

# Air Mobility Operations



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25 June 1999

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## FOREWORD

*Air power must be more than force because the problems of the world must increasingly be addressed by the military with more than force. Many of the crises and conflicts in our shrinking world are no longer highly susceptible to resolution through the projection of force, but—as in protection of the Kurds in the wake of Operation DESERT STORM—will require the projection of infrastructures such as security, medical care, communications and transportation.*

**Carl Builder**  
*The Icarus Syndrome*

**Air power is essential to our national security.** *The air mobility system, a combination of airlift, air refueling, and air mobility support assets, help enable rapid, decisive responses to crises worldwide.* Air mobility forces may operate in support of other combat forces or as direct instruments of national policy. It provides our nation the strategic agility to deploy, employ, and sustain US military power anywhere, at our own initiative with the speed and tempo that our adversaries cannot match. Often though, it is air power's nonlethal application of airpower that directly achieves national security objectives. *Fundamentally, air mobility is about warfighting—its an enhancer which guarantees to the world that the United States can quickly project combat power anywhere, anytime.*

**MICHAEL E. RYAN**  
**General, USAF**  
**Chief of Staff**

**25 June 1999**



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# INTRODUCTION

## PURPOSE

Air Force Doctrine Document (AFDD) 2-6, *Air Mobility*, has been prepared under the direction of the Chief of Staff of the Air Force (CSAF). This document establishes doctrinal guidance for the application of air mobility forces and is consistent with, and complementary to, capstone doctrine contained in AFDD 1, *Air Force Basic Doctrine*, and AFDD 2, *Organization and Employment of Aerospace Power*. AFDD 2-6 serves as the keystone doctrine document for employing airlift, air refueling, and air mobility support elements as an integrated air mobility system.

## APPLICATION

AFDD 2-6 applies to all active duty, Air Force Reserve (AFR), Air National Guard (ANG), and civilian Air Force personnel. The doctrine in this document is authoritative but not directive; therefore, commanders are encouraged to exercise judgement in applying this doctrine to accomplish their missions.

## SCOPE

This document discusses air mobility as an integral part of aerospace power. It describes air mobility organizations, command relationships, and operational elements to include airlift, air refueling, and air mobility support assets. It also describes how air mobility forces may be employed across the full range of military operations as either direct or supporting instruments of aerospace power.



**The Berlin Airlift - America's first victory of the cold war**



# CHAPTER ONE

## GENERAL

*Strategically, time and space are relative, and as the history of war has shown again and again, a handful of men at a certain spot at a certain hour is frequently a far more powerful instrument of war than ten times the number on the same spot twenty-four hours later.*

**J.F.C. Fuller**

### OVERVIEW

US national interests drive the national security strategy of “global engagement.” Our dependence on political, economic, and military partners demands a military capable of operating on a global basis. Rapid global mobility is essential to that capability. This is especially true today where a smaller, more continental United States (CONUS) based force must be able to rapidly respond to unpredictable threats wherever and whenever they occur. **Quick and decisive responses can diffuse crises before they escalate, deter further aggression, or in some cases, defeat an adversary before it can solidify its gains.** Air mobility forces provide joint force commanders (JFCs) with the responsive global reach necessary to achieve US national objectives.

Rapid global mobility, a unique US Air Force core competency, is key to maintaining global presence and a rapid response capability. The synergistic combination of airlift, air refueling, and air mobility support assets represents one of the greatest characteristics differentiating the US Air Force from the air arms of other Services and the capabilities of other nations' air forces. *Rapid global mobility is the backbone for sustained combat operations.* It enables and enhances the rapid application of combat power and plays a crucial role in achieving the US Air Force's core competency of agile combat support.

## THE AIR MOBILITY TRIAD

Air mobility is a system of systems that combines airlift, air refueling, and air mobility support assets, processes, and procedures into an integrated whole. This system is best depicted as a triad (Figure 1.1). Maximum effectiveness and efficiency are achieved through sound integration of all three of these components. Air mobility support provides the foundation of this triad. Airlift and air refueling can operate independently of one another, but neither can operate without air mobility support.

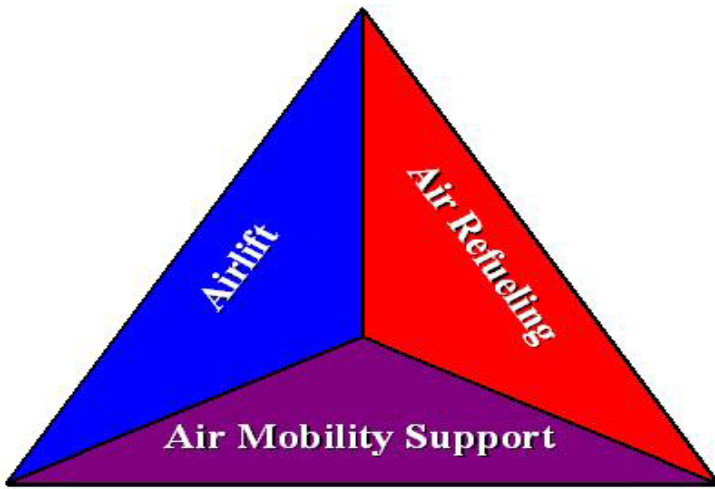


Figure 1.1. The Air Mobility Triad

## THE MOBILITY AIR FORCES (MAF)

**The air mobility triad depends on the combined efforts of active duty forces, Air National Guard (ANG) forces, Air Force Reserve (AFR) forces, government civilians, and civil air transportation partners.** Collectively, they constitute the MAF and are capable of functioning across the full spectrum of operations from supporting humanitarian and disaster relief to supporting conventional, and if necessary, nuclear war.

## **AIR MOBILITY FUNCTIONS AND ASSOCIATED MISSIONS**

Maintaining the capability to operate across the spectrum of military operations demands a MAF qualified to perform a variety of functions and missions. It is the MAF's mission to deploy and employ forces, sustain them for as long as necessary, evacuate the sick and wounded, and redeploy forces when they are no longer needed.

## **AIR MOBILITY AND AIR EXPEDITIONARY FORCES (AEF)**

The US Air Force provides the nation the ability to rapidly project forces anywhere in the world through AEFs. AEFs are tailorable force packages that integrate with air mobility forces to accomplish the commander's objectives. AEFs can be lethal or nonlethal in nature, thereby providing the National Command Authorities (NCA) with a full range of force options. In some cases, an AEF may be comprised principally of MAF assets when the operational focus is nonlethal in nature and its success hinges directly on support provided by airlift and air refueling assets. Regardless of the AEF's composition, however, air mobility forces provide an essential capability to project US influence anywhere in the world.

## **SUMMARY**

Whether delivering forces and equipment in the midst of natural disasters, deploying combat forces as a deterrent to aggression, or supporting combat forces in wartime, air mobility is a key capability in our military arsenal. Yet, air mobility is more than moving forces through the air, refueling airborne aircraft, or providing necessary en route support. It also includes nuclear operations support, global movement of injured and wounded personnel, combat delivery of troops and equipment, and the execution of covert or clandestine operations.

To perform these missions efficiently and effectively, the MAF must operate as an integral system. The MAF system includes airlift, air refueling, and air mobility support assets, processes, and procedures employed by active duty airmen, Guardsmen, Reservists, government civilians, and civil aviation partners. The fundamental strength of the MAF lies in the synergistic application of the speed, range, and flexibility inherent in all forms of aerospace power. Collectively, the MAF represents a capability unmatched anywhere in the world.



## CHAPTER TWO

# AIR MOBILITY, AN INTEGRAL PART OF AEROSPACE POWER

*Let me put it this way: no tankers, no airlift, no DESERT STORM.*

**General Merrill A. McPeak**  
**former Chief of Staff of the Air Force**

## GENERAL

**Air mobility, as a form of aerospace power, is subject to the fundamental tenets guiding the employment of aerospace power.** *Air mobility's strength lies in its ability to exploit and enhance the speed, range, and flexibility inherent in aerospace power.* These tenets complement the broad-based principles of war by providing specific considerations for *aerospace power*. Likewise, air mobility is linked to each US Air Force core competency. While core competencies are not doctrine, they are basic statements regarding the Air Force's warfighting ability. Together, the basic tenets and core competencies help translate doctrinal beliefs into successful operational concepts.

## AIR MOBILITY AND TENETS OF AEROSPACE POWER

### Centralized Control and Decentralized Execution

**Centralized control allows commanders to focus on those priorities that lead to victory while decentralized execution fosters initiative, situational responsiveness, and tactical flexibility.** *Like all other forms of aerospace power, centralized control and decentralized execution of air mobility operations are essential to mission success.*

Although it is not necessary for a single global organization to centrally control all air mobility forces, all commanders should envision air mobility as a global system capable of simultaneously performing intertheater (from one theater to another) and intratheater (within a single theater) missions. Separate but integrated command structures exercise centralized control over CONUS-assigned and theater-assigned/attached

air mobility forces. This arrangement ensures a proper focus for global and regional air mobility.

The MAF satisfies mobility requirements through common procedures that bridge the functional command structures of theater and CONUS-based forces. Effective support for the geographic commander in chief's (CINC) mobility requirements demands the theater and CONUS-based forces form a global partnership. This partnership must operate as an integrated force with common planning, tasking, scheduling, and command and control (C2) systems. A critical element of this partnership is linking centralized control agencies such as the Air Mobility Command's (AMC) Tanker/Airlift Control Center (TACC) for CONUS-based forces with the Air Mobility Operations Control Center (AMOCC) for theater forces. These MAF partners exercise centralized control to ensure both commanders are supported with responsive, capable, and seamless air mobility.

Air mobility commanders practice decentralized execution by delegating execution authority to subordinate commanders. A high degree of tasking and execution control is centralized above the wing level, with an appropriately experienced air mobility commander to direct forces and respond as a system to mobility requirements. However, tactical commanders at the wing, group, squadron, mission, and aircraft levels are vested with the appropriate authority necessary for an effective span of control while fostering initiative, situational responsiveness, and tactical flexibility.

### **Flexibility and Versatility**

**Air mobility enables commanders to simultaneously exploit mass, maneuver, and surprise (flexibility) and operate at the strategic, operational, and/or tactical levels of war (versatility).** *Air mobility allows commanders to quickly concentrate and reposition forces wherever and whenever needed.* The principles of war regarding mass and economy of force refer to the concentration of overwhelming power at the right time and the right place. Air mobility's *flexibility* and *versatility* provide commanders the means to *rapidly concentrate forces* anywhere in the world.

### **Synergistic Effects**

**US Air Force commanders must balance the air mobility flow within and between theaters to produce synergistic results.** Air mobility forces typically conduct both intratheater and intertheater operations supporting a single theater commander. Ideally, these interdepen-





**Airlift delivers where and when needed.**

dent operations are closely integrated. Nonetheless, there is a natural seam inside the theater where these two movements join. *Clearly defined command relationships, standardized operating procedures, and coordinated mission planning and execution processes bridge this natural seam and significantly enhance air mobility support of CINC/JFC operations.*

### **Priority**

*Air mobility forces are limited and thus must be applied where they can make the greatest contribution to the most critical requirements.* By releasing US mobility assets to the theaters for theater taskings, the Air Force enhances theater operations at the possible expense of global power projection or support to another geographic CINC. *Consequently, the NCA, with the advice of the Chairman of the Joint Chiefs of Staff (CJCS), make allocation decisions designating percentages of air mobility capabilities made available to theater commanders. NCA involvement ensures global air mobility forces are employed against the most critical national strategic objectives. Likewise, within a theater or joint operations area (JOA), the CINC/JFC must prioritize his requirements to ensure limited air mobility assets are applied in a manner that effectively fulfills his time-phased force deployment concept. Only a disciplined system of prioritization enables commanders at all levels to ensure the most urgent requirements are serviced by scarce air mobility assets.*

## AIR MOBILITY AND AIR FORCE CORE COMPETENCIES

*Go, sir, gallop, and don't forget that the world was made in six days. You can ask me for anything you like, except time.*

**Napolean Bonaparte, 1803,  
speaking to an aide.**

### Rapid Global Mobility

**Air mobility's speed and range transform global mobility into rapid global mobility. Rapid global mobility provides the United States with unequaled reach underpinning our nation's role as a global power.** *The ability to move rapidly to any spot on the globe ensures that tomorrow, just as today, the nation can respond quickly and decisively to unexpected challenges to its interests—air mobility makes this possible.* Air mobility can build an air bridge for joint forces, enable multinational peace efforts, speed tailored support to forces already on the scene, or directly apply combat power. The multifaceted capabilities provided through *Rapid Global Mobility* are essential to fulfilling operational requirements and securing national global interests.

### Agile Combat Support

**A US Air Force poised to respond within hours to global taskings must be able to support the deployed force.** Agile combat support focuses on reducing the footprint of forward deployed support elements through improvements in responsiveness, agility, deployability, and sustainability. *The air mobility system possesses the information and transportation technologies necessary for rapid, responsive, and integrated combat support to the warfighter.* Air mobility's speed and range coupled with accurate in-transit visibility over cargo and personnel enable commanders to shift from a *just-in-case* logistics posture to a *time-definite* posture, thereby reducing the forward deployed logistics footprint.

### Information Superiority

**The ability to collect, control, exploit, and defend information, while denying an adversary the ability to do the same, enhances air mobility's utility as a form of air power.** *Information technologies that enable precise global engagement are also helping to fuse information and*

*transportation technologies, providing responsive mobility support to the warfighter.* Air mobility's information system architecture constitutes an integrated, worldwide command and control capability providing a stream of timely, up-to-date information. This information is vital when air mobility forces must be re-directed to support developing crises or unexpected higher priority requirements. While the information infrastructure that supports the air mobility system is indeed capable, air mobility's heavy dependence on information systems also creates a significant vulnerability. *Therefore, protection of information systems through physical security measures and implementation of processes and procedures that bolster the overall level of information security are crucial to the success of air mobility operations.*

### **Precision Engagement**

**Precision engagement is the ability to command, control, and employ forces to cause discriminate and discrete effects.** *In addition to precision munitions such as laser-guided bombs, precision engagement includes precise delivery of forces and materiel to locations around the world.* Whether delivering humanitarian relief supplies, airdropping ground combat forces, or air refueling over the mid-Atlantic, air mobility forces provide precise delivery options to the warfighter. Precision engagement enables our forces

*Core competencies are at the heart of the Air Force's strategic perspective and thereby at the heart of the Service's contribution to our nation's total military capabilities. They are not doctrine per se, but are enablers of our doctrine. They are the basic areas of expertise that the Air Force brings to any activity across the range of military operations, whether as a single Service or in conjunction with the core competencies of other Services in joint operations. A particular core competency is not necessarily unique to the Air Force, but for our Air Force they are not optional. What distinguishes the Air Force core competencies from the core competencies of other Services are the speed and the global nature of its reach and perspective. The US Air Force's fundamental service to the nation is its ability to develop, train, sustain, and integrate the elements of air and space power to execute its core competencies across the spectrum of peace and war.*

**AFDD 1, Air Force Basic  
Doctrine**

## CENTRAZBAT 97

In September 1997, over 500 troops from the 82<sup>nd</sup> Airborne Division, Ft Bragg, NC participated with soldiers from the newly formed Central Asian Battalion in Uzbekistan. Made up of soldiers from Kazakhstan, Uzbekistan, and Kyrgyzstan, this battalion was created in 1996 to increase regional security by focusing primarily on peacekeeping and humanitarian assistance operations. This combined exercise, referred to as CENTRAZBAT 97, was designed to enhance regional cooperation and provide interoperability training between NATO and these Partnership for Peace nations.



The early success of CENTRAZBAT 97 was tied to an ambitious plan that involved airdropping 82<sup>nd</sup> Airborne Division troops and six vehicles on a drop zone 8000 nautical miles away in Kazakhstan. Transported by 8 C-17 aircraft, this operation covered more distance than any airborne operation in history. It would not have been possible without extensive air refueling support which consisted of 11 KC-135s and 9 KC-10 aircraft, most of which were prepositioned to Moron, Spain. Eight thousand miles and 20 hours later, the personnel and equipment were delivered on target and within one second of the planned time over target.

CENTRAZBAT 97 showcased the MAF's ability to apply combat power precisely where it is needed - to achieve *precision engagement*. Akin to placing a precision guided bomb at exactly the intended point of impact, the MAF can maneuver personnel and/or equipment at a time and to a place necessary to achieve the desired effect. Whether lethal or nonlethal, no other nation can match the capability of US air mobility forces to precisely apply airpower in a manner that so effectively achieves an array of warfighting objectives.

not only to win wars but also drive a crisis to a peaceful and lasting resolution.

### Air and Space Superiority

**Air and space superiority provides freedom from attack as well as freedom to maneuver and freedom to attack.** *Air mobility forces help combat air forces achieve air superiority.* Air refueling of combat air

forces provides a significant contribution towards achieving air superiority. Air refueling permits combat aircraft to reduce their departure fuel weights in exchange for maximum lethal payloads, remain airborne for longer periods of time, and operate at greater ranges. In many situations, air refueling allows high value airborne assets (i.e., combat support aircraft such as the joint surveillance, target attack radar system (JSTARS), the airborne warning and control system (AWACS), RIVET JOINT, etc.) to be positioned beyond enemy threat range, thus enhancing force protection. Air refueling is a force multiplier expanding the reach, power, and security of air superiority forces.

## **Global Attack**

**All military services provide strike capabilities, but only the Air Force can attack rapidly, persistently, within a wide range of responses, anywhere on the globe at any time.** *Forces based in the CO-NUS have become the primary means for crisis response and power projection.* MAF air refueling assets enable the rapid deployment of fighters, bombers, and combat support aircraft. This capability decreases reliance on staging bases, host nation support, and other diplomatic considerations, while accelerating the deployment and employment of combat forces to and within a theater of operations.

## **SUMMARY**

**Aerospace power is intrinsically different from either land or sea power, and its employment must be guided by axioms different than those of surface forces.** While the principles of war provide general guidance on the application of aerospace forces, the *tenets of airpower* complement the principles of war and, furthermore, provide more specific considerations for the use of aerospace power. *The effective use of air mobility, as a form of aerospace power, must also be guided by these same tenets. In particular, the tenets of centralized control and decentralized execution, flexibility and versatility, synergy, and priority are especially relevant for air mobility forces. Finally, it is important to remember that air mobility forces contribute directly to all the Air Force core competencies due to their speed and the global nature of the reach and perspective they provide.*



## CHAPTER THREE

# COMMAND AND CONTROL

*Air power is indivisible. If you split it up into compartments, you merely pull it to pieces and destroy its greatest asset - its flexibility.*

**Field Marshal Bernard Montgomery**

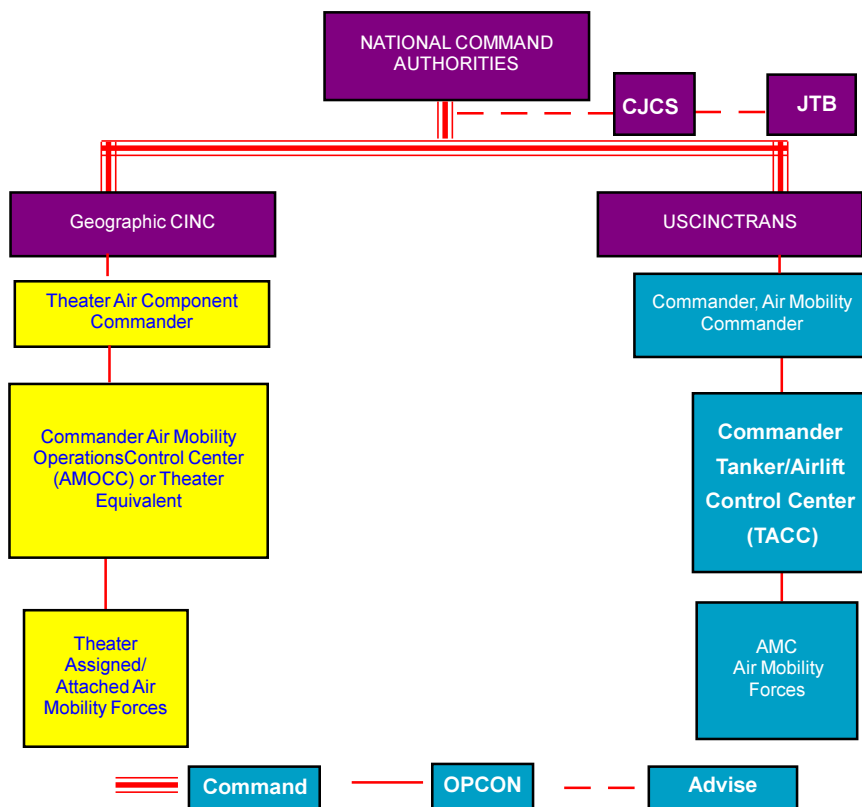
## NATIONAL DIRECTION

The NCA allocate air mobility forces by prioritizing air mobility efforts to support various theaters or major operations. The NCA, with the advice of the CJCS and the Joint Transportation Board (JTB), provide this direction.

The JTB may be convened by the CJCS during wartime or contingencies to ensure common-user transportation resources assigned or available to the Department of Defense (DOD) are allocated to achieve the maximum benefit in meeting DOD objectives. When convened, the JTB acts for the CJCS by communicating NCA guidance to the United States Transportation Command (USTRANSCOM) with respect to the establishment of priorities for the use of airlift, sealift, and surface transportation. As a result, USTRANSCOM reacts accordingly to support the appropriate CINCs. (See Joint Pub 4-01, Appendix B, for details of JTB mission, functions and procedures.)

## ASSIGNMENT OF AIR MOBILITY FORCES

**The peacetime assignment of common-user air mobility assets** (as articulated in the Secretary of Defense's (SECDEF) "Forces for Unified Commands" Memorandum) **is divided between the Commander in Chief, United States Transportation Command (USCINCTrans) and the geographic Commanders-in-Chief.** Figure 3.1 shows the basic distribution of air mobility forces and associated command and control lines.



**Figure 3.1. Basic Distribution of Air Mobility Forces**

## INTERTHEATER AIR MOBILITY

Intertheater air mobility involves **forces operating between the CONUS and a theater or between theaters**. These operations require the close coordination between AMC and theater air mobility components.

### United States Transportation Command (USTRANSCOM)

**USTRANSCOM provides the air, land, and sea transportation for the DOD in times of peace or war.** As the commander of USTRANSCOM, USCINTRANS serves as *the single manager of the Defense Transportation System* (DTS). The DTS includes USTRANSCOM's three Service components: Military Sealift Command (MSC), Military Traffic Management Command (MTMC), and Air Mobility Command (AMC). These components provide unique mobility capabilities (sea, land, and air) allowing USTRANSCOM to support the full range of transportation requirements.





**As the single manager of the DTS, USCINTRANS provides air, land, and sea transportation for the Department of Defense.**

### **Air Mobility Command (AMC)**

**AMC is the Air Force major command with the primary responsibility for providing airlift, air refueling, air mobility support, special air mission, and aeromedical evacuation forces.** AMC organizes, trains, equips, and provides its assigned air mobility forces to meet worldwide mobility requirements. These forces are made available to fulfill intertheater and intratheater air mobility requirements. AMC plans, coordinates, and manages the CRAF program which provides a pool of civil airlift capability made available to the DOD in times of crises. When the CRAF is activated, AMC assumes mission control of these assets through the AMC TACC. The individual commercial carriers retain operational control.

AMC is **the designated lead agent for Air Force air mobility issues.** In this capacity, AMC is responsible for developing weapon system standards and integrated command and control processes for the MAF. Global standardization of air mobility processes is crucial to ensure mobility forces are effectively and efficiently combined from any source. AMC's global presence of fixed operating sites, deployable support, liaison teams, and worldwide forces operating continuously are the mainstay of Air Force global mobility. AMC works closely with Air Force components of each combatant command to establish appropriate standards that enable a smooth transition to contingency operations.

## AMC Tanker/Airlift Control Center (TACC)

**The AMC TACC is the tasking and execution agency for AMC missions and requirements.** *It provides centralized control of all AMC air mobility operations around the globe and acts as the single point of contact for AMC operations.* A critical enabling feature of the TACC is its robust command and control system, which allows the TACC to schedule, task, manage, coordinate, control, and execute air mobility missions globally. This system includes fixed and deployable en route mission support forces. Through the Global Transportation Network (GTN), the TACC is able to track the status and location of personnel and cargo, otherwise referred to as in-transit visibility (ITV).



**The TACC provides centralized control for all AMC air mobility operations.**

## INTRATHEATER AIR MOBILITY

**Inratheater air mobility operations are those airlift, air refueling, and air mobility support operations conducted within a given theater.** Inratheater air mobility forces are organized to meet the needs of the theater CINC or his designated JFC. The air mobility forces assigned or attached to the joint task force (JTF) may be drawn from forces currently assigned to the tasked theater CINC or from forces assigned to supporting CINCs, which become attached to the JTF by the NCA.

### Theater Command and Control Organization

**A theater CINC exercises combatant command (COCOM) authority over theater-assigned air mobility forces. Operational control (OPCON) or tactical control (TACON) over assigned and attached air mobility forces is normally delegated to the Commander, Air Force Forces (COMAFFOR), in the theater.** For example, the Commander US Air Forces Europe (COMUSAFE) is the COMAFFOR for US European Command (USEUCOM). The COMAFFOR may further delegate authority for air mobility operations. COMUSAFE delegates OPCON of

air mobility operations to the commander of the USAFE AMOCC. *To assure seamless operations, the standing peacetime command and control structure in the theater interfaces with the global network managed by AMC.*

## **Air Mobility Operations Control Center (AMOCC)**

**The AMOCC (if established) is the theater's single command and control layer for intratheater air mobility operations external to a JTF.** *It provides centralized planning, tasking, scheduling, coordination, and C2 for assigned and attached intratheater airlift and air refueling forces operating in the geographic CINC's AOR.* The AMOCC integrates intertheater and intratheater air mobility operations to efficiently and effectively accomplish the theater air mobility mission and enhance the goal of seamless global mobility. To further these objectives, it validates user requirements, determines force allocations, and provides deployable C2 teams.

## **THE TRANSITION TO CONTINGENCY OPERATIONS**

The transition from peacetime to contingency operations is a significant challenge to commanders at all levels. Rapidly developing crises leave little time for developing procedures, plans, and concepts describing the full integration of air mobility forces assigned, attached, deployed and transiting in theater.

Supporting and supported commands must develop plans for integrated air mobility operations before contingency operations begin. Ideally, these plans will produce a single concept of operations (CONOPs), which can be modified to accommodate the specific circumstances of the operation at hand. This effort requires a clear understanding of potential taskings, customer requirements, and capabilities/limitations of the air mobility system.

The COMAFFOR can ensure effective command and control over air mobility operations during a contingency by:

- ✦ Identifying the theater's present command and control capabilities.
- ✦ Identifying the theater's surge capacity without command and control augmentation.

- ✦ Identifying when the theater will need augmentation.
- ✦ Precoordinating command and control augmentation with force providers.
- ✦ Incorporating standardized MAF command and control procedures.

The key to simplifying the transition to contingency operations is developing and maintaining a seamless air mobility system during peacetime and making it part of the fabric of day-to-day operations both within the theater and between the theater and other MAF organizations. Exercising the seamless system in peacetime so that all personnel are familiar with its characteristics and procedures will simplify the integration of air mobility forces throughout the full range of military operations. This, in turn, will help establish a comprehensive and responsive command and control structure that is effective in peace and war.

## **JOINING INTERTHEATER AND INTRATHEATER AIR MOBILITY**

Air mobility is a global system consisting of many diverse yet interlocking components that must integrate smoothly for the whole to function effectively. Regardless of the type of operation being conducted or customer being supported, air mobility functions most effectively and efficiently when it is employed as a homogenous network, with forces trained and equipped to common standards.

One of the MAF's most critical challenges is meshing theater-assigned/attached mobility forces with AMC's mobility forces. To complicate matters, every theater has unique mission requirements, capabilities, and experience levels. AMC, as the lead command for air mobility, develops and maintains (in coordination with the theater air components) clear, detailed, and accountable standards to ensure efficient employment and interoperability of forces. Proper employment of air mobility forces is dependent upon establishing a standardized set of tactics, techniques, and procedures that must be followed for the greatest effect in a resource-constrained environment.

## CONTINGENCY OPERATIONS

Aerospace operations are led by Air Force commanders who command, direct and conduct operations through aerospace operations centers (AOCs). The AOC will be the senior operations center and focal point for the command and control of air and space forces in Air Force-only operations. The fundamental principle of this system is centralized planning and control by the COMAFFOR through the AOC, with decentralized execution by subordinate organizations and elements. [Note: When the COMAFFOR is also designated as the joint force air component commander (JFACC), the AOC is called the joint AOC (JAOC)].

The AMD may be one of the core divisions within the AOC. The AMD, under the direction of the Director of Mobility Forces (DIRMOBFOR), plans, coordinates, tasks, and executes air mobility missions operating in a designated area of responsibility (AOR) or joint operating area (JOA). In operations primarily involving air mobility, there may be insufficient combat activity to warrant the formation of a full AOC. In this case, the JFACC could be the senior air mobility commander and could be dual-hatted as the DIRMOBFOR. In these circumstances, the AOC would consist primarily of an AMD and sufficient other expertise to control all air mobility operations within the JOA/AOR, to produce an air tasking order (ATO), and manage the required combat sorties. In every case, however, there

AOC Director			DIRMOBFOR
Strategy Division	Combat Plans Division	Combat Ops Division	Air Mobility Division
Strategy Plans Team	Master Air Attack Team	Offensive Operations Team	Air Mobility Control Team
Operational Assessment Team	ATO/ACO Production Team	Defensive Operations Team	Airlift Control Team
			Air Refueling Control Team
			Air Mobility Element

Figure 3.2. Notional AOC Structure

should only be one air commander with one AOC within the JOA/AOR. Figure 3.2 depicts a notional AOC structure.

### **Commander, Air Force Forces (COMAFFOR)**

**Unity of command, one of the most fundamental principles of war, is maintained by the COMAFFOR.** The COMAFFOR is a US Air Force officer designated as commander of the Air Force component command assigned to a JFC at the unified, sub-unified, or joint task force (JTF) level. *The COMAFFOR normally exercises OPCON over all US Air Force forces provided to a joint force.* When designated as the JFACC, the COMAFFOR typically maintains OPCON of assigned and attached US Air Force forces and normally receives TACON of air forces from other components as directed by the JFC. *Some US Air Force forces and long-range airlift assets, must maintain a global orientation and, therefore, do not normally transfer OPCON to the theaters.* Where neither OPCON nor TACON of Air Force forces is appropriate, the JFC, and in turn, the COMAFFOR/JFACC, will be supported as specified by the supported and supporting command relationships approved by the NCA. Once the NCA establish broad CINC-to-CINC supported/supporting command relationships (for example, the Commander in Chief, US European Command (USCINCEUR) designated supported CINC and USCINCTRANS designated supporting CINC) for a particular operation, the corresponding Air Force components (in this example, USAFE and AMC) should work directly with each other to further detail the associated support for the COMAFFOR.

In some circumstances, a limited number of intertheater air mobility aircraft may be transferred, or made available for tasking on a sortie-by-sortie basis, to the COMAFFOR/JFACC for the JFC. In these circumstances, TACON will normally be delegated to the JFC, exercised by the COMAFFOR/JFACC, and executed through the DIRMOBFOR.

### **Director of Mobility Forces (DIRMOBFOR)**

**The DIRMOBFOR is the COMAFFOR's or JFACC's designated coordinating authority for air mobility with all commands and agencies both internal and external to a joint force.** The DIRMOBFOR is responsible for integrating the total air mobility effort for the JFACC. *The DIRMOBFOR provides direction to the AMD* and will normally be a senior officer familiar with the AOR. When intertheater air mobility forces are employed in support of a JFC, the DIRMOBFOR should have experience

in intertheater air mobility operations. The DIRMOBFOR may be sourced by the theater Air Force component commander or nominated by the AMC commander. To ensure close coordination with the overall theater air effort, the DIRMOBFOR should be collocated with the AOC and COMAFFOR/JFACC. *The COMAFFOR exercises complete ADCON over the DIRMOBFOR, however, the DIRMOBFOR reports operationally to the JFACC.* Specific authorities and responsibilities of the DIRMOBFOR include:

- ✦ Direct the integration of intertheater air mobility support provided by USTRANSCOM-assigned mobility forces.
- ✦ Coordinate the tasking of USTRANSCOM intertheater air mobility forces (air and ground) attached (via TACON) to the JFC.
- ✦ Direct the tasking of intratheater air mobility forces (air and ground) attached (either via OPCON or TACON) to the JFC.
- ✦ Coordinate with the AOC director to ensure all air mobility operations supporting the JFC are fully integrated into the air and space assessment, planning, and execution process and deconflicted with all other air operations.
- ✦ Coordinate with AMC TACC, through the air mobility element (AME), all intertheater air mobility missions to ensure the most effective use of these resources in accomplishing the JFC, theater, and USTRANSCOM missions.

### **Air Mobility Division (AMD)**

**The AMD plans, coordinates, tasks, and executes the air mobility mission.** *The AMD is located in the AOC and is directed by the DIRMOBFOR. The AOC director ensures the AMD works as an effective division of the AOC in the air and space planning and execution process.* The AMD coordinates with the JFC's movement requirements and control authority, the theater AMOCC, if established, and the AMC TACC as required to derive apportionment guidance, compute allocation, and collect requirements. The DIRMOBFOR, in conjunction with the AOC director and the JFACC, may adjust the AMD's organizational structure ensuring all the processes of the AMD's core teams, the air mobility control team (AMCT), air refueling control team (ARCT), airlift control team (ALCT), and air mobility element (AME), interface more effectively with the other air and space planning and execution divisions found in the

AOC and to meet the JFACC/COMAFFOR's requirements. As directed by the DIRMOBFOR, the AMD will task attached intratheater air mobility forces through wing and unit command posts when those forces operate from permanent home bases or through the wing operations centers if those forces are deployed. *Under the direction of the DIRMOBFOR, the Air Mobility Division normally has the following responsibilities:*

- ✦ Integrate and direct the execution of intratheater and USTRANSCOM-assigned mobility forces operating in the AOR/JOA and in support of the JFC's requirements/objectives.
- ✦ Maintain the flow of intratheater and USTRANSCOM-assigned air mobility assets in support of JFC objectives.
- ✦ Coordinate air mobility support for mobility requirements identified and validated by the JFC requirements and movement authority as appropriate.
- ✦ Coordinate air refueling planning, tasking, and scheduling to support intertheater and intratheater air operations.
- ✦ Participate in the air and space assessment, planning, and execution process and coordinate with the AOC director to ensure the air mobility mission is incorporated in the ATO.
- ✦ Identify intelligence, surveillance, and reconnaissance (ISR) requirements in support of the air mobility mission.
- ✦ Ensure intratheater air mobility missions are visible in the AMC standard command and control system and reflected in the ATO/ACO.

### **Air Mobility Control Team (AMCT)**

**The AMCT serves as the DIRMOBFOR's centralized source for air mobility command, control, and communications during mission execution.** The DIRMOBFOR uses the AMCT to direct or redirect, as required, air mobility forces in concert with other air and space forces to respond to requirement changes, higher priorities, or immediate execution limitations. The AMCT deconflicts all air mobility operations into, out of, and within the JOA. The AMCT maintains the execution process and communications connectivity for tasking, coordinating, and flight





**The C-130 Hercules is usually the workhorse for intratheater airlift operations.**

following of air mobility missions in conjunction with the AOC Combat Operations Division, subordinate air mobility units, and mission forces.

### **Airlift Control Team (ALCT)**

**The ALCT is the source of theater airlift expertise within the Air Mobility Division.** The ALCT brings together theater airlift functional expertise from theater organizations to plan, coordinate, manage, and execute theater airlift operations in the AOR/JOA in support of JFACC objectives. AMC may augment the ALCT with theater airlift expertise. These two sources of airlift expertise integrate into a single ALCT within the Air Mobility Division.

### **Air Refueling Control Team (ARCT)**

**The ARCT is the source of air refueling expertise within the AMD. The ARCT will coordinate air refueling planning, tasking, and scheduling to support combat airpower or to support a strategic air bridge within the AOR/JOA in accordance with the JFACC's objectives.** ARCT members also work closely with the Strategy, Combat Plans, and Combat Operations Divisions of the AOC to ensure air refuel-



**The ARCT ensures tanker assets are best utilized to accomplish JFC objectives.**

ing assets are completely integrated into the joint air and space operations plan (JASOP) during the employment phase of an operation.

### **Air Mobility Element (AME)**

**The AME deploys to the theater as an extension of the TACC and becomes an element of the AMD.** *The AME is requested whenever a DIRMOBFOR is designated and AMC air mobility aircraft are employed in support of an operation.* The DIRMOBFOR integrates intratheater air mobility expertise with the intertheater expertise of the AME. The AME provides air mobility integration and coordination of USTRANSCOM-assigned air mobility forces. AME personnel receive direction from the DIRMOBFOR and are the theater representatives of the TACC. Direct delivery air mobility missions from the CONUS to a forward operating location are coordinated through the AMD and tasked by the TACC. The Commander, AMC TACC, maintains OPCON of direct delivery missions during execution, however, TACON may be delegated to the JFC and COMAFFOR/JFACC under special circumstances. The AME ensures the integration of intertheater air mobility missions with theater aerospace operations planning.

## **PRESENTATION AND INTEGRATION OF AIR MOBILITY FORCES**

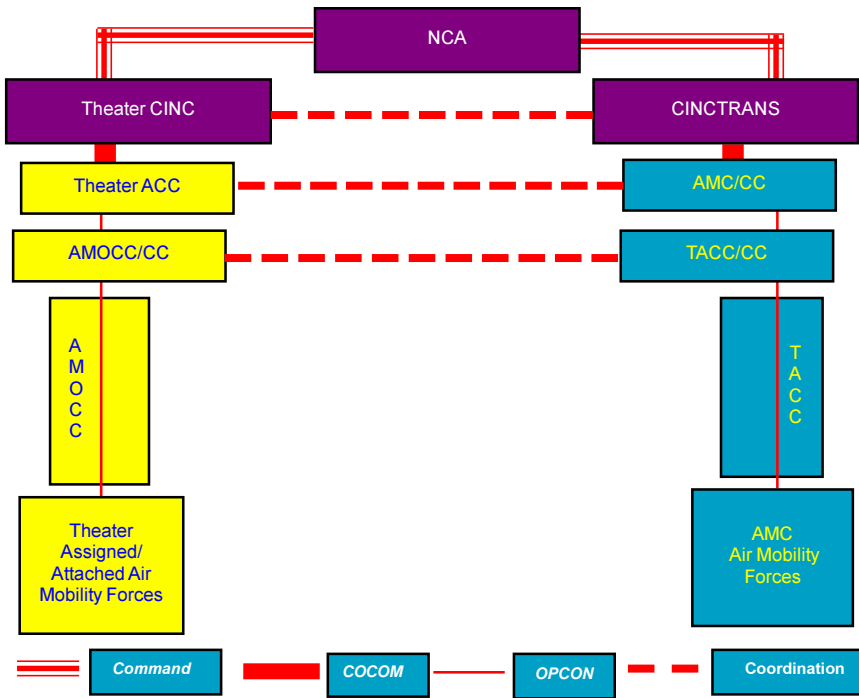
Because of the global nature of air mobility, special attention must be given to balance these resources with national requirements and priorities. At the same time, the air mobility systems performing intratheater and intertheater missions must function in close coordination with one another to provide seamless mobility to the supported combatant commander with responsive and integrated aerial movement. Command relationships must allow an interlocking arrangement to manage intratheater and intertheater air mobility operations. Normally, intratheater air mobility forces will be attached to the JFC with OPCON or TACON delegated to the COMAFFOR/JFACC.

**A JTF mission will often require air mobility augmentation.** Air mobility ground elements attached to the JTF and in the AOR/JOA normally will be TACON to the JFC, delegated to the JFACC, and exercised through the DIRMOBFOR. Again, in some circumstances, a limited number of intertheater air mobility aircraft may be transferred, or be made available for tasking, on a per-sortie basis, to the COMAFFOR/JFACC for the JFC. In such circumstances, TACON will normally be delegated to the JFC, exercised by the COMAFFOR/JFACC and executed through the DIRMOBFOR.

**Figures 3.3 through 3.6 represent the building blocks for a notional presentation of air mobility assets to the joint force.** The DIRMOBFOR must work closely with the JFACC and MAF forces to tailor this notional framework according to the specific requirements of the JFC.

*Figure 3.3 depicts the peacetime control of air mobility assets.* The theater CINC controls those forces under his combatant command by delegating OPCON to the Air Component Commander (ACC) who then exercises OPCON through the Air Mobility Operations Control Center (AMOCC). USCINCTRANS similarly exercises OPCON through the AMC Commander (AMC/CC) and the AMC TACC Commander (TACC/CC).

*Figure 3.4 depicts the integration of air mobility forces into a joint task force (JTF).* When a JTF is established, a portion of those forces permanently assigned to the geographic CINC will be allocated and attached to the joint force commander who in turn will normally delegate OPCON of these forces to the JFACC.

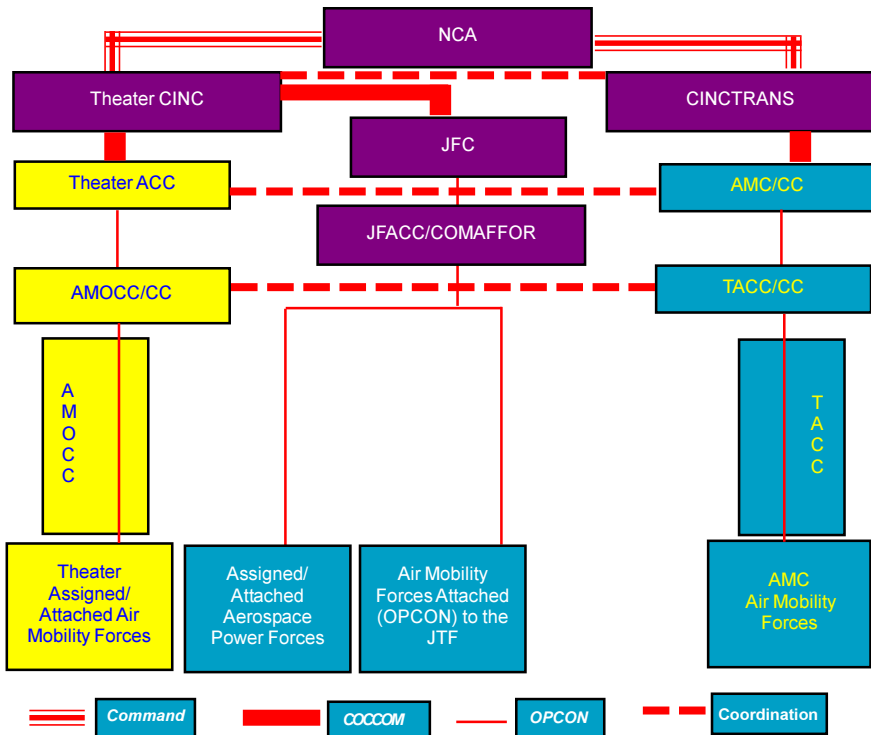


**Figure 3.3. Peacetime Control of Air Mobility Forces**

The central command and control organization for air operations within the theater is the Air Operations Center (AOC). The AMD is one of four AOC divisions as depicted in Figure 3.5. The AMD is responsible for integrating air mobility operations into the joint air and space campaign being planned, tasked, and executed by the AOC.

In accomplishing its responsibilities, the AMD is under the direction of the DIRMOBFOR. Although the DIRMOBFOR has no specific command authority, he is responsible to the JFACC/COMAFFOR for all air mobility operations into, out of, and within the theater. If the JFC requires theater airlift beyond that which has already been assigned/attached to the JTF, he may request additional augmentation. The CINC providing this augmentation retains OPCON but may delegate TACON to the JFC, as necessary. In some circumstances, the JFC may be delegated TACON over USTRANSCOM-assigned air mobility assets as depicted in figure 3.6.

As shown in Figure 3.6, the AMD is an integral part of the AOC. While the AMD takes direction from the DIRMOBFOR, the AOC director (who has overall responsibility for AOC operations) also provides guidance to the AMD. Each directs two independent processes and the AMD participates in both. The

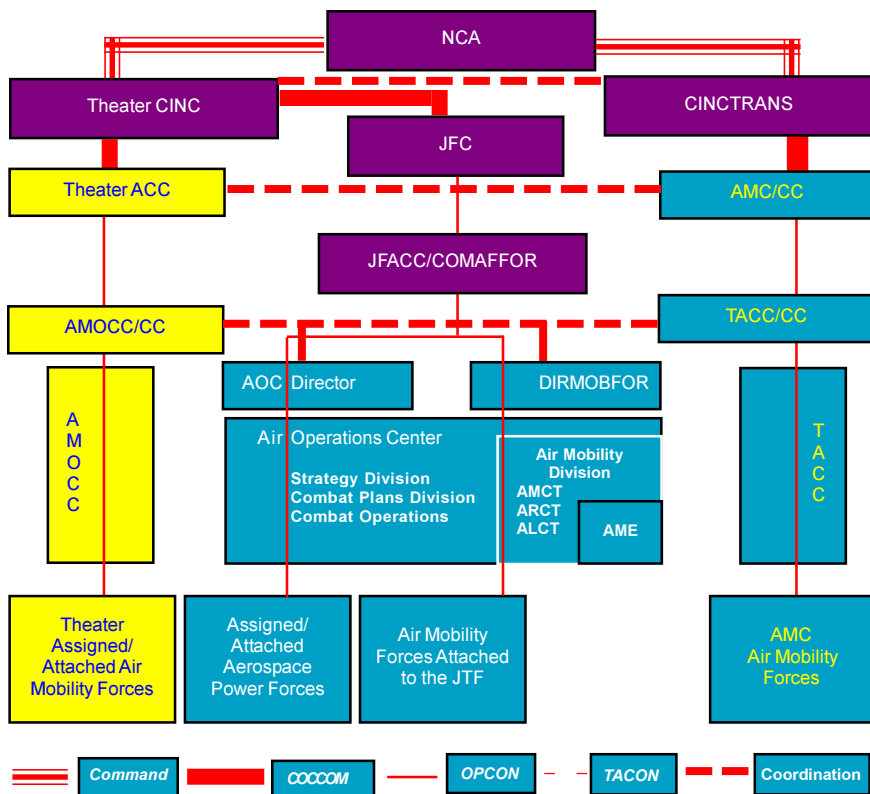


**Figure 3.4. Command Relationships for Air Mobility Forces Attached to a Joint Task Force**

AOC director is charged with the effectiveness of joint air and space operations and focuses on planning, coordinating, allocating, tasking, executing, and assessing airpower operations in the AOR/JOA based on JFACC guidance and DIRMOBFOR coordination. It is the AOC director's responsibility to ensure AOC functions necessary to complete the air and space planning and execution process are executed in a timely, efficient manner.

**The Air Mobility Division, like the other divisions of the AOC, must support and respond to the AOC director in the air and space planning and execution process.** This process revolves around a continually flowing strategy, planning, ATO production, ATO execution, and assessment and analysis cycle. Everyone in the AOC, including air mobility expertise within the AMD, supports the AOC director in this process and reacts to his orchestration of the battle rhythm.

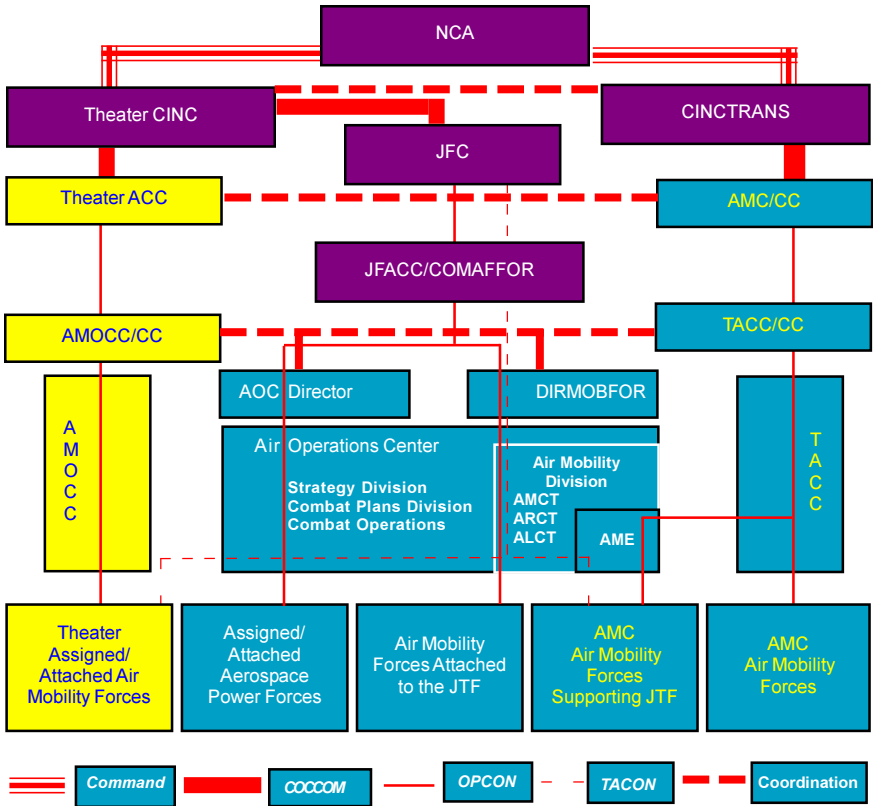
**The Air Mobility Division also responds to the joint movement process that resides outside, but runs parallel with, the air and**



**Figure 3.5. The AOC and Command Relationships for Air Mobility Forces**

**space execution process.** The Joint Movement Center (JMC) translates the JFC's priorities into validated airlift taskings. These taskings are communicated through the DIRMBOFOR to the AMD for planning, coordination, and integration with theater air operations and subsequent execution. *The DIRMBOFOR, as the COMAFFOR/JFACC's designated coordinating authority for air mobility with all commands/agencies both internal and external to the JTF, coordinates with the JMC to direct the AMD's participation in this process.*

**The AOC director and the DIRMBOFOR both report directly to the JFACC.** They provide the crucial ingredients in combining the processes they direct; the air and space execution process and the joint air movement process, respectively. *Together, they must coordinate to ensure all air mobility operations supporting the JFC are fully integrated into the air*



**Figure 3.6. Tactical Control of Intertheater and Intratheater Air Mobility Forces Supporting JTF Operations**

*and space assessment, planning, and execution process and are deconflicted with all other air operations.*

## SUMMARY

Air mobility forces maintain a robust command and control system capable of functioning throughout the spectrum of conflict. The peace-time command and control architecture is readily adaptable to theater-specific needs during times of crisis. During a contingency, additional MAF assets, to include command and control elements, can be attached or assigned to augment the existing air mobility forces within the theater. The DIRMBOFOR, who operationally reports to the JFACC, helps shape the deployed command and control structure necessary to ensure a smooth mobility flow into, out of, and within the AOR.





## CHAPTER FOUR

### AIRLIFT

*I have traveled around the world and talked to people in different countries. I can tell you that when that big “T” tail aircraft lands, with the American flag on the tail, they not only represent America – they are America.*

**General Ronald R. Fogleman, CSAF**

#### GENERAL

**Airlift is the ability to transport personnel and equipment through the air.** As a direct instrument of national policy and an essential warfighting tool, airlift offers its customers a high degree of speed, range, and flexibility. Airlift allows commanders to respond and operate in a wide variety of circumstances and time frames that would be impracticable through other modes of transportation.

**The demands placed on the nation’s airlift forces are numerous, global, and often unpredictable.** *To help ensure efficient use of all airlift assets, validated customer requests for airlift are supported in accordance with a Joint Chiefs of Staff (JCS) priority system.* Prioritized movement requirements along with a common standard of operation allow airlift forces, regardless of the aircraft type or assigned location, to perform in a comparable and complementary fashion.

Normally, movement requirements are fulfilled through regularly scheduled missions over fixed route structures with personnel/cargo capacity available to all customers. However, when a contingency occurs, airlift forces typically will surge to meet the supported CINC’s validated and prioritized movement requirements. While airlift plays a vital role in all phases of an operation, the airlift system is normally most heavily tasked during the deployment and redeployment phases. Time is most critical during the deployment phase. It is essential that accurate and timely statements of these requirements be reflected in the CINC’s approved operation order (OPORD) and its associated time-phased force and deployment data (TPFDD). Successful execution of the TPFDD may de-

pend on developing an air bridge, which provides a long-range, continuous air line of communication into the AOR.

**Airlift has a direct impact on the employment and sustainment phases.** During the employment phase, it provides commanders the ability to rapidly reposition forces anywhere within the AOR/JOA, giving them a greater range of force options. Commanders can directly apply combat power by aerial delivery of troops and equipment against a specific objective. During the sustainment phase, airlift enables commanders to maintain and prolong operations in the theater via delivery of units, replacement supplies, equipment, and personnel.

**During military operations other than war (MOOTW), such as disaster relief or humanitarian operations, a robust airlift capability can reduce human suffering by rapidly transporting essential medical supplies, food, shelters, water, and other materiel.** Airlift—particularly in conjunction with air refueling forces—provides the US the ability to help reduce suffering during a humanitarian crisis.

## **COMPONENTS OF THE AIRLIFT FORCE**

MAF assets, including active duty, AFRC, ANG, and the CRAF, comprise the airlift system assigned to meet peacetime and wartime taskings. **The majority of the nation's total airlift capability exists outside the active duty Air Force.**

### **Active Duty Component**

CONUS-based active duty airlift forces are assigned to (and under the combatant command of) USTRANSCOM and under the operational control of USTRANSCOM's air component, AMC. Similarly, theater-based active duty airlift forces are assigned to (and under the combatant command of) their regional CINC (e.g., USCINCEUR or Commander in Chief, US Pacific Command [USCINCPAC]) and under the operational control of their regional CINC's respective air component (e.g., USAFE or Pacific Air Forces [PACAF]). These forces conduct routine airlift missions along with those missions requiring specialized training and equipment. Commanders have full access to their active duty component assets at all times and airlift forces are continuously ready for immediate worldwide taskings.

### **Air Force Reserve and Air National Guard Forces**

The Air Force Reserve Command (AFRC) and the Air National Guard (ANG) provide vital airlift capabilities to the Defense Transportation Sys-

## Operation SUPPORT HOPE in Rwanda

**S***TOP THE DYING!* This quickly became a primary US objective in the summer of 1994 when hundreds of thousands of Rwandan refugees fled to neighboring African countries to avoid becoming victims of a violent inter-tribal war. With over 100,000 dead and nearly a half-million displaced, President Clinton stated, "The flow of refugees across Rwanda's borders has now created what could be the world's worst humanitarian crisis in a generation. A disaster born of brutal violence, it is now claiming one life every minute." In response, the US launched Operation SUPPORT HOPE, a massive humanitarian relief mission to help normalize a situation in sub-Saharan Africa that was anything but normal.



Refugee camps in Goma and Bukavu swelled overnight and, while supplies of food and medicine were critically short, the lack of clean drinking water was the biggest problem. Hundreds were dying every day from cholera and dysentery, which had spread to epidemic levels from consumption of contaminated water. A C-5 loaded with a Reverse Osmosis Water Purification Unit (ROWPU) would help provide the solution. Flying 22 hours non-stop from Travis AFB to Rwanda and conducting 3 air refuelings while en route, this mission quickly provided an initial source of potable water. In a short time, more ROWPUs, water pumping equipment, and mobile fabric tanks were delivered and mortality rates decreased dramatically. By the time relief efforts ended, over 400 KC-10 and KC-135 missions were flown to refuel C-5 and C-141 aircraft which ferried 23,000 tons of equipment and supplies to the beleaguered masses.

Operation SUPPORT HOPE is a great example of air mobility being applied in a non-lethal manner. While it would be difficult to determine the actual number of lives saved, it is evident air mobility directly achieved a major US objective: *STOP THE DYING!*

tem. They are an integral part of the airlift system and conduct airlift missions in support of national taskings every day. During crises, volunteers or activated AFRC/ANG units augment the active duty airlift force, providing substantial increases in airlift capacity. AFRC/ANG personnel are experienced operators and train to the same standards as the active duty airlift force. Peacetime access to AFRC/ANG forces is provided through a system of volunteerism. In those circumstances where airlift requirements exceed airlift capability available through AFRC/ANG volunteerism, formal activation may be required.

## CRAF in Operation DESERT SHIELD and STORM

**T**he CRAF has only been activated once since its inception in 1951. During the early phases of Operation DESERT SHIELD, it became apparent that the Air Force would need additional aircraft to meet the growing airlift requirements. On 17 August 1990, General Hansford T. Johnson, Commander in Chief, United States Transportation Command, activated stage I of the CRAF guaranteeing USTRANSCOM the use of 38 additional aircraft. These assets were primarily used to “marry-up” troops with prepositioned cargo overseas. Supporting the President’s call for additional forces just prior to hostilities and to help ensure a steady stream of resupply, Secretary of Defense Richard B. Cheney, activated CRAF Stage II on 17 January 1991. The Stage II activation yielded a total of 76 passenger and 40 cargo aircraft. Collectively, the CRAF accounted for one fourth of all the passengers and cargo airlifted during the Gulf War thus proving the value of this unique civil-military partnership.



**The CRAF was responsible for delivering 90 percent of US personnel to Southwest Asia for DESERT STORM.**

### Civil Reserve Air Fleet (CRAF)

**The CRAF is a voluntary contractual program where civil carriers agree to augment military airlift during a crisis in exchange for peacetime defense business.** During peacetime, regional contingencies, and major exercises, CRAF carriers voluntarily contract to fulfill personnel and cargo movement requirements. CRAF carriers are contracted daily to fly various categories of airlift, to include regularly scheduled passenger and cargo movement known as channel missions, special assignment airlift missions (SAAMs), and charter airlift. This support is crucial to AMC’s customers, giving AMC the capacity to continue to meet routine scheduled and surge commitments simultaneously.

**Airframes pledged to the CRAF are activated in three progressive stages** with each stage providing additional airlift capacity. *These stages include, Stage I—minor regional crisis, Stage II—major regional crisis, and Stage III—national mobilization. USCINCTRANS, with approval of the Secretary of Defense, is the activation authority for each stage of the CRAF.*

The DOD tasks the minimum percentage of assets in each stage necessary to augment military airlift to meet crisis requirements. During activation, the civil carriers retain operational control of their aircraft while AMC TACC exercises mission control.

## AIRLIFT OPERATIONS

**Airlift operations are typically classified as either intertheater or intratheater airlift. Operational Support Airlift (OSA) comprises a third and special classification of airlift operations.** These operations are *defined by the nature of the mission rather than the airframe used.* Most aircraft are not exclusively assigned to one operational classification. In fact, the vast majority of the airlift force is capable of accomplishing any classification of airlift.



**Intertheater and intratheater airlift operations are not platform specific. Depending on the nature of the mission, aircraft such as the C-141, C-130, or the C-17 can perform either classification of airlift with equal effectiveness.**



Intertheater and intratheater capabilities are available to all users of Air Force airlift including sister Services, DOD agencies, military forces of allied nations, and US government as well as non-government organizations. OSA routinely fulfills sister Service and government agency requirements.

### **Intertheater Airlift**

**Intertheater airlift provides the air bridge linking a theater to other theaters and to the CONUS.** *Most of the forces responsible for executing intertheater airlift missions are under the OPCON of AMC/CC.* Due to the global ranges usually involved, intertheater airlift is normally performed by heavy, longer range, intercontinental airlift assets, but may be augmented with shorter-range aircraft.

## 1973 Arab-Israeli War (Yom Kippur War)

**D**uring the Arab-Israeli War of 1973, commonly referred to as the Yom Kippur War, the survival of Israel hung in a precarious balance. Determined to recapture territory lost to Israel in the 1967 Six-Day War, Egypt and Syria launched a surprise attack that caught Israel off guard. While both sides sustained heavy losses in the first few days of the conflict, Arab forces were quickly resupplied by the Soviet Union, which sent large quantities of munitions and equipment. Recognizing that Israel was not postured to win a war of attrition and needed immediate help to survive the Arab attack, the United States dedicated its massive airlift assets to support a monumental resupply effort code-named Operation NICKEL GRASS.



**Military Airlift Command's C-5A was the only aircraft capable of carrying outsized cargo.**

In addition to airlifting munitions and modern weapons that enabled the Israelis to fight on equal terms against Arab forces, airlift served a very important strategic purpose amidst a politically charged and extremely volatile environment. The United States demonstrated to the world a willingness to take necessary measures to support and defend its allies from nations with hostile intent.

The airlift lasted for 32 days before sufficient supplies arrived via sealift. During those 32 days, Military Airlift Command (MAC) C-5s and C-141s flew over 550 missions and delivered over 22,000 tons of precious equipment and supplies. Significant was the ability of MAC aircraft to equal the resupply efforts of the Soviets and from a substantially greater distance. Operation NICKEL GRASS demonstrated the enormous military potential of airlift to rapidly sustain forces anywhere in the world and was instrumental in turning the tide of the Yom Kippur War in favor of Israel.

From an airlift perspective, Operation NICKEL GRASS produced several important lessons. First, although the US had the largest military airlift fleet in the world, it became clear that additional intertheater airlift capability was needed. Second, the inability to obtain diplomatic clearances for desired en route basing and overflight rights highlighted the value of air refueling. At the time, only a limited number of C-5 crews were qualified in air refueling and the C-141 lacked air refueling capability altogether. Furthermore, air refueling would have increased aircraft allowable cabin loads and significantly reduced enroute times. And finally, Operation NICKEL GRASS proved the value of the C-5 as an outsized airlifter, capable of carrying the Army's largest tanks.

The attention given to remedy the airlift lessons of the Yom Kippur War is evident and clearly reflected in the composition of today's US air mobility fleet. Intertheater cargo airlift capacity is greater than ever, the vast majority of aircraft and aircrews that normally conduct intertheater airlift routinely participate in air refueling operations, and the capability to transport outsized cargo continues to increase as more C-17 Globemaster IIIs become operational.

Intertheater airlift has the capability to deploy, employ, sustain, and redeploy forces anywhere in the world. During the deployment phase of a contingency, intertheater airlift requirements, while significant, are to a large degree predictable. Such requirements normally are identified in the TPFDD associated with a particular operation plan (OPLAN) or operation order (OPORD). A TPFDD can be tailored to meet specific requirements when the mission is not aligned with an OPLAN or modified to meet the requirements associated with a particular course of action. Under those circumstances where an AEF is a validated component of the supported CINC's approved course of action, AEF support requirements will be reflected in the applicable TPFDD. The AEF concept relies significantly on AMC-provided airlift capability to project military power. Time-definite resupply via airlift from CONUS to the theaters is critical in maintaining the flow of materiel necessary to sustain operations. This concept uses both military and commercial aircraft to support the sustainment flow and must begin as soon as deployment operations begin.

**A key strength of airlift is its ability to swing forces from one theater to another.** Airlift enables commanders to rapidly reposition forces between theaters thereby deterring potential aggressors from acting when US forces are engaged elsewhere.

### **Intratheater Airlift**

**Intratheater airlift provides the air movement of personnel and materiel within a geographic CINC's AOR.** Assets designated to provide intratheater airlift are normally assigned or attached to that geographic CINC. Intratheater operations provide time-responsive airlift to the commander, which may be critically needed to fulfill theater objectives.

**The two categories of intratheater movement are: 1) unit deployment, movement, and redeployment; and 2) continuing resupply of forward deployed units (sustainment).** Unit movements within the theater are in response to the JFC's campaign plan. Once ground combat units are deployed to a theater, the JFC may use airlift to maneuver forces. In this capacity, airlift allows the JFC to reposition forces expeditiously, achieve surprise, and control the timing and tempo of operations.

Movements within a theater also permit the continuing resupply of forward units. These requirements normally are predictable, regular, and quantifiable when the forces are not engaged in combat operations. Dur-



## Operation DESERT STORM's Left Hook

**F**rom 18–28 January 1991, C-130s secretly airlifted elements of the XVIII Airborne Corps from King Fahd International Airport to Rafha, in northern Saudi Arabia, near the Iraqi border. This intense airlift supported General H. Norman Schwarzkopf's flanking maneuver to the west, which he described as a "Hail Mary Pass." C-130s flew the mission corridors at 10-minute intervals in radio silence. During the airlift to Rafha, C-130 sortie rates increased from 200 per day to more than 300 daily and peaked at more than 350 sorties during one 24-hour period. Nearly 14,000 troops and more than 9,300 tons of cargo were transported. General Schwarzkopf said of this fast-paced demonstration of air mobility: "I can't recall any time in the annals of military history when this number of forces has moved over this distance to put themselves in a position to attack."



**Intratheater airlift enables the JFC to move forces to achieve shock and surprise.**

ing pre or posthostilities, these requirements can usually be fulfilled through a fixed resupply schedule. However, once forces are engaged, resupply requirements increase dramatically and become more unpredictable and variable. The ability of airlift to rapidly and flexibly accommodate the critical resupply requirements of units engaged and operating in such a dynamic environment provides commanders an essential warfighting capability.

### Operational Support Airlift (OSA)

OSA is a special classification of operations providing for the timely movement of limited numbers of priority personnel and cargo during



**USTRANSCOM schedules and executes CONUS-based OSA assets.**

wartime, as well as peacetime training for pilots and priority airlift of key decision makers. OSA operations tend to be conducted by smaller-sized business type airframes. In most cases, these airframes are permanently assigned to a theater component or a major command (MAJCOM). While OSA operations are normally conducted in support of the as-



signed organization's organic requirements, OSA assets may be used to reduce extraordinary workload demands on the airlift system. USTRANSCOM is responsible for the scheduling and execution of OSA operations regarding CONUS-based assets while the Services validate OSA requests.

## DELIVERY METHODS

Airlift aircraft deliver their payloads by one of two methods; airland or airdrop. There are a number of tactics, techniques, and procedures associated with each delivery method. The method chosen is based on a variety of planning factors to include the operational objective, user requirements, airfield capabilities, available drop zones, weather, terrain, enemy threats, and aircraft capability.

### Airland

**In most cases, airlifters offload their payloads after they have landed.** *This highly effective and efficient delivery method is usually preferred because it minimizes the risk of injury to personnel and damage to equipment, eliminates payload dispersal, and offers an increased availability of resources. This method requires secure, suitable, and conveniently located airfields.*



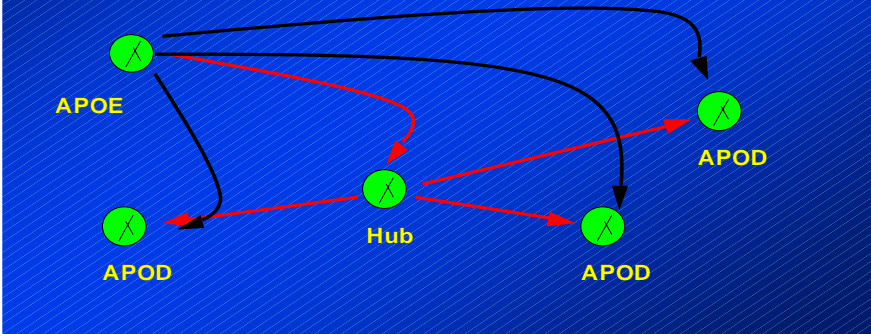
**Airland is the preferred delivery method.**

Intertheater airland operations normally offload personnel and materiel at a main operating location within the theater. Subsequently, intratheater airlift moves designated personnel and equipment to forward operating locations, an employment concept referred to as a *hub and spoke* operation.

Another employment concept, *direct delivery*, involves airlifting personnel and materiel from ports of embarkation to forward operating locations in the theater, bypassing intermediary operating bases and the trans-

## Employment Concepts

- ◆ Hub and Spoke ———
- ◆ Direct Delivery ———



**Figure 4.1. Illustration of hub and spoke and direct delivery**

shipment of payloads typically associated with hub and spoke operations. Direct delivery uses airlift or airdrop delivery methods. For example, personnel can be airlifted from CONUS and delivered directly to the theater by airlifting them at a forward operating location or airdropping them as part of a strategic brigade airdrop operation. Direct delivery shortens in-transit time, reduces congestion at main operating bases, and enhances the sustainment of forward bases.

### Airdrop

If airlift delivery is not practical, or surprise is a consideration, airdrop allows commanders to maneuver forces and materiel directly into otherwise unreachable areas including those behind enemy lines. However, airdrop requires extensive training, coordination, specialized equipment, rigging, and suitable drop zones. This delivery method can be successful in permissive and uncertain environments.

### AIRLIFT MISSIONS

The four basic missions of airlift are: **passenger and cargo movement; combat employment and resupply; aeromedical evacuation; and special operations support.** Air Force airlift forces perform these

## The Siege at Khe Sanh

**I**n mid-December 1967, North Vietnamese units began encircling two US Marine infantry battalions and an artillery battalion at Khe Sanh, South Vietnam, near the Demilitarized Zone. By January 1968, some 15,000 Communist troops had cut off all ground supply. Khe Sanh would have to rely on an air bridge to survive. Air Force C-130s airlanded another infantry battalion to reinforce the base, bringing the total number of defenders to 6,000. The Marines had enough food, fuel, and ammunition to last 30 days, a level of sustainment secured by 15 daily C-130 missions.

Soon, North Vietnamese forces began to increase the volume and frequency of their mortar, rocket, and artillery fire onto the base. On 21 January, the main ammunition dump was hit, prompting a request for an emergency aerial resupply. C-123 and C-130 aircraft responded by airlanding over 2,500 tons of supplies over the following eight days to the besieged Americans. In response to the Marines' obvious reliance on the air bridge, the well dug in and hidden North Vietnamese set up automatic weapons and antiaircraft fire to disrupt the airlift effort.

Due to poor weather conditions and intense ground fire, airlift aircraft changed their tactics. Relying less on airland as a delivery method, airdrop allowed delivery of supplies in less favorable weather and reduced the time aircrews and aircraft were exposed to enemy fire. Utilizing airdrop techniques like the container delivery system to drop ammunition, food, and construction materials, airlift enabled the Marines to stay the course.

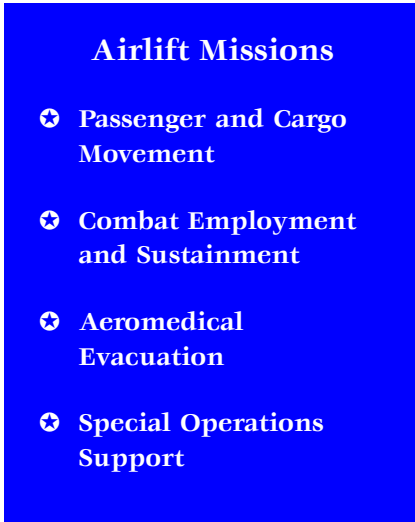
Between the end of January and early April 1968, intratheater airlift delivered 12, 430 tons of cargo to the defenders of Khe Sanh. Despite the loss of three C-123s and damage to numerous C-130 and C-123 aircraft, the air bridge enabled the US Marines to withstand the assault. According to one historian, "Airlift made possible the allied victory . . . The defenders of this post were exclusively resupplied by air and withstood the attacks of four Vietnamese regiments."

*Anything, Anywhere, Anytime: An Illustrated History of the Military Airlift Command, 1941-1991*

missions to achieve strategic-, operational-, and tactical- level objectives across the spectrum of conflict.

## Passenger and Cargo Movement

**Airlift is the ability to transport personnel and equipment through the air.** Normally, movement requirements are fulfilled through regularly scheduled missions over fixed route structures with personnel/cargo capacity available to all customers. These regularly scheduled taskings, known as channel missions, are validated through the appropriate Ser-



**Figure 4.2. Airlift Missions**

*peacetime demands for passenger and cargo movement.* For example, during Operation DESERT SHIELD, new channel routes and structures were established to support the significantly increased airlift demands.

vice organization to USTRANSCOM, and executed by AMC TACC. Depending on user requirements, requests not supportable through the channel structure can be fulfilled through the use of other mission categories such as special air missions (SAM), special assignment airlift missions (SAAM), and exercise and contingency missions. Requests that cannot be satisfied by any of the above missions may be referred to other transportation modes of the Defense Transportation System. *The airlift system has the flexibility to surge and meet requirements that exceed routine,*

- ✦ **Air Mobility Express (AMX).** The vast majority of airlift sustainment will move on channel missions. However, AMC is prepared to establish, at the request of the supported combatant commander during a contingency, an express service to move “war stopper” items rapidly to the AOR. The supported combatant commander will direct what portion of CJCS-allocated airlift will be used for AMX and will allocate space on express aircraft by pallet positions to each component. For AMX to be effective, the supported combatant commander must establish a theater distribution system to deliver express cargo from APOD to final destination.

### **Combat Employment and Sustainment**

**This mission allows a commander to insert surface forces directly and quickly into battle and to sustain combat operations.** For example, combat employment may involve airdropping paratroopers behind enemy lines. Combat sustainment may consist of reinforcement of front-line forces engaged with the enemy. Airlift affords commanders a high degree of combat maneuverability permitting enemy troop strongholds to be bypassed. This provides friendly forces a potent offensive ad-

## Operation JUST CAUSE

**I**n the closing days of 1989, the United States engaged in the largest American combat operation since Vietnam, Operation JUST CAUSE. At the center of the controversy was Panamanian dictator, General Manuel Noriega. After enduring several years of illegal and corrupt activity by General Noriega, a number of trigger events occurred in mid-December 1989 that forced President Bush to order the US military into action. First, General Noriega announced on 15 December 1989 that a state of war existed between the United States and Panama. On the following day, Panamanian Defense Forces (PDF) killed an off-duty US Marine, First Lieutenant Robert Paz. Witnessing the murder, a Navy lieutenant and his wife were arrested, threatened, and abused.

The plan for Operation JUST CAUSE rested on five objectives established by the NCA: (1) safeguard American citizens in Panama, (2) restore a democratic form of government, (3) ensure the uninterrupted operation of the Panama Canal, (4) neutralize the PDF and, (5) remove General Noriega from power. Planners immediately recognized that airlift would play a lead role in achieving these objectives.

In the early hours of December 19, a massive airborne assault composed of Army Rangers from Forts Lewis and Stewart as well as airborne troops from Fort Bragg was directed against key strategic targets in Panama. Spearheading the attack, 25 C-130 and 80 C-141 aircraft from Military Airlift Command (MAC) successfully airdropped these troops and their equipment as planned. However, the aerial insertion did not come without cost. Security breaches, due in part to media leaks, tipped off the PDF that an airlift invasion was imminent and robbed US forces of tactical surprise. Fourteen MAC aircraft sustained battle damage and 23 US servicemen lost their lives.



In the final analysis, Operation JUST CAUSE was an enormous success and showcased the speed, range, flexibility, and versatility of airlift and its ability to operate in a forcible entry environment. Shortly after the invasion, General Manuel Noriega surrendered himself to US authorities and was flown by C-130 to the United States where he faced charges and eventual imprisonment for drug trafficking.

vantage, complicating the enemy's defensive preparations. *Combat employment and sustainment usually accounts for a small percentage of total airlift sorties; nevertheless, its importance is far greater than the number of sorties indicates. This is a capability that in most circumstances cannot be accomplished by other means.*

**While this mission provides significant capabilities, it also carries substantial risk.** Success in combat employment and sustainment hinges on air superiority and threat avoidance. This requires accurate and timely intelligence regarding threats along the ingress and egress routes and over the target area. Once delivered to the target area, the inserted force may be totally dependent upon subsequent airlift operations for sustainment, movement, withdrawal, or redeployment.

Another important aspect of combat employment and sustainment is the concept of forcible entry. In performing this operation, airlift forces are usually matched with airborne, air assault, light infantry, or ranger forces specifically designed for delivery by air. This operation normally involves the insertion of airborne forces via airdrop; however, carefully planned airland assault operations can be equally effective. An example of intertheater forcible entry operations is the brigade airdrop capability the Air Force provides for the Army. This gives the NCA a unique power projection capability.

### **Aeromedical Evacuation (AE)**

AE is the rapid intertheater and intratheater transportation of sick or injured personnel under medical supervision to appropriate medical care. Movement of patients normally requires specially qualified aeromedical crewmembers to accompany the patient, special air traffic control considerations to comply with patient driven altitude and pressurization restrictions, and special aircraft systems medical equipment.

Wherever possible, aircraft being used exclusively for AE shall be marked with the Red Cross and personnel exclusively supporting AE missions shall wear the Red Cross. All such personnel must be mindful of their obligation under the law of armed conflict and their status as protected personnel.

The Aeromedical Evacuation Control Center (AECC) provides operational and communications network control for theater AE elements. The AECC manages the medical aspects of AE mission operations and is the operations center where the overall planning, coordinating, and directing of theater AE operations are accomplished. The AECC is responsible for identifying and coordinating AE airlift requirements, notifying appropriate elements of airlift schedules, and monitoring execution of AE missions. It serves as the liaison team in the AMD for deployed medical units

in the theater. The AECC should be deployed simultaneously and independently from the AOC but requires collocation with the AOC.

- ✦ Intertheater AE - Contingency intertheater AE will normally be accomplished using dedicated AE CRAF. Retrograde or dedicated military AE aircraft may be used when AE CRAF capability is exceeded or on an urgent/priority basis. Alternatives to AE CRAF or military aircraft may be pursued when competing airlift or evacuee requirements reduce airframe availability. These alternatives could include use of other organic military airlift, CRAF passenger aircraft, or authorization for commercial travel for ambulatory patients who do not require in-flight supportive medical care.



**CRAF augments intertheater AE.**

- ✦ Intratheater AE - Intratheater AE involves movement of patients within the theater of operations from the mobile aeromedical evacuation facilities located near the front lines, to the aeromedical staging facilities in the rear area. This movement of casualties out of the combat zone during contingency operations is generally accomplished using dedicated or scheduled aeromedical aircraft.



**The C-9 Nightingale is the workhorse for intratheater AE.**

## Special Operations Support

Specified airlift forces provide unique airland and airdrop support to special operations for joint/multinational training, contingencies, operations other than war, and other missions as directed by the NCA. Since there are a limited number of airlift assets dedicated to this mission, the principle of economy of force is particularly applicable.

When performing special operations missions, highly trained airlift crews normally act as an integral member of a larger joint package. Because these airlift missions routinely operate under adverse conditions in a hostile environment, extensive planning, coordination, and training are



**Special operations forces rely on airlift support.**

required to minimize risk. Airlift used in a special operations role provides commanders the capability to achieve specific campaign objectives, which may not be attainable through more conventional airlift practices.

## **SUMMARY**

**Airlift is essential to successfully pursuing national strategies, supporting the requirements of theater commanders, and conducting global operations throughout the range of military operations.**

*Airlift is a "Total Force" composed of active duty, Air Force Reserve, Air National Guard, and civil reserve air fleet elements, combining broad levels of expertise and backgrounds into a large pool of available resources. Moreover, airlift supports other Services, DOD agencies, the military forces of allied nations, and US government as well as non-governmental organizations.* The demands placed on airlift forces are numerous and often unpredictable. *Airlift's inherent versatility, flexibility, and responsiveness often enables the warfighter to successfully accomplish the mission.* Airlift is an essential element of war-winning aerospace power.



## CHAPTER FIVE

# AIR REFUELING

*I had to fly nine sorties on the day the St Mihiel offensive started...We all wished we could refuel somehow without having to return to our bases just when the action got interesting.*

Lieutenant John Richter,  
US Army Service Pilot in WWI

### GENERAL

**Air refueling, the refueling of an aircraft, known as a receiver, in-flight by another aircraft,** referred to as a tanker, supports the national military strategy across the spectrum of military operations. Air refueling allows air assets to rapidly reach any trouble spot around the world with less dependence on forward staging bases. Furthermore, air refueling significantly expands the force options available to a commander by increasing the range, payload, loiter time, and flexibility of other aircraft.

**Because air refueling increases the range of other aircraft, expeditionary air forces may be based at locations well outside the range of an enemy threat.** Air refueling allows some aircraft to participate in contingency operations without having to forward deploy. CONUS-based operations reduce the theater logistics requirements thereby simplifying sustainment efforts. Positioning forces outside the enemy's reach permits a greater portion of combat assets to concentrate on offensive rather than defensive action. As a result of the reduced need to forward deploy forces, air refueling reduces force protection requirements as well.

**Although other Services and nations maintain some organic air refueling capability, the US Air Force possesses the overwhelming preponderance of joint and multinational common-user air refueling assets.** These assets are capable of refueling most Air Force, Navy, and Marine aircraft and can accommodate many foreign aircraft.



**Tanker aircraft operating under the dual role concept can transport passengers and cargo while performing air refueling.**

**Additionally, all tanker aircraft are capable of performing an airlift role and are used to augment core airlift assets.** *Under the dual role concept, tankers can transport a combination of passengers and cargo while performing air refueling.* In some circumstances, it may be more efficient to employ tankers strictly in an airlift role. Frequently, deploying air refueling units may be tasked to use their organic cargo capacity to transport unit personnel and support equipment. Tankers may also be used to support airlift requirements such as routine channel operations or SAAMs.

### **Force Enabler—Force Multiplier**

*Air refueling acts as a force enabler permitting aircraft to operate beyond their unrefueled ranges. It also acts as a force multiplier permitting larger payloads and added endurance, significantly increasing the combat potential of the receiver aircraft.*

### **Force Extension**

**Force extension is the air refueling of one tanker by another.** *This capability can be used whenever the fuel requirements of the escorting tanker and its receivers exceed the tanker's takeoff fuel capacity.* Force exten-



**Force extension is often used for transoceanic fighter movements.**

sion is often used when tankers supporting aircraft deployments are carrying cargo as well as refueling other aircraft (dual-role). Since takeoff fuel is limited by the amount of payload carried, tankers operating in a dual-role may require force extension. All KC-10 aircraft and a small number of KC-135 aircraft are equipped to receive air refueling and be force extended.

## **COMPONENTS OF THE AIR REFUELING FORCE**

**The Air Force's active duty, Air Force Reserve, and Air National Guard air refueling force is the largest and most experienced of its kind in the world.** *The majority of the Air Force's air refueling assets are assigned to Air Force Reserve and Air National Guard units.* With both boom and drogue capability, Air Force air refueling aircraft can refuel most joint and allied aircraft equipped for air refueling.

### **Active Duty Forces**

Similar to airlift forces, CONUS-based active duty air refueling forces are assigned to and under the combatant command, COCOM, of USCINTRANS and under the operational control, OPCON, of USCINTRANS' air component, AMC. Similarly, theater-based active duty air refueling forces are assigned to and under the COCOM of their regional CINC (e.g., USCINCEUR or USCINCPAC) and under the OPCON of their regional CINC's respective air component (e.g., USAFE or PACAF).

These forces perform core and specialized air refueling missions and are readily available for tasking and deployment.

### **Air Force Reserve and Air National Guard Forces**

**Air refueling forces in the AFRC and ANG are aligned similarly to that of AFRC and ANG airlift forces.** These assets are an integral part of AMC's operations, flying air refueling missions in support of national taskings every day. *During crises, volunteers or activated AFRC/ANG units augment the active duty air refueling force*, providing substantial increases in air refueling capacity. AFRC/ANG personnel are experienced operators and train to the same standards as the active duty air refueling force. Peacetime access to AFRC/ANG forces is provided through a system of volunteerism. Major contingencies, however, normally require activation or "call up" of AFRC/ANG units.

## **AIR REFUELING OPERATIONS**

Air refueling's contribution to airpower is based on the force enabling and force multiplying effects of increased range, payload, and endurance provided to refueled aircraft. Air refueling forces conduct both intertheater and intratheater air refueling operations.

### **Intertheater Air Refueling**

Intertheater air refueling supports the long-range movement of combat and combat support aircraft between the CONUS and a theater, or between theaters. Intertheater air refueling operations also support global attack missions and airlift assets in an air bridge. Air refueling enables deploying aircraft to fly non-stop to their destination, reducing closure time.

### **Intratheater Air Refueling**

Intratheater air refueling supports operations within a combatant commander's AOR by extending the range, payload, and endurance of combat and combat support assets. Both theater-assigned and USCINTRANS-assigned air refueling aircraft can perform these operations. When USCINTRANS-assigned air refueling forces participate in these operations, they are typically attached to the theater CINC who exercises OPCON over these forces. The primary purpose is to refuel combat air forces operating within the theater.



**During DESERT STORM, 60 percent of all attack sorties required air refueling. More than 1,400 aircraft per day were air refueled. Only attack and airlift missions accounted for more sorties than air refueling.**

## **AIR REFUELING MISSIONS**

**There are six basic missions of air refueling.** These missions represent the broad, fundamental, and continuing activities of the US Air Force's air refueling system. Air Force air refueling forces perform these missions in support of strategic-, operational-, and tactical- level objectives across the spectrum of conflict.

### **Single Integrated Operation Plan (SIOP) Support**

Support of the SIOP was the driving force in the US Air Force's initial procurement of air refueling aircraft and remained the primary mission of the Air Force tanker fleet throughout the cold war. Even though this mission has been greatly de-emphasized since the break up of the Soviet Union, it remains a critical operational requirement.

### **Air Refueling Missions**

- ✦ **SIOP Support**
- ✦ **Global Attack Support**
- ✦ **Air Bridge Support**
- ✦ **Deployment Support**
- ✦ **Theater Support to Combat Air Forces**
- ✦ **Special Operations Support**

**Figurer 5.1. Air Refueling Missions**

**Air refueling support is critical to the bomber leg of the Triad.**



**Air refueling assets are incorporated into the SIOP to support the bomber leg of the nuclear triad.** Air refueling provides the nuclear-equipped bomber force the ability to deliver their payload to any location in the world and recover to a suitable reconstitution base. Through air refueling, the range and endurance of bomber aircraft is significantly increased, further enhancing their flexibility to strike at distant targets. Bombers may be launched during periods of increased tension and proceed to orbit areas well beyond the range of enemy missiles or attack aircraft. The bombers can maintain this orbital status until they are directed to fulfill their mission or are recalled.

In the same manner, **the nearly unlimited flight endurance provided by tanker assets is an indispensable component of our strategic airborne command post concept.** It provides the NCA the ability to continue to direct military action from an airborne platform—regardless of the situation.

### **Global Attack Support**

**Air refueling assets can be employed to give strike platforms the ability to reach any target globally without relying on intermediate basing locations.** This provides the ability to rapidly strike targets in distant locations and recover to safe areas. The ability to perform long range strike missions from CONUS is particularly crucial.

## Operation DESERT STRIKE

**D**uring August 1996, Iraqi forces violated United Nations resolutions by entering northern Iraq to intervene in a civil war among Kurdish factions. The United States retaliated with an attack on Iraqi air defenses. Operating in conjunction with the US Navy, the Air Force portion of the strike was conducted by two B-52s which flew a 15-hour, non-stop repositioning leg to Anderson AB, Guam. In addition, a C-5 aircraft airlifted 100 maintenance and mission support personnel from CONUS to Anderson AB. From Guam, the bombers flew to the Persian Gulf region, released 13 air-launched cruise missiles (ALCM), and returned to Guam on a grueling 34-hour, 14,000-mile mission. Both legs of the bomber mission were dependent on air refueling provided by active duty, Air National Guard, and Air Force Reserve KC-10s and KC-135s. Overall, 14 tankers supplied close to a million pounds of fuel for the repositioning leg to Anderson AB while 17 tankers deployed to Guam offloaded nearly 1.5 million pounds of fuel for the air strike.

Operation DESERT STRIKE demonstrated the synergy that results when global attack assets are properly coupled with air refueling forces. Striking at targets situated halfway around the world, air refueling allowed the B-52s to accomplish this operation with maximum flexibility in minimum time. Without overflight clearances, mission planners had to rely on the flexibility offered by air refueling to accommodate for the increased flight distances to ALCM release points in Southwest Asia. In addition, time requirements were greatly compressed. The deployment order arrived on 31 August, at which point tankers began moving into position. The attack launched on 2 September and was completed by the next day. Air refueling is a tremendous force enabler and clearly played a significant role in the success of Operation DESERT STRIKE.

### Air Bridge Support

**An air bridge creates an air line of communication linking the CONUS and a theater, or any two theaters.** *Air refueling makes possible accelerated air bridge operations since en route refueling stops are reduced or eliminated.* It reduces reliance on forward staging bases, minimizes potential en route maintenance delays, and enables airlift assets to maximize their payloads. This significantly increases the efficiency of airlift operations by making possible the direct delivery of personnel and materiel.

**Commanders must follow the economy of force principle when planning air refueling support for air bridge operations.** Consequently, air refueling missions should be designed to maximize the efficiency of tanker aircraft supporting the air bridge. Failure to do so will result in air refueling assets being less available to support other missions.



**The limited range of fighter aircraft demands air refueling support for non-stop deployments.**

### **Deployment Support**

**Air refueling assets can extend the range of deploying combat and combat support aircraft, allowing them to fly non-stop to an AOR/JOA.** *This capability increases the deterrent effect of CONUS-based forces and allows a rapid response to regional crises.* The capability of air assets to fly non-stop to a theater may eliminate the need to obtain landing or overflight rights from foreign countries that may want to remain neutral in a given conflict. Successful execution of the AEF concept, for example, is heavily dependent on the capabilities rendered through deployment support.

### **Theater Support to Combat Air Forces**

Intratheater air refueling enables fighter aircraft to increase their range, endurance, and flexibility. Theater-based air refueling assets bolster the security of combat and combat support air assets by allowing them to be based beyond the range of enemy threats.

Air refueling increases the endurance of air combat support assets. AWACS, JSTARS, RIVET JOINT, and airborne battlefield command and control center (ABCCC) are among the many crucial airborne platforms





**Special operations often need support from air refueling assets to satisfy their requirements.**

used to help manage, direct, and conduct combat operations. Without in-flight refueling, they have limited endurance and require extensive regeneration periods between sorties. Extending endurance reduces the number of sorties required, decreases ground support requirements at forward locations, and may reduce the number of aircraft deployed to an AOR.

### **Special Operations Support**

Air refueling enables special operations forces (SOF) to maintain a long-range operating capability. The US Air Force maintains air refueling crews who are trained to air refuel fixed and rotary-wing special operations aircraft. Successful mission completion requires special equipment, specialized crew training, and modified operational procedures.

### **SUMMARY**

Air refueling is a force enabler and a force multiplier. It increases the range and combat effectiveness of air refuelable assets. While initially created to support the SIOP, the air refueling force is an indispensable component of aerospace power, contributing to operations across the spec-

trum of military operations. Missions such as SIOF, global attack, air bridge, deployment and special operations support as well as theater support to combat air forces are heavily dependent on air refueling forces.

## CHAPTER SIX

# AIR MOBILITY SUPPORT

*Air power is not made up of airplanes alone. Air power is a composite of airplanes, air crews, maintenance crews, air bases, air supply, and sufficient replacements in both planes and crews to maintain a constant fighting strength. . .*

**General Hap Arnold**

## GENERAL

Airlift and air refueling forces rely on a robust global support system when conducting air mobility operations. Successful employment of the MAF is contingent upon establishing and maintaining a Global Air Mobility Support System (GAMSS) that enables the deployment, employment, sustainment, and redeployment of air mobility forces throughout the spectrum of military operations.

### Global Air Mobility Support System (GAMSS)

**The GAMSS provides responsive, worldwide support to airlift and air refueling operations.** *This system consists of an existing but limited set of permanent CONUS and en route locations. Deployable forces capable of augmenting the fixed en route locations or establishing en route locations where none exist are also an integral part of this system.* These deployable forces are stationed both in CONUS and at select overseas bases. The GAMSS is flexible, expanding or contracting according to the requirements for support. It permits continuous, global command and control over the MAF, providing commanders with real-time information on the status of missions and assets, as well as the location and disposition of transported personnel and materiel. Collectively, the capabilities of the fixed CONUS and en route structure and deployable units employing the *global reach laydown* strategy allow airlift and air refueling forces to expand operations at existing locations and/or establish operations at new locations.

**The global reach laydown strategy calls for in-garrison GAMSS units to rapidly deploy to any location in the world to support airlift and air refueling operations.** While providing such functions as

command and control, aerial port operations, and aircraft maintenance, GAMSS units strive to coordinate and synchronize intertheater and intratheater air mobility operations in a manner that appears seamless to the customer. The GAMSS facilitates such operations as air bridge support, hub and spoke operations, airfield surveys for pending operations, and establishing arrangements for host-nation support. Quick response requirements by the NCA means GAMSS-deployable forces must be able to deploy rapidly and begin immediate operations.

### **GAMSS and Rapid Global Mobility**

**The reduction in forward-deployed forces following the end of the cold war has resulted in an increased dependence on airlift and air refueling capabilities to project US military presence throughout the world.** These capabilities, in turn, increasingly depend on the GAMSS to provide *rapid global mobility*. The mobile forces of the GAMSS enables the en route system to expand or contract as necessary, providing worldwide coverage and lending direct support to the *rapid global mobility* concept.

**The mobile forces which make up the GAMSS must be able to deploy and commence support operations with the same speed and efficiency as the forces they support.** Without this, support will “lag” behind the operations tempo necessary to meet the unified commander’s requirements—resulting in delays of critical forces and supplies that may be key to prosecuting the JFC’s mission. For this reason, the training GAMSS forces receive must be thorough and their use in exercises should be both realistic and challenging. Today’s military operations demand a significant reduction in the amount of time available to commanders to transport, position, and prepare forces. This means the “transition to contingency” phase of an operation is particularly critical and, depending on how effectively this transition occurs, could ultimately impact the degree of success achieved while working to meet the warfighting CINC’s objectives. Highly trained forces, used realistically in exercise scenarios, will be invaluable assets during the transition to a contingency.

**Not only must GAMSS forces deploy quickly; they must deploy first—prior to the main flow of forces.** This force sequencing enables supported forces to immediately swing to follow-on missions because essential support infrastructure for the operation is already in place. To

work properly, GAMSS forces must preposition themselves at key locations outside the theater prior to the deployment of forces—usually upon receipt of the JCS alert order. Consequently, mission planners must provide adequate lead times for GAMSS forces to organize and take initial preparatory measures.

## **GAMSS COMPONENTS**

**GAMSS forces are drawn from active duty, Air Force Reserve Command (AFRC), and Air National Guard (ANG) components.** *Collectively, these components provide the forces that make up the permanent CONUS and overseas GAMSS organizations as well as the deployable forces stationed primarily in CONUS.* These components support operations throughout the spectrum of military operations.

### **Active Duty Component**

**The vast majority of active duty GAMSS units are assigned to a functional combatant command, USTRANSCOM, and support both functional and geographic combatant commanders.** *These forces provide the core day-to-day en route support at both permanent and non-permanent locations.* Active duty forces offer a combatant commander accessible and flexible GAMSS capability that is immediately available for worldwide taskings. While active duty GAMSS forces offer a great advantage in terms of being available on a full-time basis, demand for deployable units consistently outpaces supply. As a result, great reliance is placed on Air National Guard and Air Force Reserve Component assets to meet routine and contingency demands placed on the GAMSS.

### **Air National Guard and Air Force Reserve Command Component**

**Both the Air National Guard and Air Force Reserve Command provide forces to augment active duty GAMSS units.** *AFRC/ANG forces are an important supplement to active duty GAMSS forces. During peacetime, the AFRC/ANG provide forces on a volunteer basis. When mobilized, AFRC/ANG units are placed on active duty status and may be used in the same manner as regular active duty units. AFRC/ANG forces maintain the same mission-ready status as their active duty counterparts.*



**TALCEs are designed to provide air mobility support at austere locations.**

## **ELEMENTS OF THE GAMSS**

### **Tanker/Airlift Control Element (TALCE)**

**A TALCE is a mobile organization responsible for providing continuous on-site management of mobility airfield operations.** It is a *temporary* organization composed of various mission support elements (MSE). Normally commanded by a commissioned officer, TALCEs deploy to provide mission support when command and control, mission reporting, or required mission support functions are insufficient. In addition to providing command, control and communications capability, TALCEs provide aerial port, logistics, maintenance, security, weather, medical, and intelligence services, as necessary. *TALCE size is based on projected support requirements.*

### **Mission Support Team (MST)**

MSTs are smaller TALCE-like organizations capable of providing support similar to that of a TALCE although on a much smaller scale. Normally commanded by a noncommissioned officer, MSTs provide a level of command and control, aerial port, and maintenance services capable of supporting a “maximum on ground” (MOG) of one aircraft.

### **Mission Support Element (MSE)**

MSEs provide a specific mission support capability in direct support of airfield operations other than the core command and control, logistics, or

aerial port services. They may be deployed as an element of a TALCE or MST, or as a small scale stand alone entity. An MSE has personnel and equipment deployed to support a specific mission or requirement at mobility airfields or off-line locations.

## OPERATIONS

### Peacetime

**The fixed en route portion of the GAMSS is composed of CONUS and overseas en route locations sized, manned, and equipped to support peacetime air mobility operations.** The permanent portion of the GAMSS is composed of major CONUS-based aerial ports, key overseas locations, and smaller Air Force- or Navy-sponsored commercial contractor terminals.

**Air Mobility Support Groups (AMSGs) and their component Air Mobility Support Squadrons (AMSSs) provide outside continental United States (OCONUS) en route support.** The AMSG formulates plans, establishes procedures, and directs the administration of their respective and subordinate AMSS units in support of customer aircraft, cargo, passengers and patients. The AMSG provides logistics, intelligence, and air transportation planning to meet mission requirements. *AMSS organizations are administratively aligned under an AMSG.*

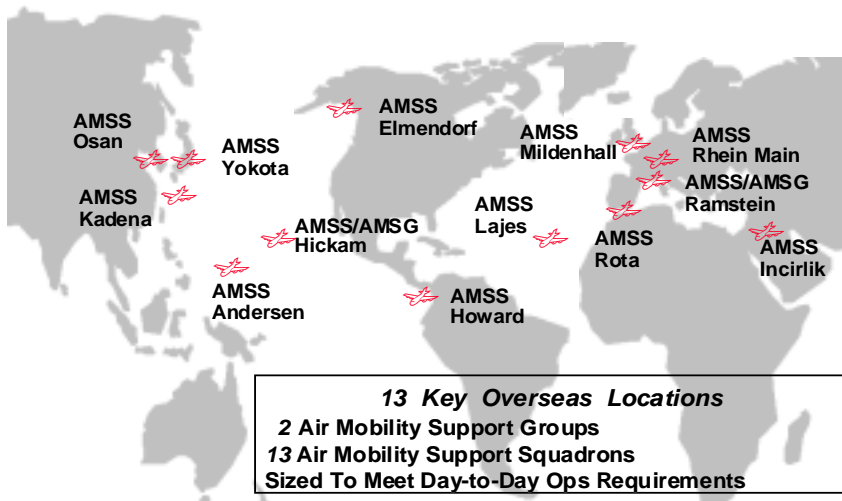
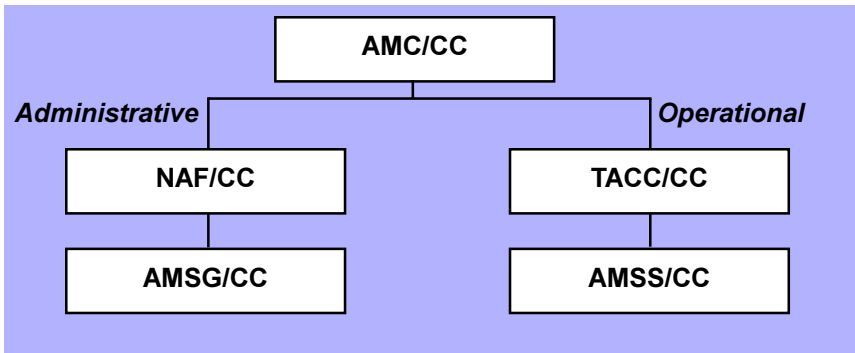


Figure 6.1. Present En Route System

AMSSs are situated at key overseas en route locations to operate air terminal facilities in support of the Defense Transportation System and numerous DOD customers. AMSS personnel generate, launch, and recover air mobility missions and en route support aircraft. Each AMSS operates an air mobility control center (AMCC), which serves as the command and control conduit to the TACC for air mobility mission tracking. In addition, one AMSS under each AMMSG contains an air mobility control flight (AMCF) capable of providing an immediate initial response TALCE or MST core command, control and communications element.

Each AMMSG, as well as their subordinate units, are administratively aligned under their respective numbered air force (NAF). Therefore, Service-related issues are addressed through administrative lines that pass through each NAF commander (CC) to its respective AMMSG/CC. Alternatively, operational authority for planning, scheduling, tasking, and executing missions passes through the TACC/CC to the AMSS/CCs. (See Figure 6.2.)



**Figure 6.2. GAMSS Command and Control**

### Transition to a Contingency

**The deployable portion of the GAMSS is used to establish air mobility presence and infrastructure where none exists or expand the fixed portion of the en route system.** *Under the global reach laydown strategy, predominantly CONUS-based resources are teamed together to form deployable elements or teams.* A composite of personnel and equipment, appropriately sized and tailored, form TALCEs, MSTs, and/or MSEs specifically designed to satisfy a particular operational requirement. While the global reach laydown strategy entails a global capability to rapidly



deploy and provide the core functions of air mobility support (i.e., command and control, aerial port operations, and aircraft maintenance), GAMSS forces are also capable of providing any other support capabilities necessary to sustain air mobility operations.

The AMC organizations designed specifically to provide assets for the deployable portion of the GAMSS are the air mobility operations groups (AMOGs), airlift control squadrons (ALCSs), and AFRC/ANG airlift control flights (ALCFs). In addition, USAFE and PACAF both possess deployable units designed to function as part of the GAMSS. The CONUS-based AMOGs are the source for a variety of deployable GAMSS units, all of which are broadly referred to as air mobility control units (AMCUs). The AMOG as an organization does not deploy; however, it provides the resources for and coordinates the deployment of AMCUs, ensuring personnel, equipment, training, and procedures are compatible with mission requirements. It is from (or through) the AMCUs that command and control, aircraft maintenance, and aerial port personnel are provided for deployed operations under the GAMSS. The AMCUs deployed from the ALCSs and the ALCFs only provide the TALCE or MST core command, control, and communication functions. Any additional capability beyond these core functions must be sourced and tasked elsewhere (typically from the AMOGs or various mobility wings) by AMC TACC and deployed as purpose-specific MSTs or MSEs. (See Figure 6.3.)

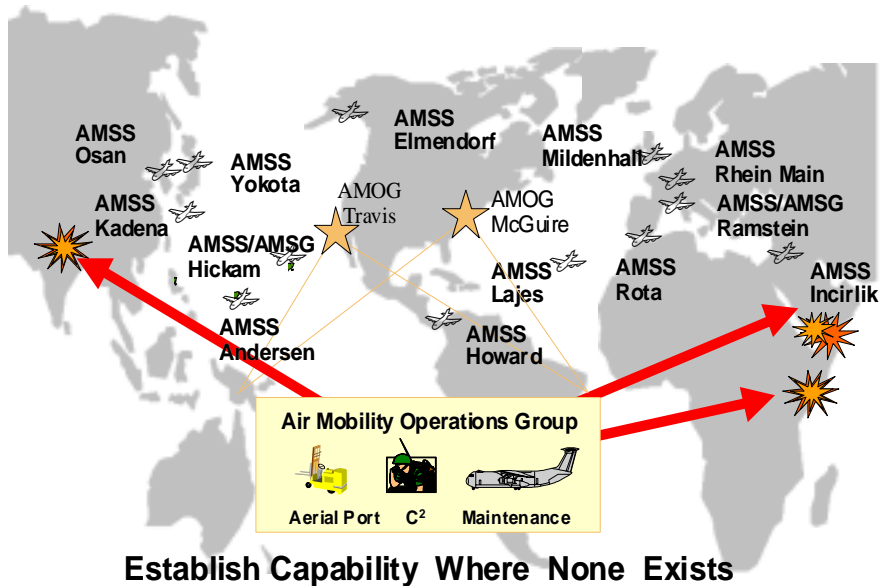


Figure 6.3. Global Reach Laydown Concept

**Each AMOG and its subordinate units are administratively aligned under their respective NAF.** Service-related issues are addressed through administrative lines that pass through each NAF/CC to its respective AMOG/CC. However, operational authority for planning, scheduling, tasking and executing missions passes through the TACC/CC to the AMCU/CCs. (See Figure 6.2.)

**The AMC TACC is the tasking authority for all deployable AMC GAMSS units. [Note: USAFE and PACAF retain tasking authority over their deployable GAMSS units.]** *Personnel in these units must be capable of deploying rapidly upon notification.* Centralized control through AMC TACC enables AMC/CC to rapidly shift these forces in response to globally prioritized taskings.

**The AMOGs, as tasked by AMC TACC, provide AMC personnel and equipment that contribute to the formation of an AMD, including the AME.** The air combat command NAFs and theater air components will provide the theater's portion of an AMD. AME personnel and equipment become part of the air mobility division which operates under the direction of the DIRMOBFOR.

## **FUNCTIONS**

**The three core functions provided through the Global Air Mobility Support System are command and control, maintenance, and aerial port.** All major en route locations will provide these services, however, other support capabilities that directly impact air mobility operational missions (force protection, life support, intelligence, etc.) can be added to these basic functions to complement this system at an en route location. The level of support can be tailored to match the workload requirements at any particular en route location. Consequently, GAMSS mobile forces can provide a method for (1) establishing support capabilities at existing or formerly "bare-base" locations; (2) tailoring the level of support provided at a location; and (3) adding additional support capabilities at a location to complement the three basic functions.

### **Command and Control**

**One of the most important features of the GAMSS is its use of various command and control systems to ensure in-transit visibility (ITV) is established and maintained.** Commanders depend on ITV information since accurate, timely, and complete information regard-

ing the location and delivery status of transported personnel and materiel provides the ability to continuously monitor the readiness of forces in the theater. *The use of modern command and control systems to provide in-transit visibility simplifies operational planning by reducing the element of uncertainty inherent in deployed operations.* The command and control systems are tied together in a network which is accessible to theater commanders.

**GAMSS personnel feed information directly into a data network that provides ITV – the Global Transportation Network (GTN).** This network provides the integrated transportation data and systems necessary to accomplish ITV across the entire range of military operations. GTN represents the systemic nature of *global reach laydown* operations. *Global reach laydown forces are most effective when exercised as part of a global system of support where the elements of the system perform a dedicated mission, operate according to a common set of standards and procedures, and are employed in a manner that reflects the emphasis placed on integration.*



**Seamless operations are dependent on a robust C2 capability.**

Consequently, the effectiveness of the GAMSS relies significantly on maintaining a relationship where the various elements operate as parts of a single integrated system of support, rather than being fragmented and split into numerous disparate, uncoordinated roles and tasks. Without such an integrated effort, the ability to successfully provide rapid global mobility to the warfighter is seriously compromised.

## **Aircraft Maintenance**

**Deployable GAMSS forces are often the first US Air Force personnel to arrive at a given operating location and they are limited in what they can bring, to include aircraft maintenance capability.** GAMSS maintenance capability is contained in two deployable organizations, the TALCE and the maintenance recovery team (MRT). Designed primarily to support air mobility aircraft conducting deployment operations, *GAMSS maintenance units are not intended to provide sustained maintenance.*

**The GAMSS maintenance capability contained in the TALCE is more robust than that found in an MRT** and consists mostly of cross-functional maintenance specialties designed to provide aircraft marshaling, parking, refueling, limited aircraft troubleshooting, and repair capability. If specific aircraft repair capability is required at a deployed location, an MRT will be deployed with appropriate specialists, equipment, and parts to accomplish the repair.

### **Aerial Port**

GAMSS units possess a more robust aerial port capability than maintenance capability. TALCEs and other GAMSS units are designed to establish and operate air mobility airheads and they have the ability to onload and offload a set number of aircraft based on forecast workload requirements. In addition, GAMSS aerial port specialists provide expertise to establish a marshaling yard and traffic routing for cargo, aircraft servicing, passenger manifesting, and air terminal operations center services.

**The GAMSS aerial port services provided by TALCE units are not designed for long-term, sustained aerial port operations.** For sustained aerial port services in a location not serviced by a contractor or an



**Aerial port operations are sized based on forecast workload requirements.**

AMSS, an expeditionary wing/group will normally be established. An expeditionary wing/group will normally bring organic aerial port personnel and equipment to the deployed location.

## **SUMMARY**

**GAMSS assets and personnel comprise the vitally important foundation and third leg of the air mobility triad.** The mobile portion of the GAMSS forces must possess the capability to deploy quickly and, just as important, prior to the forces they support. This is due to the fact that the post cold war reduction in overseas support capabilities requires that appropriately trained personnel deploy with little warning and quickly establish a robust support infrastructure that allows operations in the theater to begin immediately. *The GAMSS provides the essential enabling capability that allows the other components of air mobility (airlift and air refueling) to operate effectively in any environment and meet the operational objectives of the JFC.*



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# Glossary

## Abbreviations and Acronyms

<b>ACC</b>	air component commander
<b>ABCCC</b>	airborne battlefield command and control center
<b>ACO</b>	airspace control authority
<b>ADCON</b>	administrative control
<b>AE</b>	aeromedical evacuation
<b>AECC</b>	aeromedical evacuation control center
<b>AEF</b>	air expeditionary force
<b>AFDD</b>	Air Force Doctrine Document
<b>AFR</b>	Air Force Reserve
<b>AFRC</b>	Air Force Reserve Command
<b>ALCF</b>	airlift control flight
<b>ALCS</b>	airlift control squadron
<b>ALCT</b>	airlift control team
<b>AMC</b>	Air Mobility Command
<b>AMCC</b>	air mobility control center
<b>AMCF</b>	air mobility control flight
<b>AMCT</b>	air mobility control team
<b>AMCU</b>	air mobility control unit
<b>AMD</b>	air mobility division
<b>AME</b>	air mobility element
<b>AMOCC</b>	air mobility operations control center
<b>AMOG</b>	air mobility operations group
<b>AMSG</b>	air mobility support group
<b>AMSS</b>	air mobility support squadron
<b>AMX</b>	air mobility express
<b>ANG</b>	Air National Guard
<b>AOC</b>	aerospace operations center
<b>AOR</b>	area of responsibility
<b>APOD</b>	aerial port of debarkation
<b>APOE</b>	aerial port of embarkation
<b>ARC</b>	air reserve components
<b>ARCT</b>	air refueling control team
<b>ATO</b>	air tasking order
<b>AWACS</b>	airborne warning and control system
<b>C2</b>	command and control
<b>CC</b>	commander

<b>CINC</b>	commander in chief
<b>CJCS</b>	Chairman, Joint Chiefs of Staff
<b>COCOM</b>	combatant command (command authority)
<b>COMAFFOR</b>	Commander, Air Force Forces
<b>COMUSAFE</b>	Commander, US Air Forces in Europe
<b>CONOPS</b>	concept of operations
<b>CONUS</b>	continental United States
<b>CRAF</b>	Civil Reserve Air Fleet
<b>CSAF</b>	Chief of Staff of the Air Force
<b>DIRMOBFOR</b>	Director of Mobility Forces
<b>DoD</b>	Department of Defense
<b>DTS</b>	Defense Transportation System
<b>DZ</b>	drop zone
<b>GAMSS</b>	Global Air Mobility Support System
<b>GRL</b>	global reach laydown
<b>GTN</b>	Global Transportation Network
<b>ISR</b>	intelligence, surveillance, reconnaissance
<b>ITV</b>	in-transit visibility
<b>JAOC</b>	joint air operations center
<b>JCS</b>	Joint Chiefs of Staff
<b>JFACC</b>	joint force air component commander
<b>JFC</b>	joint force commander
<b>JMC</b>	joint movement center
<b>JOA</b>	joint operations area
<b>JSTARS</b>	joint surveillance target attack radar system
<b>JTB</b>	Joint Transportation Board
<b>JTF</b>	joint task force
<b>LZ</b>	landing zone
<b>MAC</b>	Military Airlift Command
<b>MAF</b>	Mobility Air Force
<b>MAJCOM</b>	major command
<b>MOG</b>	maximum on ground
<b>MOOTW</b>	military operations other than war
<b>MRT</b>	maintenance recovery team
<b>MSC</b>	Military Sealift Command
<b>MSE</b>	mission support element
<b>MSF</b>	mission support forces
<b>MST</b>	mission support team

<b>MTMC</b>	Military Traffic Management Command
<b>NAF</b>	numbered air force
<b>NCA</b>	National Command Authorities
<b>OCONUS</b>	outside continental United States
<b>OPCON</b>	operational control
<b>OPLAN</b>	operation plan
<b>OPORD</b>	operation order
<b>OSA</b>	operational support airlift
<b>PACAF</b>	Pacific Air Forces
<b>PDF</b>	Panamanian Defense Forces
<b>SAAM</b>	special assignment airlift mission
<b>SAM</b>	special air mission
<b>SECDEF</b>	Secretary of Defense
<b>SIOP</b>	single integrated operational plan
<b>SOF</b>	special operations forces
<b>TACC</b>	Tanker/Airlift Control Center
<b>TACON</b>	tactical control
<b>TALCE</b>	tanker airlift control element
<b>TPFDD</b>	time-phased force and deployment data
<b>TPFDL</b>	time-phased force and deployment list
<b>US</b>	United States
<b>USAFE</b>	United States Air Forces in Europe
<b>USCINCEUR</b>	Commander in Chief, US European Command
<b>USCINCPAC</b>	Commander in Chief, US Pacific Command
<b>USCINCTrans</b>	Commander in Chief, US Transportation Command
<b>USEUCOM</b>	US European Command
<b>USTRANSCOM</b>	US Transportation Command

## Definitions

**administrative control.** Direction or exercise of authority over subordinate or other organizations in respect to administration and support, including organization of Service forces, control of resources and equipment, personnel management, unit logistics, individual and unit training, readiness, mobilization, demobilization, discipline, and other matters not included in the operational missions of the subordinate or other organizations. Also called **ADCON**. (Joint Pub 1-02)

**aerospace power.** The use of lethal and nonlethal means by aerospace forces to achieve strategic, operational, and tactical objectives. (AFDD 2)

**aeromedical evacuation.** The movement of patients under medical supervision to and between medical treatment facilities by air transportation. (Joint Pub 1-02)

**air campaign.** A connected series of operations conducted by air forces to achieve joint force objectives within a given time and area. (AFDD 2)

**air interdiction.** Air operations conducted to destroy, neutralize, or delay the enemy's military potential before it can be brought to bear effectively against friendly forces at such distance from friendly forces that detailed integration of each air mission with the fire and movement of friendly forces is not required. (Joint Pub 1-02)

**airlift.** Operations to transport and deliver forces and materiel through the air in support of strategic, operational, or tactical objectives. (AFDD 1)

**air refueling.** The capability to refuel aircraft in flight, which extends presence, increases range, and allows air forces to bypass areas of potential trouble. (AFDD 1)

**air superiority.** That degree of dominance in the air battle of one force over another which permits the conduct of operations by the former and its related land, sea and air forces at a given time and place without prohibitive interference by the opposing force. (Joint Pub 1-02)

**air supremacy.** That degree of air superiority wherein the opposing air force is incapable of effective interference. (Joint Pub 1-02)

**area of responsibility.** 1. The geographical area associated with a combatant command within which a combatant commander has authority to plan and conduct operations. Also called **AOR**. (Joint Pub 1-02)

**assign.** 1. To place units or personnel in an organization where such placement is relatively permanent, and/or where such organization controls and administers the units or personnel for the primary function, or greater portion of the functions, of the unit or personnel. 2. To detail individuals to specific duties or functions where such duties or functions are primary and/or relatively permanent. See also **attach**. (Joint Pub 1-02)

**attach.** 1. The placement of units or personnel in an organization where such placement is relatively temporary. 2. The detailing of individuals to specific functions where such functions are secondary or relatively temporary, e.g., attached for quarters and rations; attached for flying duty. See also **assign**. (Joint Pub 1-02)

**channel airlift.** Common-user airlift service provided on a scheduled basis between two points. There are two types of channel airlift. A *requirements channel* serves two or more points on a scheduled basis depending upon the volume of traffic; a *frequency channel* is timed based and serves two or more points at regular intervals. (Joint Pub 1-02)

**combatant command.** (Command Authority) The nontransferable command authority established by title 10, ("Armed Forces"), United States Code, section 164, exercised only by commanders of unified or specified combatant commands unless otherwise directed by the President or the Secretary of Defense. Combatant command (command authority) cannot be delegated and is the authority of a combatant commander to perform those functions of command over assigned forces involving organizing and employing commands and forces, assigning tasks, designating objectives, and giving authoritative direction over all aspects of military operations, joint training, and logistics necessary to accomplish the missions assigned to the command. Combatant command (command authority) should be exercised through the commanders of subordinate organizations. Normally this authority is exercised through subordinate joint force commanders and Service and/or functional component commanders. Combatant command (command authority) provides full authority to organize and employ commands and forces as the combatant commander considers necessary to accomplish assigned missions. Operational control is inherent in combatant command (command authority). Also called **COCOM**. (Joint Pub 1-02)

**command and control.** The exercise of authority and direction by a properly designated commander over assigned and attached forces in the accomplishment of the mission. Command and control functions are performed through an arrangement of personnel, equipment, communications, facilities, and procedures employed by a commander in planning, directing, coordinating, and controlling forces and operations in the accomplishment of the mission. Also called **C2**. (Joint Pub 1-02)

**coordinating authority.** A commander or individual assigned responsibility for coordinating specific functions or activities involving forces of two or more Military Departments or two or more forces of the same Service. The commander or individual has the authority to require consultation between the agencies involved, but does not have the authority to compel agreement. In the event that essential agreement cannot be obtained, the matter shall be referred to the appointing authority. Coordinating authority is a consultation relationship, not an authority through which command may be exercised. Coordinating authority is more applicable to planning and similar activities than to operations. (Joint Pub 1-02)

**core competency.** The basic areas of expertise or the specialties that the Air Force brings to any activity across the spectrum of military operations whether as a single Service or in conjunction with the core competencies of other services in joint operations. Core competencies represent both air and space power application theory and physical capability represented in a well-trained and equipped air force. (AFDD 1)

**doctrine.** Fundamental principles by which the military forces or elements thereof guide their actions in support of national objectives. It is authoritative but requires judgment in application. (Joint Pub 1-02)

**global transportation network.** The automated support necessary to enable USTRANSCOM and its components to provide global transportation management. The global transportation network provides the integrated transportation data and systems necessary to accomplish global transportation planning, command and control, in-transit visibility across the range of military operations. Also called **GTN**. (Joint Pub 1-02)

**information.** 1. Facts, data, or instructions in any medium or form. 2. The meaning that a human assigns to data by means of the known conventions used in their representation. (Joint Pub 1-02)

**information superiority.** The capability to collect, process, and disseminate an uninterrupted flow of information while exploiting or denying and adversary's ability to do the same. See also **information; information operations**. (Joint Pub 1-02). [*That degree of dominance in the information domain that allows friendly forces the ability to collect, control, exploit, and defend information without effective opposition.*] {Italicized definition in brackets applies only to the Air Force and is offered for clarity.} (AFDD 2)



**information warfare.** Actions taken to achieve information superiority by affecting adversary information, information-based processes, information systems, and computer-based networks while leveraging and defending one's own information, information-based processes, information systems, and computer-based networks. Also called **IW**. (Joint Pub 1-02) [*Information operations conducted to defend one's own information and information systems, or attacking and affecting an adversary's information and information systems.*] {Italicized definition in brackets applies only to the Air Force and is offered for clarity.} (AFDD 2)

**intelligence.** 1. The product resulting from the collection, processing, integration, analysis, evaluation, and interpretation of available information concerning foreign countries or areas. 2. Information and knowledge about an adversary obtained through observation, investigation, analysis, or understanding. (Joint Pub 1-02)

**intertheater airlift.** Airlift that operates between the continental United States and a theater or between theaters. [*Formerly called strategic airlift*] (AFDD 1)

**in-transit visibility.** The ability to track the identity, status, and location of Department of Defense units, and non-unit cargo (excluding bulk petroleum, oils, and lubricants) and passengers; medical patients; and personal property from origin to consignee or destination across the range of military operations. See also **global transportation network**. (Joint Pub 1-02)

**intratheater airlift.** The common-user air transportation and delivery of personnel and equipment within a CINC's AOR. [*Formerly called theater airlift*] (AFDD 1)

**joint airborne/air transportability training.** A CJCS-directed program to provide basic airborne and proficiency/continuation training for air-drop, assault airland, aircraft static loading, and air refueling conducted in a joint environment. Also called **JA/ATT**. (Air Mobility Master Plan [AMMP])

**joint doctrine.** Fundamental principles that guide the employment of forces of two or more Services in coordinated action toward a common objective. It will be promulgated by the Chairman of the Joint Chiefs of Staff, in coordination with the combatant commands, Services, and Joint Staff. See also **doctrine**. (Joint Pub 1-02)

**joint force.** A general term applied to a force composed of significant elements, assigned or attached, of two or more Military Departments, operating under a single joint force commander. See also **joint force commander.** (Joint Pub 1-02)

**joint force air component commander.** The joint force air component commander derives authority from the joint force commander who has the authority to exercise operational control, assign missions, direct coordination among subordinate commanders, redirect and organize forces to ensure unity of effort in the accomplishment of the overall mission. The joint force commander will normally designate a joint force air component commander. The joint force air component commander's responsibilities will be assigned by the joint force commander (normally these would include, but not be limited to, planning, coordination, allocation, and tasking based on the joint force commander's apportionment decision). Using the joint force commander's guidance and authority, and in coordination with other Service component commanders and other assigned or supporting commanders, the joint force air component commander will recommend to the joint force commander apportionment of air sorties to various missions or geographic areas. Also called **JFACC.** See also **joint force commander.** (Joint Pub 1-02)

**joint force commander.** A general term applied to a combatant commander, subunified commander, or joint task force commander authorized to exercise combatant command (command authority) or operational control over a joint force. Also called **JFC.** See also **joint force.** (Joint Pub 1-02)

**joint task force.** A joint force that is constituted and so designated by the Secretary of Defense, a combatant commander, a subunified commander, or an existing joint task force commander. Also called **JTF.** (Joint Pub 1-02)

**logistics.** The science of planning and carrying out the movement and maintenance of forces. In its most comprehensive sense, those aspects of military operations which deal with: (a) design and development, acquisition, storage, movement, distribution, maintenance, evacuation, and disposition of materiel; (b) movement, evacuation, and hospitalization of personnel; (c) acquisition or construction, maintenance, operation, and disposition of facilities; and (d) acquisition or furnishing of services. (Joint Pub 1-02)

**military strategy.** The art and science of employing the armed forces of a nation to secure the objectives of national policy by the application of force or the threat of force. (Joint Pub 1-02)

**National Command Authorities.** The President and the Secretary of Defense or their duly deputized alternates or successors. Also called **NCA**. (Joint Pub 1-02)

**national strategy.** The art and science of developing and using the political, economic, and psychological powers of a nation, together with its armed forces, during peace and war, to secure national objectives. (Joint Pub 1-02)

**operational control.** Transferable command authority that may be exercised by commanders at any echelon at or below the level of combatant command. Operational control is inherent in combatant command (command authority). Operational control may be delegated and is the authority to perform those functions of command over subordinate forces involving organizing and employing commands and forces, assigning tasks, designating objectives, and giving authoritative direction necessary to accomplish the mission. Operational control includes authoritative direction over all aspects of military operations and joint training necessary to accomplish missions assigned to the command. Operational control should be exercised through the commanders of subordinate organizations. Normally this authority is exercised through subordinate joint force commanders and Service and/or functional component commanders. Operational control normally provides full authority to organize commands and forces and to employ those forces, as the commander in operational control considers necessary to accomplish assigned missions. Operational control does not, in and of itself, include authoritative direction for logistics or matters of administration, discipline, internal organization, or unit training. Also called **OPCON**. (Joint Pub 1-02)

**operational level of war.** The level of war at which campaigns and major operations are planned, conducted, and sustained to accomplish strategic objectives within theaters or areas of operations. Activities at this level link tactics and strategy by establishing operational objectives needed to accomplish the strategic objectives, sequencing events to achieve the operational objectives, initiating actions, and applying resources to bring about and sustain these events. These activities imply a broader dimension of time or space than do tactics; they ensure the logistic and administrative support of tactical forces, and provide the means

by which tactical successes are exploited to achieve strategic objectives. (Joint Pub 1-02)

**operational support airlift.** OSA missions are movements of high-priority passengers and cargo with time, place or mission-sensitive requirements. OSA aircraft are those fixed-wing aircraft acquired and/or retained exclusively for OSA missions, as well as any other Department of Defense-owned or controlled aircraft, fixed- or rotary-wing, used for OSA purposes. Also called OSA. (Joint Pub 1-02) The organic airlift assets assigned either to an individual combatant commander, and referred to as “CINC support airlift” (CSA), or to the secretaries of the Military Departments, and called “Service Support Airlift” (SSA). Those aircraft assigned to the combatant commanders perform airlift missions in direct support of combat units assigned to the CINCs. SSA aircraft satisfy service secretarial requirements supporting the function of preparing forces for war. (Air Mobility Master Plan [AMMP])

**reconnaissance.** A mission undertaken to obtain, by visual observation or other detection methods, information about the activities and resources of an enemy or potential enemy, or to secure data concerning the meteorological, hydrographic, or geographic characteristics of a particular area. (Joint Pub 1-02)

**special air mission (SAM).** A mission that uses specially configured aircraft with extensive air-to-ground communications that provides support to the President and Vice President of the United States, Cabinet and congressional delegations, and other senior statesmen. (Air Mobility Master Plan [AMMP])

**special assignment airlift requirements.** (DOD) Airlift requirements, including CJCS-directed or coordinated exercises, that require special consideration because of the number of passengers involved, weight or size of cargo, urgency of movement, sensitivity, or other valid factors that preclude the use of channel airlift. (Joint Pub 1-02) A mission operated by AMC (other than the 89<sup>th</sup> Military Airlift Wing) to satisfy a requirement needing special pickup/delivery at locations other than those established within the approved channel structure or, to satisfy a requirement needing special consideration because of the number of passengers, weight or size of cargo, urgency, or sensitivity of movement, or other special factors. (Air Mobility Master Plan [AMMP])

**special operations.** Operations conducted by specially organized, trained, and equipped military and paramilitary forces to achieve military, political, economic, or informational objectives by unconventional military means in hostile, denied, or politically sensitive areas. These operations are conducted during peacetime competition, conflict, and war, independently or in coordination with operations of conventional, nonspecial operations forces. Political-military considerations frequently shape special operations, requiring clandestine, covert, or low visibility techniques, and oversight at the national level. Special operations differ from conventional operations in degree of physical and political risk, operational techniques, mode of employment, independence from friendly support, and dependence on detailed operational intelligence and indigenous assets. Also called **SO**. (Joint Pub 1-02)

**strategic attack.** Military action carried out against an enemy's center(s) of gravity or other vital target sets including command elements, war production assets, and key supporting infrastructure in order to effect a level of destruction and disintegration of the enemy's military capacity to the point where the enemy no longer retains the ability or will to wage war or carry out aggressive activity. (AFDD 1)

**strategic level of war.** The level of war at which a nation, often as a member of a group of nations, determines national or multinational (alliance or coalition) security objectives and guidance, and develops and uses national resources to accomplish those objectives. Activities at this level establish national and multinational military objectives; sequence initiatives; define limits and assess risks for the use of military and other instruments of national power; develop global plans or theater war plans to achieve these objectives; and provide military forces and other capabilities in accordance with strategic plans. (Joint Pub 1-02)

**strategy.** The art and science of developing and using political, economic, psychological, and military forces as necessary during peace and war, to afford the maximum support to policies, in order to increase the probabilities and favorable consequences of victory and to lessen the chances of defeat. (Joint Pub 1-02)

**Supported Commander.** The commander having primary responsibility for all aspects of a task assigned by the Joint Strategic Capabilities Plan or other joint operation planning authority. In the context of joint operation planning, this term refers to the commander who prepares operation

plans or operation orders in response to requirements of the Chairman of the Joint Chiefs of Staff. (Joint Pub 1-02)

**supporting commander.** A commander who provides augmentation forces or other support to a supported commander or who develops a supporting plan. Includes the designated combatant commands and Defense agencies as appropriate. (Joint Pub 1-02)

**sustainment.** The provision of personnel, logistic, and other support required to maintain and prolong operations or combat until successful accomplishment or revision of the mission or of the national objective. (Joint Pub 1-02) The Service's ability to maintain operations once forces are engaged. (Air Force Executive Guidance, Jan 96)

**surveillance.** The systematic observation of aerospace, surface or sub-surface areas, places, persons, or things, by visual, aural, electronic, photographic, or other means. (Joint Pub 1-02)

**tactical control.** Command authority over assigned or attached forces or commands, or military capability or forces made available for tasking, that is limited to the detailed and, usually, local direction and control of movements or maneuvers necessary to accomplish missions or tasks assigned. Tactical control is inherent in operational control. Tactical control may be delegated to, and exercised at any level at or below the level of combatant command. Also called **TACON**. (Joint Pub 1-02)

**tactical level of war.** The level of war at which battles and engagements are planned and executed to accomplish military objectives assigned to tactical units or task forces. Activities at this level focus on the ordered arrangement and maneuver of combat elements in relation to each other and to the enemy to achieve combat objectives. (Joint Pub 1-02)

**tactics.** 1. The employment of units in combat. 2. The ordered arrangement and maneuver of units in relation to each other and/or to the enemy in order to use their full potentialities. (Joint Pub 1-02)

**Tanker/Airlift Control Elements (TALCEs).** A mobile command and control organization deployed to support strategic and theater air mobility operations at fixed, en route, and deployed locations where air mobility operational support is nonexistent or insufficient. The Tanker Airlift Control Element provides on-site management of air mobility air field operations to include command and control, communications, aerial port ser

vices, maintenance, security, transportation, weather, intelligence, and other support functions, as necessary. The Tanker Airlift Control Element is composed of mission support elements from various units and deploys in support of peacetime, contingency, and emergency relief operations on both planned and “no notice” basis. Also called TALCE. A TALCE is a mobile C2 organization responsible for providing continuous on-site management of mobility airfield operations. It is a provisional organization composed of various mission support elements (MSE). They deploy to provide mission support when command and control, mission reporting, or required support functions are insufficient. TALCEs provide command and control, communications, aerial port, logistics, security, weather and intelligence services, or other MSEs as deemed necessary. These organizations are sized based upon projected requirements. (Air Mobility Master Plan [AMMP])

**theater.** The geographical area outside the continental United States for which a commander of a combatant command has been assigned responsibility. (Joint Pub 1-02)

**war.** Open and often prolonged conflict between nations (or organized groups within nations) to achieve national objectives. (AFDD 1)