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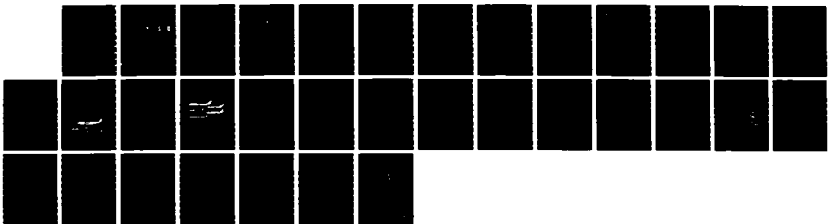
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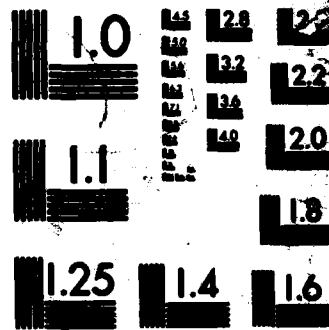
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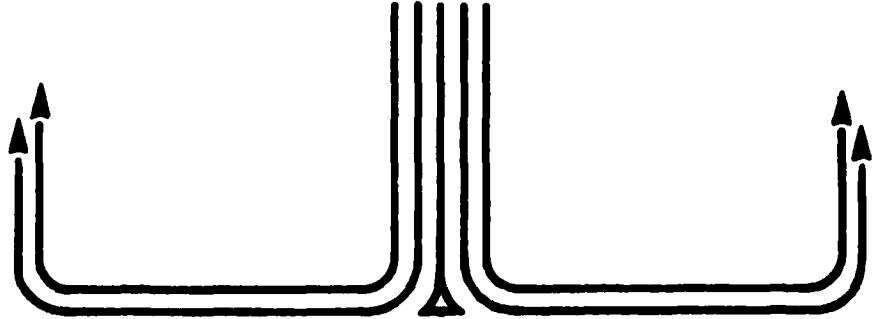
## STUDENT REPORT

THE AIRLIFT SYSTEM--

IT'S MORE THAN JUST HAULING TRASH

MAJOR CHRISTOPHER A. KELLY 86-1360  
*"insights into tomorrow"*

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**REPORT NUMBER 86-1360**

**TITLE THE AIRLIFT SYSTEM--IT'S MORE THAN JUST HAULING TRASH**

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**Submitted to the faculty in partial fulfillment of  
requirements for graduation.**

**AIR COMMAND AND STAFF COLLEGE  
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## PREFACE

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During his previous assignment, one of the author's duties was to brief the Military Airlift Command's Program Objective Memorandum to the Air Staff. During those briefings, Air Staff personnel often wanted to know why MAC supported so many different programs. People from other services, commands, and organizations often asked the same question. The answer isn't simple, but it boils down to the fact that the airlift system requires a number of people, facilities, and assets to accomplish its assigned tasks. This handbook describes that system--how it works and the organization that supports it. Armed with this information, users of this handbook should have a better understanding of the need for MAC programs.

In preparing this handbook, the author concentrated on the airlift system. This document does not address other vital MAC missions like Weather Reconnaissance, Combat Rescue, Special Operations, or the programs needed to support them.

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Major Christopher A. Kelly is a student at the Air Command and Staff College, Air University, Maxwell Air Force Base, Alabama. Prior to attending the Air Command and Staff College, Major Kelly was Chief, Programming and Budgeting Branch, Planning, Programming, and Budgeting System Division, Directorate of Programming and Policy, Deputy Chief of Staff, Plans, Headquarters Military Airlift Command. A Command Pilot, Major Kelly has flown over 2,000 hours in the C-130 aircraft as a co-pilot, pilot, instructor pilot, and evaluator. He is a distinguished graduate of Squadron Officer School. Major Kelly received his Bachelor of Science in Engineering Management in 1974 from the United States Air Force Academy and a Master of Arts in Management in 1983 from Webster University.



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## EXECUTIVE SUMMARY

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**REPORT NUMBER** 86-1360

**AUTHOR(S)** MAJOR CHRISTOPHER A. KELLY, USAF

**TITLE** THE AIRLIFT SYSTEM--IT'S MORE THAN JUST HAULING TRASH

I. Purpose: Explain the complexity of the airlift system.

II. Problem: When you mention the term airlift, most people envision large airplanes moving cargo and people from point A to Point B. But, it's not that simple anymore, and today airlift is much more complicated than in the past. To perform the tasks assigned to today's airlift forces, the Air Force has developed a sophisticated airlift system made up of many elements. To really understand the term airlift you have to understand this system and the numerous programs that support it.

III. Data: Airlift is one of the nine basic missions of the United States Air Force. The AF expects its airlift forces to be capable of responding to a wide variety of taskings, anytime, anyplace. Therefore, the AF developed an airlift system composed of five key elements--aircraft, people, aerial ports, logistics support, and command and control requirements. Together, these elements provide the nation with worldwide airlift capability. The Military Airlift Command (MAC) operates this system. MAC has organized itself in a manner that enhances its capability to accomplish its mission. MAC has also established clearly defined relationships with the unified and specified commands. These relationships allow MAC to support the airlift needs of these warfighting commands. MAC also developed a concept of operations that allows it to provide rapid, effective deployment of combat

forces anywhere in the world. Deployments may be over long or short distances, and MAC may land, drop, or extract the combat forces into their objective. MAC coordinates all this activity through a command and control system designed to enhance the overall flexibility of airlift.

IV. Conclusions: Airlift is a key ingredient in the country's combat capability. It is the fastest, most flexible form of transportation we can rely on during a crisis. Therefore, it's important to understand airlift's mission, the elements that make up the airlift system, how that system interfaces with other military forces, and its concept of operations. Because of its complexity, the airlift system requires a number of programs to support it. It is these programs that provide the United States with its vitally needed airlift capability.

## CHAPTER ONE

### INTRODUCTION

The ability of the United States to deter aggression, limit conflict, or wage wars depends on the nation's ability to project combat forces wherever and whenever commanders need them. In his Fiscal Year 1986 Annual Report to Congress, Secretary of Defense, Caspar Weinberger, made the following comment regarding force projection, "A combat force--however well trained or equipped it may be--simply cannot be effective if it must wait for lift (airlift) at its home base while a conflict progresses overseas." (2:193) This country's most rapid and flexible force projection resource is airlift, and airlift plays a vital role in virtually every military operation we undertake. But, airlift is an often misunderstood term, and there is too little understanding of the components which make up the military airlift system. This document will describe that system--what it is composed of, how it works, and the doctrine and organization that supports it. By understanding these concepts, the reader will gain a better understanding of the need for the many Military Airlift Command (MAC) programs required to support and operate this system.

To enhance the reader's understanding of the airlift system, this handbook will describe four major components of that system. First, a definition of the airlift mission will lay the foundation for the concepts that follow. Next, a detailed explanation of the elements that make up the airlift system will give the reader a better idea of the coordination required to make the system operate efficiently. Third, an explanation of MAC's organization, command relationships, and command and control system will illustrate how airlift fits into the nation's overall combat capability. Finally, describing MAC's concept of operations will lead to a better understanding of how MAC operates and the tasks commanders expect airlift forces to perform.

The ability of this country to influence events in the world often depends on our military capability. If we want to rapidly project that combat capability beyond our borders, we must have a healthy, dependable airlift system. The challenge for the airlift system is to be prepared to move combat forces anywhere in the world and in time to make a difference. Chapter Two will discuss the most important characteristic of the airlift system--its mission.

## CHAPTER TWO

### MISSION

Air Force Manual 1-1, Basic Aerospace Doctrine, states, "Air Force missions describe broad military objectives attained by employing aerospace forces." (9:3-2) One of the nine basic Air Force missions defined in this manual is airlift.

Airlift objectives are to deploy, employ and sustain military forces through the medium of aerospace. The airlift mission is performed under varying conditions, ranging from peace to war. As a combat mission, airlift projects power through airdrop, extraction, and air-landing of ground forces and supplies into combat.... Airlift, therefore, accomplishes the timely movement, delivery, and recovery of personnel, equipment, and supplies, furthering military and national goals. (9:3-5)

This definition of the airlift mission highlights the broad range of capabilities that airlift must possess. This mission is diverse and multi-faceted, and it requires airlift forces that can respond to the needs of its users. Because the criteria vary from peacetime to wartime, you can also define MAC's mission in relation to its peacetime and wartime roles.

In peacetime, MAC's mission is to train and maintain the airlift system in a constant state of readiness. MAC provides mobility to Department of Defense (DOD) forces, military assistance programs, and disaster relief operations as part of this readiness criteria. (7:11-2; 4:3-2) During its day-to-day operations, MAC uses the airlift by-product of training its flight crews to maintain the readiness of the entire system.

However, in wartime MAC provides resources on a global basis to deploy and employ combat forces and then resupply them once those forces are in place. (7:11-2) During his testimony before the Senate Armed Services Sea Power and Force Projection Subcommittee on 24 March 1983, General James R. Allen, former Commander in Chief Military Airlift Command (CINCMAC), said it this way:

MAC's primary mission is to project our Nation's rapid response forces to all corners of the globe where our security interests may be threatened. This involves moving fighting forces and their equipment from the United States to staging bases around the world and sustaining them through an air resupply channel. We also operate within the theater--getting our forces to the battle areas and sustaining them in combat.  
(6:-2)

In carrying out its primary mission, MAC is responsible for two major areas of concern. First, MAC must plan and execute airlift missions during periods of crisis and war in support of the unified commanders. In other words, MAC must be ready to move military forces and their equipment anywhere in the world at a moment's notice. Second, MAC must coordinate and develop airlift doctrine, strategy, and operational plans under the direction of the Joint Chiefs of Staff (JCS). Said another way, MAC must establish broad guidelines and policies for the employment of airlift so that users can develop detailed war and contingency plans. (7:II-2)

The timely movement of combat forces anywhere in the world in support of national objectives is a characteristic of the United States' superpower status. It is airlift's mission to provide the country with this capability. In order to accomplish its mission, MAC keeps all the working parts in top shape by using them on a daily basis. MAC also coordinates with the users of its product, the warfighting unified commanders, to insure the system meets their needs. Using this discussion as a foundation, Chapter Three will define the essential elements that make up the airlift system.

## CHAPTER THREE

### ELEMENTS OF THE AIRLIFT SYSTEM

To accomplish its diverse worldwide mission, the Military Airlift System is composed of several key elements. These elements include aircraft, people, aerial ports, logistics support, and the command and control system of the active-duty, the Air National Guard (ANG), the U.S. Air Force Reserve (USAFR), and the Civil Reserve Air Fleet (CRAF). This chapter will address each of these elements. First, let's look at the aircraft used in today's airlift system.

### AIRCRAFT

The Air Force possesses four primary aircraft capable of accomplishing intertheater (strategic or long-range) and intratheater (tactical or short-range) airlift operations. These aircraft are the C-5 Galaxy, C-141 Starlifter, KC-10 Extender, and the C-130 Hercules (Figure 1).

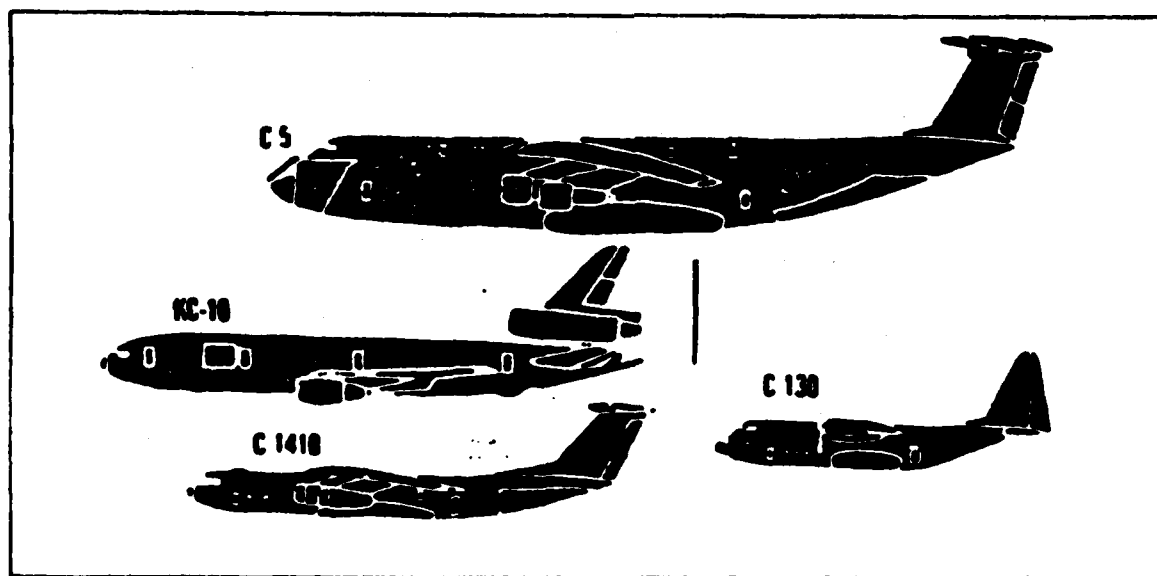


Figure 1. Military Airlift Aircraft



The C-5 is an air-refuelable, long-range aircraft designed to carry 340 ground troops or 36 cargo pallets. It can airlift a maximum payload of 121 tons 1,650 nautical miles and is the only aircraft currently capable of carrying outsized equipment. (7:II-4; 3:600-13 -600-19)

The C-141 is also an air-refuelable, long-range aircraft that can carry 152 ground troops, 109 litter patients, or 13 cargo pallets. It can airlift up to 45 tons of cargo 1,970 nautical miles, or air drop 35 tons of equipment or 122 combat ready paratroops. (7:II-4; 3:600-13 - 600-19).

The KC-10 is an air-refuelable, long-range aircraft capable of performing a cargo, air refueling, or dual role. This versatile aircraft can swing from its cargo role of carrying up to 85 tons 3,400 nautical miles, or off-loading up to 390,000 pounds of fuel in its refueling role. (7:II-4; 3:600-13 - 600-19)

The C-130 is a turbo-prop, assault transport designed to deliver troops or cargo by either the airland or airdrop method. The C-130 can carry 92 ground troops, 64 combat ready paratroops, 74 litter patients, or six cargo pallets. It is also the only airlifter designed to routinely operate from forward operating locations. (7:II-4; 3:600-13 - 600-19) But, these military aircraft aren't our only airlift assets.

On 2 March 1951, President Truman signed Executive Order 10219 establishing the Civil Reserve Air Fleet (CRAF). Since that time the CRAF has become a coordinated program designed to quickly mobilize the nation's civilian airlift resources to meet DOD requirements. Civil carriers contractually commit themselves to make their resources available for both peacetime and wartime augmentation of the organic military airlift capability. (3:407-1)

CRAF aircraft currently available for augmentation include the Boeing 747 (99 tons of cargo or 419 passengers), McDonnell Douglas DC-10 (70 tons of cargo or 359 passengers), Lockheed L-1011 (274 passengers), Boeing 707 (30 tons or 149 passengers), and the McDonnell Douglas DC-8 (41 tons or 264 passengers) (Figure 2). (3:II-6 - II-7) Now, let's look at the skilled people who operate and maintain these airlift assets.

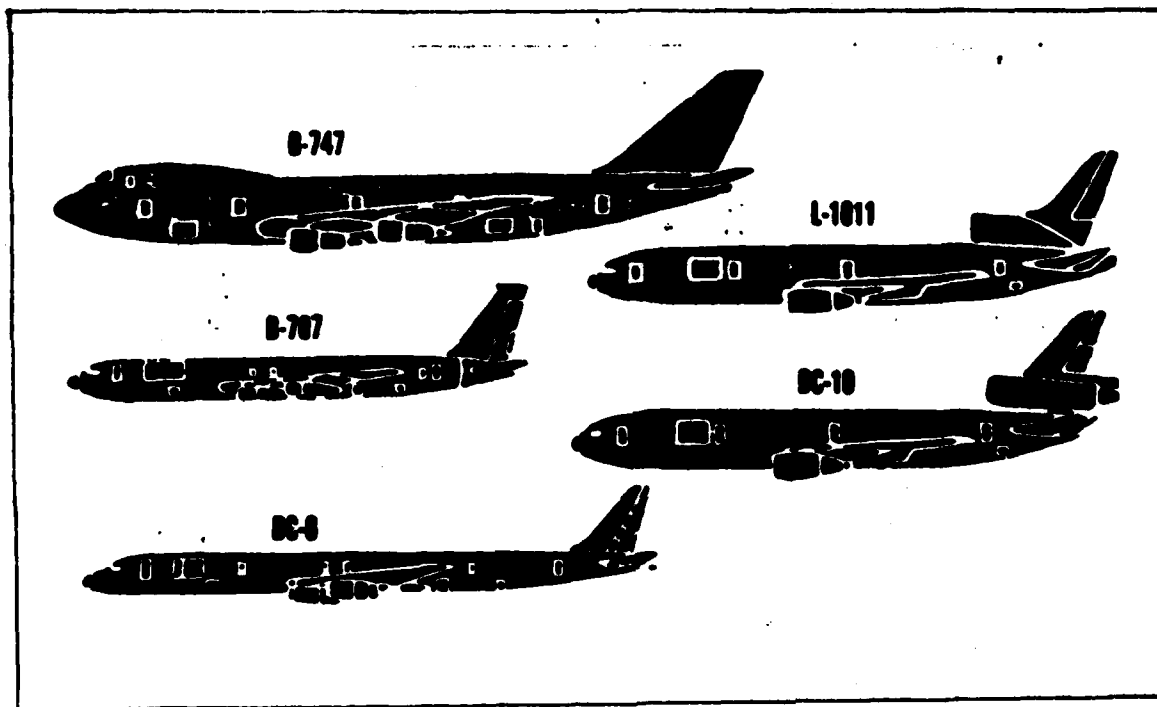


Figure 2. CRAF Aircraft

### PEOPLE

Well-trained and motivated people are essential to the airlift system, because it is people who operate and maintain the system's equipment and facilities. It is a total force composed of active-duty, Air National Guard (ANG), and U.S. Air Force Reserve (USAFR) people. From its 21 airlift wings/groups located throughout the world, MAC people exercise the airlift system to maintain combat readiness, accomplish training, and transport passengers and cargo for the DOD.

In the case of MAC's C-5 and C-141 force, the USAFR provides one-half of the aircrews and one-third of the maintenance personnel available to operate and maintain aircraft through the Reserve Associate Program. In this program, the Air Force assigns Reserve personnel to squadrons at MAC active duty bases where they fly and maintain active duty aircraft on a daily basis. The USAFR also provides more than 20 percent of MAC's intratheater capability from 14 squadrons equipped with unit owned and maintained C-130s. MAC is also the gaining command for 19 ANG C-130 units. These people and aircraft represent over 30 percent of MAC's wartime intratheater airlift capability. (7:II-2) However, the Air Force has plans to make significant changes to the current active-duty, air reserve force (ARF) mix.

The Airlift Total Force Plan outlines a new force mix that will "fully integrate and modernize the ARF while maintaining the minimum active airlift force needed to meet our airlift requirements." (8:33) In the short term, the plan calls for four specific actions to meet its outlined force mix. First, the continuation of the conversion of the 16 aircraft C-130 squadron at Kelly AFB, TX, (USAFR) to an eight aircraft C-5 squadron. This conversion began in Fiscal Year (FY) 1985. Second, in FY 86, convert the eight aircraft C-130 squadron at Andrews AFB, MD, (USAFR) to an eight aircraft C-141 squadron. Next, beginning in FY 86, convert the eight aircraft C-130 squadron at Jackson, MS, (ANG) to an eight aircraft C-141 squadron. Finally, beginning in FY 87, convert the ANG unit at Stuart AFB, NY, to an eight aircraft C-5 squadron. In the long term, the plan recommends the transfer of 44 C-5, 80 C-141, and 48 C-17 aircraft to the USAFR and ANG before the turn of the century. (8:A-4)

#### AERIAL PORTS

Another important element of the airlift system is the global network of aerial ports and air terminals operated by MAC. These aerial ports accept, process, and insure the continued flow of cargo and people to their final destination. To do this job, MAC maintains 22 strategic ports, 4 mobile aerial ports, and 22 smaller operating locations. To better understand the role of the aerial ports, let's look at the requirements for cargo and passenger movement in greater detail.

On the surface the operation of aerial ports looks like a matter of moving boxes through the cargo terminal and then on to and off of aircraft. In reality, it is a complex system involving DOD time standards, priority systems, and the handling of classified, sensitive, or hazardous material. The actual loading of the cargo onto the aircraft culminates many hours of labor and attention to detail. (3:207-1 - 207-13)

Aerial ports are also responsible for providing passenger service to DOD personnel traveling in the airlift system. During peacetime, MAC operates 13 commercial gateways at major international airports, making overseas travel much more convenient for DOD sponsored passengers. MAC also operates military air terminals that provide services for large unit moves and provide a base for expansion during wartime. To accomplish the movement of passengers, MAC operates a system for reservations, processing, and serving people who use the airlift system. MAC has six reservation centers equipped with state-of-the-art computers to handle passenger reservations. Passenger services at terminals include automated seat assignments, baggage handling, and the ability to handle passengers who show up without reservations. Some other important passenger services provided by aerial ports include customs and immigration coordination, release of space available seating, and passenger briefings. (3:206-1) It is easy to see that aerial port functions are important if the airlift system is going to operate smoothly and efficiently. Another important element of the airlift system is logistics support.

#### LOGISTICS SUPPORT

Aircraft are an important element of the airlift system, but they are of little value if they don't have the logistics support they need to operate. This section will discuss the maintenance and supply concepts MAC uses to keep the airlift system operating.

Since the first military use of aircraft, maintenance concepts and organizational structure have seen numerous changes. In 1959, the Air Force issued Air Force Manual (AFM) 66-1, Maintenance Management, as a means of standardizing base level maintenance. Within the manual's guidelines, each major command developed a program to meet its unique mission requirements. To meet its requirements, MAC uses the concept of specialization with central control outlined in AFM 66-1. (3:302-2) This concept establishes a maintenance structure headed by a Deputy Commander of Maintenance (DCM). He or she is responsible to the Wing Commander for the maintenance of all equipment and management of the entire maintenance organization. The structure assigns a staff and several production squadrons to the DCM so he or she can accomplish his or her responsibilities. Staff functions include planning, scheduling, and controlling maintenance activities. Production squadrons include the Organizational, Field, and Avionics Maintenance Squadrons. This is the basic maintenance structure found in MAC wings at their home bases. (3:302-6 - 302-7)

Because of its mission, MAC has a unique daily requirement to provide maintenance support to aircraft at locations other than their home base. APM 66-1 gives MAC the latitude it needs to handle this problem. At numerous enroute locations, MAC has established Military Airlift Support Groups (MASG) or Military Airlift Support Squadrons (MASS). Working under a single manager, these consolidated units are responsible for the launch and recovery of enroute MAC aircraft.

MAC's supply system closely parallels its maintenance system. At each of its bases, MAC has a supply squadron headed by a chief of supply. He or she is responsible for managing the six branches that provide supply services. Organized functionally, these branches provide the procedures, storage and distribution, customer support, material management, systems, and fuel management of all supply items needed to operate the airlift system. To complement its MASG or MASS at overseas locations, MAC has established the forward supply system (FSS). The MAC unique FSS units are nothing more than a miniature base supply that stocks MAC aircraft-unique items. (3:313-1)

#### COMMAND AND CONTROL SYSTEM

The last major element of the airlift system is the command and control system. The unique nature of airlift operations requires a unique command and control system. The system must interface with operations, logistics, aerial port, intelligence, and command elements at every echelon in the airlift system. (Chapters Four and Five will provide more details on command relationships and the actual operation of the command and control system.) In order to support these five elements, the command and control system must supply a mix of automatic data processing, communications equipment, facilities, procedures, and people capable of interfacing and coordinating requirements between the five functions. According to the MAC Command and Control System Master Plan, "A perception of the distances involved, the probable lack of communications facilities at diverse locations, and speed of modern aircraft emphasizes the requirement placed upon the MAC Command and Control System." (4:1-1) The next chapter will examine MAC's organization, command relationships, and command and control actions.

## CHAPTER FOUR

### ORGANIZATION, COMMAND RELATIONSHIPS, AND COMMAND AND CONTROL

Today, the Air Force possesses an airlift force capable of executing its mission of force projection independently or in conjunction with other forces. This capability is the result of effective organization, clearly defined relationships with the unified and specified commands, and established lines of command and control. The organization of U.S. airlift forces facilitates the training and support of these forces so they will be ready to accomplish wartime taskings. Also, the relationship of airlift forces to the unified and specified command structure will insure the effective command and control of limited airlift assets. Accordingly, this chapter details the organization, command relationships, and command and control concepts that apply to the airlift system.

### ORGANIZATION

Since its creation in 1947, the United States Air Force has organized itself along functional lines. (1:1-15) As an Air Force major command, MAC is responsible to the Chief of Staff to organize, train, and equip forces for the accomplishment of military airlift. The Commander in Chief Military Airlift Command (CINCMAC) is responsible for the readiness and training of all units assigned to his command, including MAC-gained Air Reserve Forces. CINCMAC is also responsible for coordinating MAC operations and activities with affected Air Force major and component commands. Finally, CINCMAC serves the Secretary of the Air Force as the Executive Director of the Single Manager Operating Agency for airlift. As such, CINCMAC insures the effective employment of airlift to achieve greater flexibility and mobility of U.S. combat forces. (5:3)

To accomplish these tasks, CINCMAC delegates the responsibility for command of assigned flying units to three numbered air forces (21 AF, 22 AF, 23 AF) designated MAC Air Forces (MACAF). Twenty-Third AF is responsible for the worldwide employment of special missions. Because of their unique responsibilities, capabilities, and missions, these forces don't always conform to the same command procedures described in this chapter. From its headquarters at McGuire AFB, NJ, 21 AF is responsible for airlift operations from the Mississippi River

east to New Delhi, India. Twenty-Second AF, with headquarters at Travis AFB, CA, is responsible for airlift operations from the Mississippi River west to New Delhi, India. For units based within the continental U.S., MACAF commanders exercise command through subordinate airlift wings and squadrons. MACAF commanders exercise command of airlift units based overseas through subordinate commanders of airlift forces (COMALFs) or airlift division (ALD) commanders, then on to the wings and squadrons. (4:3-1; 1:2-11)

### COMMAND RELATIONSHIPS

As a Specified Commander, CINCMAC is responsible to the President and Secretary of Defense, through the JCS, for the accomplishment of military missions assigned to him. During peacetime he is responsible for planning activities that will accomplish airlift objectives during JCS exercises, periods of crisis, and wartime. (1:2-11) Because of these responsibilities, MAC must constantly coordinate airlift requirements with the other unified and specified commands as they develop their war plans.

The worldwide demand for airlift support requires MAC aircraft to operate for long periods of time and far away from their home bases. When MAC aircraft are operating in a unified commander's geographical area of responsibility, questions over operational command often occur. Clearly defined command relationships and operating procedures provide answers to these questions. As mentioned above, CINCMAC exercises operational command of airlift forces through his subordinate commanders. However, under the authority of the Secretary of Defense, the JCS can further assign airlift forces to unified commanders. In this case, the unified commander exercises operational command of airlift aircraft through the Air Component Commander and his subordinate COMALF. The COMALF exercises operational control of missions through the aircraft commander tasked to fly the mission. (3:404-1 - 404-5)

### COMMAND AND CONTROL

MAC bases its command and control system on the principle of centralized control and decentralized execution. Therefore, MAC's command and control system is made up of a number of levels that ensure the practice of this principle. MAC needs a system with these characteristics because of its worldwide operations, number of operating locations, and continuous recycling of aircraft through the system. This section will describe the functions of the MAC Command Center, MACAF Operations Centers,

Airlift Control Centers, Unit Command Posts, and the mobile elements of this system.

At the apex of the system is the MAC Command Center. Located at HQ MAC, the MAC Command Center is the system's primary interface with the National Military Command Center, the Joint Deployment Agency, and the Air Force Operations Center. From the MAC Command Center, MAC develops and implements emergency actions, interfaces with the JCS Crisis Action System, and monitors the status of MAC-assigned resources. (3:104-1)

At the next level are the MAC Air Force (MACAF) Operations Centers located at McGuire AFB (21 AF) and Travis AFB (22 AF). The MACAF Operations Centers have execution authority for airlift missions operating in their area of responsibility. Responsibilities include detailed mission planning, tasking subordinate units with specific missions, flight following, and monitoring the capability and status of subordinate units. Information regarding airlift assets operating in overseas theaters comes from Airlift Control Centers (ALCC). (3:104-1)

Organized and equipped to function in both the MAC and theater commander's command and control systems, ALCCs perform numerous functions. Because it is the focal point for information about airlift assets operating in the theater, the ALCC provides the theater COMALF a clear, continuous picture of airlift operations within his theater. The ALCC also integrates airlift operations with the overall air effort by interfacing with elements of the Tactical Air Control System. (3:104-1)

At the next level in MAC's command and control system is the Unit Command Post. The Command Post functions as the direct link between the command and control authority and the people who operate the missions. Each unit Command Post works in a dual role. First, it receives, implements, and provides feedback concerning directives from higher echelons. It also acts as the local commander's focal point for coordinating all mission essential functions. Activities monitored by the Command Post include aircraft maintenance, cargo and passenger operations, intelligence, flight following, and location of key personnel. (3:104-2) All of the facilities discussed so far are at fixed locations.

Because MAC often operates from places that don't have the fixed facilities mentioned above, MAC developed mobile command and control elements. Consisting of mobile ALCCs, Airlift Control Elements (ALCEs), and Combat Control Teams (CCT), these mobile elements deploy to locations without permanent command and control facilities. Once deployed, the mobile ALCC has the same responsibilities as the fixed ALCC discussed earlier. The ALCE



is a composite MAC organization made up of resources from a number of functional areas. For example, people and equipment from maintenance, supply, aerial ports, transportation, intelligence, and weather organizations often make up an ALCE package. Functioning as a mobile command post, the ALCE deploys to provide services similar to unit command posts. (3:104-2)

In some cases, MAC aircraft operate from airfields and assault zones located too far forward for ALCE operations. In this case MAC calls upon its Combat Control Teams (CCT) for specialized command and control capabilities. Highly trained and self-sufficient, the CCT deploys to forward areas to establish landing, drop, and extraction zones for follow-on operations. Once in place, the CCT performs command and control, air traffic control, and weather observation functions. (3:107-7)

This chapter has summarized MAC's organization, relationship to other commands, and its command and control principles. These ideas should give the reader some idea of the complex nature of the airlift task. In Chapter Five we will see how all this comes together by discussing MAC's concept of operations.

## CHAPTER FIVE

### CONCEPT OF OPERATIONS

The goal of the airlift system is to provide rapid, effective deployment of combat forces and equipment anywhere in the world. This system operates in peacetime much the same way it will in wartime but at a reduced tempo. This chapter examines the operation of this system. It addresses the subjects of intertheater and intratheater airlift, delivery modes, airlift tasks, and discusses how MAC apportions its limited airlift assets to meet its taskings.

### INTERTHEATER AND INTRATHEATER AIRLIFT

Intertheater airlift missions are transoceanic in nature and normally operate between main operating bases (MOBs). Deployment operations that move units from their home station to an overseas port of debarkation are an example of an intertheater mission. Likewise, resupply missions that operate through strategically located fixed aerial ports in support of deployed units are another example of intertheater airlift. C-5, C-141, and commercial aircraft normally perform intertheater airlift operations.

Once people and equipment arrive in a theater, intratheater airlift provides transportation between MOBs and forward operating locations (FOLs). MAC trains and equips its intratheater forces to deliver combat forces directly into objective areas, to relocate combat forces within combat areas, and to perform logistics operations in support of theater forces. (7:II-8 - II-9) C-130s are the aircraft that usually conduct intratheater airlift operations. (Figure 3)

### DELIVERY MODES

The airlift system accomplishes the delivery of troops, equipment, and supplies by one of three modes--airland, airdrop, or extraction. Users prefer the airland mode (landing and off-loading at the desired location) because it is the fastest and most effective method. By using the airland mode, combat

forces can maintain a greater degree of unit integrity, and cargo is subject to less damage. But when landing is impossible, or the user wants to employ the element of surprise, airdrop is the preferred mode. This capability allows the projection of combat power into areas otherwise denied by the enemy or the environment. Finally, extraction is the delivery mode airlift forces use when landing is impossible and pinpoint accuracy is mandatory. This method uses large parachutes to extract up to 37,500 pounds of equipment or supplies from a C-130 aircraft. (7:II-8 - II-9)

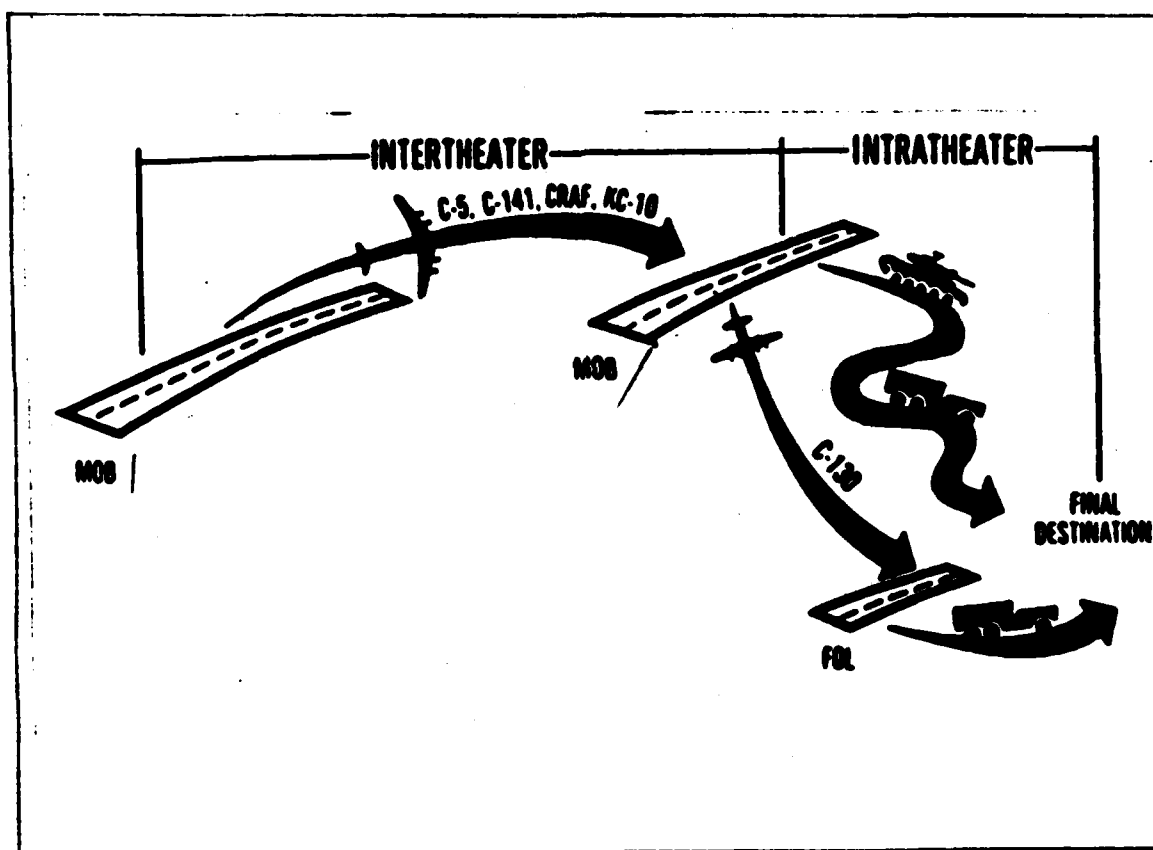


Figure 3. Airlift Concept of Operations

## AIRLIFT TASKS

It is also possible to further define the airlift mission in terms of the specific tasks of deployment/employment, logistics support, and aeromedical evacuation. Deployment/employment operations refer to the movement of a combat unit to the general area of conflict (deployment), and its subsequent movement to a specific location for a specific purpose within that area (employment). Logistics support refers to the resupply of deployed forces by any delivery mode. The rapid movement of high priority cargo and key people are also part of the logistics support task. Finally, airlift aircraft accomplish the aeromedical evacuation of patients whenever practical and feasible. MAC is responsible for intertheater, intratheater, and domestic aeromedical evacuation. Specialized C-9 aircraft provide this service on a day-to-day basis. However, C-130 and C-141 aircraft are ready to augment these aircraft whenever needed. (3:--; 7:II-8)

## APPORTIONMENT

According to the US Air Force Airlift Master Plan, "Since 1974 at least 17 major mobility studies have been completed which compared established requirements to an airlift capability. In every case airlift requirements far exceed capabilities." (7:III-1) Because of this airlift shortfall, MAC developed a system to categorize and prioritize airlift support. This section will examine this system by describing both peacetime and wartime airlift operations.

During peacetime, users forecast airlift requirements needed to execute their readiness programs. Through a detailed refinement process, user requirements are put into one of four airlift categories--channel, Special Assignment Airlift Mission (SSAM), JCS Exercise, or Joint Airborne/Air Transportability training (JA/ATT). Let's look at each of these categories in a little more detail.

Channel airlift is comparable to regularly scheduled civilian airline service. The same type of aircraft (C-141 for example) will fly the same route, at the same time, on the same days of the week. Because of the volume and frequency of the user's requirement, MAC establishes a channel because it is the most effective and efficient way to meet that requirement. But what if the user has some high priority cargo that has to move today, and the channel isn't scheduled until tomorrow? That's where Special Assignment Airlift Missions (SAAMs) come into play. (3:204-1)

SAAM is a premium airlift capability that users request when other transportation means won't fill the bill. SAAMs usually come about because some kind of constraint forces the user to request this category. Examples of these constraints include time, location, and type of cargo. For one or more of these reasons, sealift, channel airlift, or surface transportation does not meet the user's requirement. (3:204-1)

The third category of airlift support is the JCS Exercise. As the category title indicates, MAC is responsible for providing airlift support to numerous JCS field training exercises each year. What the title doesn't tell you is that this airlift supports the simulation of wartime operations involving planning, preparation, and execution. There are two primary purposes for these exercises. First, participants can demonstrate their capability to perform wartime missions. Second, participants are given the opportunity to validate both their current training procedures and the assumptions they make in developing war plans. (3:110-1 - 110-5)

Finally, Joint Airborne/Air Transportability Training (JA/ATT) is the fourth category of airlift support. In this category both the user and MAC aircrews are performing proficiency and continuation training. For example, the Army requires its paratroops to maintain their parachuting proficiency by making at least one jump each month. MAC requires its aircrews to maintain their airdrop proficiency by periodically dropping paratroops. The Army and Air Force match these training requirements and use JA/ATT to meet the needs of both services. (3:109-1 - 109-3)

Because of the current shortfall in airlift capability, it is easy to see why airlift will be in such great demand during any future war. Therefore, it is important to understand how MAC and the other unified and specified commands plan to employ airlift in wartime. The tool used by the JCS to develop war plans is the Joint Strategic Planning System (JSPS). It is through this complicated system that unified and specified commanders develop Operation Plans (OPLAN) that meet specific JCS taskings. As part of this OPLAN development planners outline the forces, support, and transportation they need to meet the tasking. The planners include airlift as part of that transportation requirement. Then MAC, in coordination with the OPLAN writers, applies airlift assets to the airlift requirement and develops an airlift schedule to meet the requirements. (3:405-7)

However, things don't always go the way we plan. Therefore, upon receipt of a warning order, alert order, or other indication of potential execution of a specific OPLAN, MAC begins an

immediate review of the airlift schedule. After coordinating with the supported command and JCS, MAC makes necessary adjustments to the plan. Then, MAC begins to make the necessary preparations and coordination with its subordinate units to ensure a responsive airlift flow if the JCS issues an execute order. (3:405-1 - 405-16)

## CHAPTER SIX

### CONCLUSION

Today, the United States finds itself involved in a very complex, interdependent world. Many of our vital interests are far away from our shores. If we are going to maintain our position in the world and have influence on events where we have a vital interest, we must maintain a viable airlift capability. This nation's ability to move combat forces to any location, at anytime, soon enough to make a difference in any crisis, is one reason the rest of the world sees us as a superpower. It is the airlift system that provides that ability.

Through the preceding description of four key components of the airlift system, the reader should have gained a better understanding of the system and its complexity. The definition of the airlift mission found in Chapter Two served as a starting point for many of the concepts that followed. Chapter Three provided a detailed explanation of five major system elements and highlighted the coordination required to keep the system operating smoothly. Next, Chapter Four showed the reader how the airlift system fit in with the other pieces of our overall combat capability by looking at MAC's organization, command relationships, and command and control system. Finally, Chapter Five explored MAC's concept of operations, and the reader gained a better understanding of how MAC performs its mission and the tasks its users ask it to perform.

In the future, any military operation this country undertakes will rely heavily on airlift. Because it plays such a vital role in our country's force projection ability, people should have a better understanding of airlift and what it really means. This handbook has provided a description of the airlift system. Through this description the reader should now have a better appreciation for the complexity of this system. Armed with this knowledge, the reader should also recognize the need for the numerous MAC programs that support this system and allow it to operate. In the long run, it is those programs, properly structured and funded, that actually provide this nation with its airlift capability.

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## GLOSSARY

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### List of Acronyms

ALCC	Airlift Control Center
ALCE	Airlift Control Element
ALD	Airlift Division
AF	Air Force
ANG	Air National Guard
ARF	Air Reserve Forces
CCT	Combat Control Team
CINCMAC	Commander in Chief Military Airlift Command
COMALF	Commander of Airlift Forces
CRAF	Civil Reserve Air Fleet
DCM	Deputy Commander for Maintenance
DOD	Department of Defense
FOL	Forward Operating Locations
FSS	Forward Supply System
HQ MAC	Headquarters, Military Airlift Command
JA/ATT	Joint Airborne/Air Transportability Training
JCS	Joint Chiefs of Staff
JSPS	Joint Strategic Planning System
MAC	Military Airlift Command
MACAF	MAC Air Forces

MASG	Military Airlift Support Group
MASS	Military Airlift Support Squadron
MOB	Main Operating Base
OPLAN	Operation Plan
SAAM	Special Assignment Airlift Mission
USAFR	United States Air Force Reserve

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