOMMENDATIONS

Conclusions

Throughout this paper, I have examined the evolution of the Department of Defense Transportation System (DTS), and its current problems and trends. In reviewing six chapters, I found that the Defense Transportation System is dynamic and very complex, involving the organization of agencies at varied levels which interface with all services. The objective was to analyze the organizational development of the transportation system within the Department of Defense since World War II (WWII), and to study the present system. This objective was met. Moreover, in the first chapter, I presented the reader with some past events leading to the development of the United States' transportation system, since that system is heavily relied upon in defense transportation.

Major problem areas were identified throughout the paper; and where appropriate, they were studied to show cause and effect relationships. Emphasis was given throughout the study on the need and directions toward reorganization. Efforts to integrate and centralize traffic management functions within the DoD have been

considered since WWII. The passage of the National Security Act of 1947 provided strategic direction to organize the armed forces and place their operation under separate but integrated control. This led to the integration of three effective teams: that of land, naval and air forces. Congress stated its intent to retain the separate services, at the same time Congress directed the Secretary of Defense to take necessary steps to eliminate unnecessary duplication and overlap in the field of procurement, supply, transportation, storage, health, and research (11:71-72). Department of Defense Directives 5160.2, Single Management Assignment for Airlift Service; 5160.10, Single Manager Assignment for Ocean Transportation; and 5160.53, Single Manager Assignment for Military Traffic, Land Transportation, and Common-User Ocean Terminals state: The purposes and objectives of this assignment with respect to DoD Air (ocean) (land) transportation are: ". . . to eliminate duplication and overlapping of effort between and among Military departments, Defense Agencies, and other Components of DoD [71:2; 72:2; 73:2]."

Attempts to Improve Management
of the Transportation
Operating Agencies (TOAs)

There has been a number of independent commissions, Congressional committees, defense study panels, and similar groups studying ways to eliminate duplication and

overlapping of effort among the Services and the TOAs, specifically those efforts of the Military Sealift Command (MSC) and the Military Traffic Management Command (MTMC). Studies dating to the first Hoover Commission in 1949, recommended the establishment of one agency having overall traffic management responsibility for both the Department of Defense and the federal government. The Hoover Commission led to the Federal Property and Administrative Service Act of 1949, also called Public Law 81-152 (11:73). The General Services Administration (GSA) was established from the act, which gave it the power to establish policy and methods relative to the procurement of transportation and the exercise of traffic management. However,

. . . this act gave the Secretary of Defense the prerogative of exempting the national security establishment from control under the act at any time he determined such exemption to be in the best interest of national security [11:73].

The Second Hoover Commission, in 1935, recommended that the Secretary of Defense create a Director of Transportation under the Assistant Secretary of Defense for Supply and Logistics. Again, attempts to resolve the duplication of transportation efforts among the Services failed. Under different administrations and DoD officials, other attempts also failed to eliminate duplication and overlapping of functions among the agencies, specifically, MSC and MTMC.

During the 1960s, the DoD and its three Transportation Operating Agencies (TOAs), entered an era of technological change towards intermodalism because of the advent of containerization. Because the DoD interfaces with the commercial industry for a vast majority of transportation requirements, intermodalism created a new awareness from the Department of Defense officials. This awareness was brought into focus since land and sea transportation systems were evolving into an integrated surface system. To keep land and sea transportation organizations separate would further compound the problems of overlap and duplication of effort.

In 1979, the Joint Deployment Agency (JDA) was established under the Joint Chiefs of Staff (JCS) as the JCS coordinating authority for mobilization, deployment and planning. It is responsible for using authorized systems and measures for planning, coordinating and monitoring movements of mobilized forces and material necessary to meet wartime objectives. The three transportation operating agencies (TOAs), which oversee the DoD transportation systems and which the JDA is tasked to coordinate, are decentralized and, in the case of MSC and MTMC, perform duplicative and overlapping functions. This severely impedes the coordination, planning and monitoring functions of the JDA in preparing for the execution of military transportation objectives.

On 10 September 1980, a comprehensive Harbridge House study concluded that no single traffic manager existed for the DoD; furthermore, overlapping and duplicative activities between MSC and MTMC continued to cause unnecessary costs (1:1-3). The effects of the problems of management fragmentation, duplication and overlap of functions, are increased pipeline times and inventories and delayed transitions from peace to wartime operations. The study did find that the airlift system, operated by the Military Airlift Command (MAC), encompasses the functions, controls, and operational interfaces necessary to meet wartime requirements. Accordingly, the study brought out that MSC and MTMC should integrate commands to bring together with MAC, a DoD transportation system to meet any national emergency.

On 30 June 1981, Deputy Secretary of Defense Frank C. Carlucci directed the Joint Chiefs of Staff to realign the transportation and management functions. The JCS established a special task force which reviewed the functions, organizational structures, and relationships of the TOAs in the transition from peace to war and in support of wartime requirements. The special task force found MAC able to meet wartime requirements. Moreover, the task force found MTMC and MSC not able to efficiently transition from peace to war and satisfy wartime requirements. Subsequently, on 16 September 1981, Deputy Secretary of

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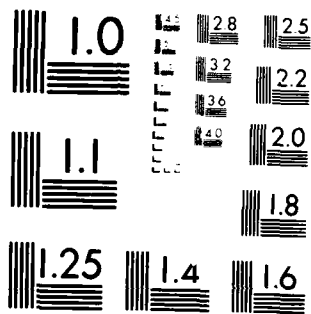
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Defense Carlucci approved the JCS's proposal which included the transfer of sealift cargo and passenger booking and contract administration from MSC to MTMC. The proposal provided a means for reducing duplication of efforts, establishing a single point of contact for surface movement for the supported Commanders-in-Chiefs (CINC), and shippers, and for reducing deployment time. MSC, on the other hand, recommended transfer of port operations from MTMC to MSC, in order to consolidate the entire sealift functions under a single commander.

Deputy Secretary of Defense Carlucci's approval of the transfer of cargo booking and contract administration functions from MSC to MTMC was a move designed to improve defense posture and readiness. Subsequently, sealift cargo and passenger booking and contract administration functions were transferred from MSC to MTMC on 1 October 1981. MTMC as single manager, now has operational management, in peace and wartime, of defense intermodal containers and other dry cargo moving in partial or full shipments. Moreover, MSC will continue to be the sealift operator and procurement agent, and will also provide the principle DoD interface with the merchant marine and Maritime Administration. The most significant accomplishment in this transfer is the consolidation of cargo booking under MTMC, which will permit MTMC to work directly with commercial ocean carriers and shippers to arrange for

the lift of DoD export cargo on specific voyages. For more than thirty years, MSC and MTMC booking and contract administration functions were long-standing issues of duplication. The new procedure will replace the former duplicative and very costly booking procedure. The transfer of functions also will create a more integrated Defense Transportation System that will be cost efficient in peacetime and operationally effective in wartime. The elimination of duplicative efforts will simplify the JDA's communications efforts and will enhance management control. This will reduce response time in the process of preparing for war.

Recommendations

The realignment of cargo booking and contract administration functions was the first step. However, it is still necessary to fully integrate MSC and MTMC into one transportation command to cut across the old transportation boundaries with regard to routing, management information systems and operational responsibilities. The complete elimination of duplication and overlap of functions is necessary to decrease pipeline time and inventories, eliminate management fragmentation, and allow for effective transition from peace to wartime operations. The integration would, furthermore, align the defense transportation organization with the defense and national

transportation systems it manages--systems that have evolved because of intermodal concepts. In endorsing the recommendations to develop a surface transportation command, which would along with the single manager for airlift service (MAC), form the Defense Transportation System organization, care must be exercised to maintain service boundaries and responsibilities. Eston T. White summarizes the issue:

Where there may be wasteful practices in procurement between the three branches of service or overlapping in responsibilities where two masters are attempting to control the same servant, it is obvious that steps have to be taken to correct these deficiencies. However, solutions to eliminate wastefulness and lines of authority in the Department of Defense are never two-dimensional. There is always that third dimension which involves the deeper questions of readiness posture, contingency planning, national security, and war fighting [76:132].

From the outset, Congress had no intent to integrate the three services with the National Security Act of 1947. It may be more appropriate to maintain status quo between the three services. However, functional boundaries must be cut across in order to maintain national objectives. The commercial industry has taken intermodalism as a wave of the future. We must strive to interface smoothly with this rapidly changing industry without rivalry from our services. It is this author's recommendation that an integrated surface transportation command, along with the Military Airlift Command, would be the best organization structure for the Defense Transportation

System. This structure, along with the coordination and control functions established in the JDA and along with the needed transportation enhancement programs, would make the Defense Transportation System most responsive to the strategic mobility mission. It should be noted that with the possible advent of complete air and surface inter-modal transportation systems in the future, it may be appropriate to consider the development of a single defense transportation command. I recommend this issue be the subject of future research efforts.

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