Cover Sheet for Air Force Doctrine Document (AFDD) 3-17, *Air Mobility Operations*

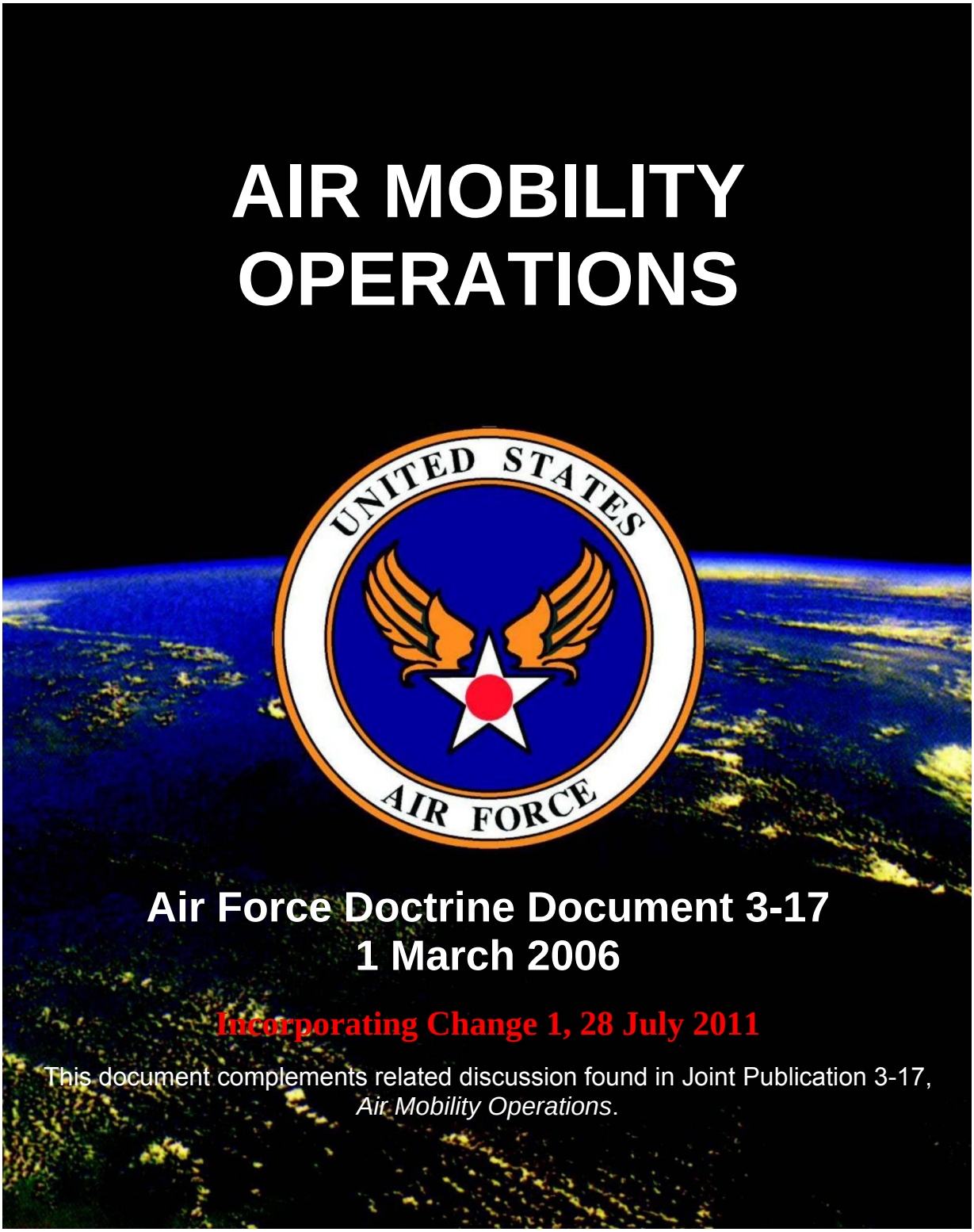
OPR: LeMay Center/DD

28 July 2011

AFDD numbering has changed to correspond with the joint doctrine publication numbering architecture (the AFDD titles remain unchanged until the doctrine is revised). Any AFDD citations within the documents will list the old AFDD numbers until the doctrine is revised. The changed numbers follow:

OLD	**NEW**	**TITLE**
AFDD 2-1	changed to AFDD 3-1	*Air Warfare*
AFDD 2-1.1	changed to AFDD 3-01	*Counterair Operations*
AFDD 2-1.2	changed to AFDD 3-70	*Strategic Attack*
AFDD 2-1.3	changed to AFDD 3-03	*Counterland Operations*
AFDD 2-1.4	changed to AFDD 3-04	*Countersea Operations*
AFDD 2-1.6	changed to AFDD 3-50	*Personnel Recovery Operations*
AFDD 2-1.7	changed to AFDD 3-52	*Airspace Control*
AFDD 2-1.8	changed to AFDD 3-40	*Counter-CBRN*
AFDD 2-1.9	changed to AFDD 3-60	*Targeting*
AFDD 2-10	changed to AFDD 3-27	*Homeland Operations*
AFDD 2-12	changed to AFDD 3-72	*Nuclear Operations*
AFDD 2-2	changed to AFDD 3-14	*Space Operations*
AFDD 2-2.1	changed to AFDD 3-14.1	*Counterspace Operations*
AFDD 2-3	changed to AFDD 3-24	*Irregular Warfare*
AFDD 2-3.1	changed to AFDD 3-22	*Foreign Internal Defense*
AFDD 2-4	changed to AFDD 4-0	*Combat Support*
AFDD 2-4.1	changed to AFDD 3-10	*Force Protection*
AFDD 2-4.2	changed to AFDD 4-02	*Health Services*
AFDD 2-4.4	changed to AFDD 4-11	*Bases, Infrastructure, and Facilities* [Rescinded]
AFDD 2-4.5	changed to AFDD 1-04	*Legal Support*
AFDD 2-5	changed to AFDD 3-13	*Information Operations*
AFDD 2-5.1	changed to AFDD 3-13.1	*Electronic Warfare*
AFDD 2-5.3	changed to AFDD 3-61	*Public Affairs Operations*
AFDD 2-6	changed to AFDD 3-17	*Air Mobility Operations*
AFDD 2-7	changed to AFDD 3-05	*Special Operations*
AFDD 2-8	changed to AFDD 6-0	*Command and Control*
AFDD 2-9	changed to AFDD 2-0	*ISR Operations*
AFDD 2-9.1	changed to AFDD 3-59	*Weather Operations*

AIR MOBILITY OPERATIONS



Air Force Doctrine Document 3-17
1 March 2006

Incorporating Change 1, 28 July 2011

This document complements related discussion found in Joint Publication 3-17, *Air Mobility Operations*.

BY ORDER OF THE
SECRETARY OF THE AIR FORCE

AIR FORCE DOCTRINE DOCUMENT 3-17
1 MARCH 2006
INCORPORATING CHANGE 1, 28 JULY 2011

SUMMARY OF CHANGES

This Interim change to Air Force Doctrine Document (AFDD) 2-6 changes the cover to AFDD 3-17, *Air Mobility Operations* to reflect revised AFI 10-1301, Air Force Doctrine (9 August 2010). AFDD numbering has changed to correspond with the joint doctrine publication numbering architecture. AFDD titles and content remain unchanged until updated in the next full revision. A margin bar indicates newly revised material.

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FOREWORD

The US Air Force provides unique warfighting capabilities that are essential to joint operations. Foremost among these capabilities is the ability to rapidly focus American combat power and life saving resources anywhere on the planet. Frequently, and especially in the opening stages of a conflict, air and space power may be the main manifestation of combat power we bring to bear against an adversary.

Of these capabilities, the Air Force provides a very singular form of power: the ability to rapidly position and sustain forces at places and times of our choosing. This pivotal capability—air mobility—is the essential ingredient for modern US expeditionary operations and supports joint force commander-desired effects to deter, dissuade, or destroy the enemy. Force projection provides for presence, mass and maneuver, surprise, security and economy. It is the sum of an impressive fleet of transport and aerial refueling aircraft, underpinned by a flexible support system, and operated by a specialized cadre of active duty Air Force, Air Force Reserve, Air National Guard, and Air Force civilian personnel. While other forms of American military power have some degree of inherent mobility, the scale of flexibility and responsiveness of the Air Force's air mobility forces is singular in the history of world conflict.

We must understand and apply our doctrine in order to succeed in current and future challenges. To do this smoothly and consistently, our planning and employment must be clearly understood and, most importantly, repeatable. To make that happen, we have captured our best practices in doctrine documents such as this one. We must learn and practice our own doctrine. We must understand what it means to be an Airman and be able to articulate what air and space power, and especially air mobility, can bring to the joint fight. Every Airman should read, discuss, and practice doctrine, and to ensure that it adapts as necessary to remain applicable in our changing environment.

T. MICHAEL MOSELEY
General, USAF
Chief of Staff

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INTRODUCTION

PURPOSE

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

APPLICATION

This AFDD applies to the Total Force: all Air Force military and civilian personnel, including regular, Air Force Reserve Command, and Air National Guard units and members.

The doctrine in this document is authoritative but not directive. Therefore, commanders need to consider the contents of this AFDD and the particular situation when accomplishing their missions. Airmen should read it, discuss it, and practice it.

SCOPE

This document discusses air mobility as an integral part of air and space power, as employed throughout the range of military operations. 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 should be employed across the range of air and space operations within joint operations.

COMAFFOR / JFACC / CFACC
A note on terminology

One of the cornerstones of Air Force doctrine is that “the US Air Force prefers - and in fact, plans and trains - to employ through a commander, Air Force forces (COMAFFOR) who is also dual-hatted as a joint force air and space component commander (JFACC).” (AFDD 1)

To simplify the use of nomenclature, Air Force doctrine documents will assume the COMAFFOR is dual-hatted as the JFACC unless specifically stated otherwise. The term “COMAFFOR” refers to the Air Force Service component commander while the term ”JFACC” refers to the joint component-level operational commander.

While both joint and Air Force doctrine state that one individual will normally be dual-hatted as COMAFFOR and JFACC, the two responsibilities are different, and should be executed through different staffs.

Normally, the COMAFFOR function executes operational control/ administrative control of assigned and attached Air Force forces through a Service A-staff while the JFACC function executes tactical control of joint air and space component forces through an air and space operations center (AOC).

When multinational operations are involved, the JFACC becomes a combined force air and space component commander (CFACC). Likewise, the air and space operations center, though commonly referred to as an AOC, in joint or combined operations is correctly known as a JAOC or CAOC.

FOUNDATIONAL DOCTRINE STATEMENTS

Foundational doctrine statements are the basic principles and beliefs upon which Air Force Doctrine Document (AFDD) 2-6 was built. Other information in AFDD 2-6 expands on or supports these statements.

- Air mobility forces provide global reach, power, and vigilance necessary to achieve US national objectives. (Page 1)

- Effective integration of intertheater and intratheater air mobility operations is critical to efficient and timely air mobility support to the warfighter. (Page 2)

- The success of worldwide air mobility operations depends on the combined efforts of regular forces, Air National Guard forces, Air Force Reserve Command forces, Air Force civilians, and civil air transportation partners. (Page 2)

- Air mobility enables joint force maneuver. (Page 5)

- Air mobility enables commanders to simultaneously exploit mass, maneuver, and surprise (flexibility), thereby influencing effects at the strategic, operational, or tactical levels of war (versatility), often at the same time. (Page 7)

- For air mobility forces performing primarily intertheater operations the preferred command relationship between global/functional and regional/geographic organizations is support. (Page 12)

- Because of air mobility's global responsibility, multiple competing common users, and the necessity to prioritize and apportion limited resources, centralized control is crucial. (Page 13)

- The director of air mobility forces (DIRMOBFOR-Air) is the commander, Air Force forces (COMAFFOR) designated coordinating authority with all agencies affecting the command's air mobility operations. The DIRMOBFOR-Air is also the advisor on how best to effectively and efficiently use air mobility assets. He or she is normally assigned or attached to the joint force air and space component commander's (JFACC's) special staff to assist air mobility operations and should be given appropriate liaison authority. (Page 19)

- The DIRMOBFOR-Air provides, on behalf of the COMAFFOR, guidance to the air mobility division (AMD) on air mobility matters, but such guidance should be responsive to the timing and tempo of operations managed by the air and space operations center (AOC) director. The AOC AMD remains under the control of the AOC director who manages the execution of operations for the COMAFFOR. (Page 19)

- The DIRMOBFOR-Air should be collocated in the AOC to facilitate their close working relationship with the AMD. (Page 23)

- ✪ Airland delivery, as opposed to airdrop, is the preferred method of delivery when conditions permit, because it is the more efficient, safer, and less expensive way to deliver personnel and cargo. (Page 37)

- ✪ Air refueling significantly expands the force options available to a commander by increasing the range, payload, persistence, and flexibility of other aircraft. (Page 44)

- ✪ Command and control of air mobility aircraft performing multiple role missions on the same sortie must be vested in one authority, normally the COMAFFOR. (Page 49)

- ✪ Successful employment of the airlift and air refueling force is contingent upon establishing and maintaining an air mobility support force enabled by the master capabilities provided by agile combat support. (Page 56)

- ✪ The prepositioning of the global air mobility support system (GAMSS) forces whether at fixed locations with robust infrastructure or at en route locations with little infrastructure, supporting sustained airlift or aerial refueling operations, must be accomplished ahead of any combat force deployment (whether Air Force or sister Service). (Page 56)

- ✪ The core functions provided by GAMSS are command and control, aerial port, and maintenance. While these fixed and deployable capabilities are robust, they are designed to be temporary in nature, with a planned redeployment or replacement in 30-45 days. (Page 57)

CHAPTER ONE

AN INTRODUCTION TO AIR MOBILITY

If you look at the mobility mission from a simplistic standpoint…our mission is three-fold: A, to take the troops to the fight; B, to support them while they are at the fight; C, to bring them home when the fight is over.

—General Charles T. Robertson
Commander, US Transportation Command,
1998-2001

GENERAL

Air mobility forces provide global reach, power, and vigilance necessary to achieve US national objectives. The US military is an expeditionary force, called upon by national leaders to perform their functions around the globe either directly accomplishing national objectives or supporting other agencies in that pursuit. All Services and many other government agencies rely upon Air Force air mobility forces to deploy, sustain, and redeploy them in these endeavors. Air mobility is the fastest and most flexible of the transportation modes, and is therefore in high demand. Quick and decisive responses can defuse crises before they escalate, deter aggression, and in some cases defeat an adversary before he can solidify his gains. Rapid global mobility is the key to maintaining global presence and a timely response capability. The synergistic combination of airlift, air refueling, and air mobility support represents one of the great characteristics differentiating the Air Force from the air arms of other Services and from the capabilities of any other nations' air forces. This capability was founded on the principles of war and tenets of air and space power, lending credibility and strength to its development. Rapid global mobility, especially air mobility, is the backbone of expeditionary operations. It enables the prompt application of combat power and plays a crucial role in supporting US national strategies. Collectively, the air mobility force represents a capability unmatched anywhere in the world.

Air mobility doctrine represents an accumulation of best practices from World War II through the most recent conflicts, including Operation IRAQI FREEDOM. This doctrine embodies the growth of air mobility operations into a seamless, integrated whole encompassing a global functional role, daily supporting all the geographic combatant commands; as well as the more focused support to regional joint and combined commands engaged in high intensity operations. The components of the air mobility force—airlift, air refueling, and air mobility support—work synergistically with each other and with other combat forces to enable and enhance the capability of the Air Force and the US military. Air mobility forces are employed across the range of military

operations. They are drawn from three sources: active duty, air reserve components (ARC), and civilian augmentation. These forces are organized and commanded through two integrated command and control systems: one globally oriented to support all combatant commanders and another system tailored to the demands of each combatant commander and associated commander, Air Force forces (COMAFFOR) or joint force air and space component commander (JFACC), if the COMAFFOR is designated the JFACC. Airlift (including aeromedical evacuation), air refueling, and air mobility support forces each bring their own unique contributions to the Air Force and the joint environment. Commanders and planners need to understand the unique capabilities of these forces to employ them effectively and efficiently. **Effective integration of intertheater and intratheater air mobility operations is critical to efficient and timely air mobility support to the warfighter.** Together, these air mobility elements comprise a truly unique capability for the Air Force.

THE AIR MOBILITY FORCE

Airlift and air refueling are two of the Air Force's 17 operational air and space power functions. When airlift and air refueling are combined with the global air mobility support system (GAMSS), they form a composite, synergistic power projection capability for the United States. The Air Force achieves maximum effectiveness and efficiency through sound blending and leveraging of all three of these components. Air mobility support provides the foundation. Airlift and air refueling can operate independently of one another but often enhance each other's capabilities, though neither can operate without the global air mobility support element.

The success of worldwide air mobility operations depends on the combined efforts of regular forces, Air National Guard (ANG) forces, Air Force Reserve Command (AFRC) forces, Air Force civilians, and civil air transportation partners. Collectively, they support operations across the spectrum, from humanitarian and disaster relief missions to conventional, and, if necessary, nuclear war. Major portions of the nation's total air mobility capability lies outside the active duty Air Force. Consequently, air mobility operations depend significantly on Guard, Reserve, and Civil Reserve Air Fleet (CRAF) assets to meet both peace and wartime taskings. Although Air Mobility Command (AMC) is assigned and controls the majority of air mobility forces, US Air Forces in Europe (USAFE), Pacific Air Forces (PACAF) and US Central Command Air Forces (USCENTAF) are also assigned some air mobility forces.

Active Duty Forces

The active duty forces comprise approximately half of the capability of the air mobility force. These aircraft, aircrews, support personnel, and equipment respond rapidly to the needs of the Air Force and the nation. The active duty force responds rapidly to meet the needs of the geographic combatant commanders in support of national objectives. They are usually the first units to begin moving in any contingency or disaster since mobility forces must position initially to enable the deployment of the responding forces. In times of greater need the active duty Air Force calls on the Air Reserve Component for augmentation.

Air Reserve Component (ARC)

The Air Force Reserve Command and the Air National Guard together comprise the Air Reserve Component. Their air mobility forces form an integral part of the air mobility force and conduct operations supporting national taskings every day. Peacetime access to ARC forces is provided through a mechanism of volunteerism. ARC individuals volunteer to serve during contingencies to supplement active duty forces for a specified period of time. During crises, volunteers and activated ARC units augment the active duty force, providing approximately half of the Air Force's air refueling, airlift, and air mobility support forces, and over eighty percent of aeromedical evacuation forces. When air mobility requirements exceed capability available through volunteerism, activation of ARC units may be required.

ARC assets comprise approximately half of the air mobility force

Civil Reserve Air Fleet

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, major exercises, and regional contingencies, CRAF carriers are contracted to fly scheduled passenger, patient/casualty, cargo channel missions, special assignment airlift missions (SAAMs), and charter missions. A number of CRAF aircraft are specifically modified to support aeromedical evacuation missions. This overall support gives AMC the capacity to meet both routine scheduled and surge commitments flexibly and simultaneously.

The commander, United States Transportation Command (CDRUSTRANSCOM), with approval of the Secretary of Defense (SecDef), is the activation authority for each stage of CRAF. Airframes pledged to the CRAF are activated in three progressive stages with each stage providing additional lift capacity:

- Stage I—Committed Expansion. Used for a minor regional contingency or other situation when AMC organic airlift resources cannot meet both deployment and other airlift requirements simultaneously.

- Stage II—Defense Airlift Emergency. Supports a single major theater war or other major contingency.

- Stage III—National Emergency. Used for multiple major theater wars or other national emergencies requiring mobilization of all Department of Defense (DOD) resources and utilizing the total CRAF airlift capability as required to support US military forces worldwide.

The DOD tasks the minimum percentage of assets in each stage necessary to fulfill national transportation objectives. During activation, the air carriers continue to operate and maintain the aircraft and support the crew with organic resources while AMC, through the 18th Air Force (18 AF) tanker airlift control center (18 AF TACC), exercises control of the missions. Upon activation, USTRANSCOM and the 18AF/TACC work with the CRAF to ensure integration with military airlift operations.

CRAF in Operations DESERT SHIELD and STORM

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, United States Transportation Command activated stage I of the CRAF guaranteeing USTRANSCOM the use of 38 additional aircraft. These assets were used to preposition 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.

AMC Historian

AIR MOBILITY AND THE PRINCIPLES OF WAR

Air mobility's strength lies in its application of five principles of war—mass, maneuver, economy of force, security and surprise —to the application of air and space power for the United States. It exploits and enhances the speed, range, and flexibility inherent in all air and space power. Additionally, the fundamental tenets of centralized control and decentralized execution, flexibility and versatility, synergistic effects, concentration, and priority have a unique impact on air mobility. Together, the principles of war and basic tenets help translate doctrinal beliefs into successful operational concepts.

Mass

Air mobility concentrates the effects of combat power, both direct and indirect, at the most advantageous place and time. Rapid global mobility (as provided by the air assets of the Defense Transportation System [DTS]) also ensures that US forces can have superiority of materiel when executing operations. Air mobility operations allow

cargo and passengers to be delivered precisely where and when they are needed, thereby increasing the concentration of military effects. The ability to deploy even the Army's heaviest mechanized units and helicopters to the combat zone via airlift aircraft provides combatant commanders with an edge in mass over their opponent. Air refueling contributes to mass by allowing larger strike packages, launched from multiple bases, to marshal and then push forward with full fuel tanks. This enables longer ranges as well. These same packages have the capability to mass but also have the ability to loiter and maintain a presence, or provide the capability of persistence, for a far greater time then ever before.

Maneuver

Principle of war (mass) operationalized

Air mobility enables joint force maneuver. For example, the ability to airdrop a brigade of troops anywhere in the world to seize an objective is unmatched by any other nation. The robust air mobility force keeps potential enemies off balance through its ability to rapidly reposition forces, thereby allowing US forces to leverage its maneuver advantage. Air mobility is also the key to exploiting successes and preserving freedom of action by adjusting lines of supply as necessary. As an example, during Operation DESERT STORM the ground component's line of supply shifted repeatedly to support the advance of the "left hook" forces, and air mobility assets facilitated and supported that shifting logistical tail. Similarly, the rapid advance of US and allied ground forces in Operation IRAQI FREEDOM (OIF) were facilitated by continuous, flexible, shifting resupply of those forces through the use of opportune austere airfields along the route of advance. Air refueling allows maneuver, as well, by allowing combat aircraft the ability to shift targets to the demand of battle. By enabling maneuver with air refueling the US is now able to exploit weaknesses or take advantage of opportunities presented.

Economy of Force

The unique mix of air mobility assets, and the synergistic combination of airlift and air refueling aircraft, combines to allow the tailoring of mobility forces to respond quickly and efficiently to the diverse needs of geographic combatant commanders and US government agencies. The widely varied capabilities of air mobility aircraft (i.e., outsized airland delivery, boom or drogue refueling, or even CRAF transports) and air mobility support offer planners the chance to create efficient operations**.** Effectiveness, however, should not be sacrificed for efficiency. Joint commanders should get what they need when they need it. Air Force Doctrine Document (AFDD) 1, *Air Force Basic Doctrine*, describes the application of economy of force as allocating minimum essential resources to secondary efforts. Commanders at the operational level must not degrade

airlift effects through inefficient use of essential airlift resources. Continuous operational assessment that links operational objectives to airlift tactical tasks is the key to ensuring economy of force. Nevertheless, economy of force in air mobility has a global impact. USTRANSCOM and its air component support all Services' and government agencies' operational requirements simultaneously with a finite force. For this reason economy of force in planning and execution is an essential consideration.

Security and Surprise

Security may be obtained by staying beyond the enemy's reach. Air and space forces are uniquely suited to capitalize on this through their global capabilities. Not only can they reach and strike at extended range, but they also can distribute data and analysis as well as command and control across a worldwide span.

Air and space forces can enhance and empower surface forces to achieve surprise. The rapid global reach of airpower also allows surface forces to reach foreign destinations quickly, thus seizing the initiative through surprise.

AIR MOBILITY AND TENETS OF AIR AND SPACE POWER

Centralized Control and Decentralized Execution

Centralized control allows commanders to concentrate on those priorities that lead to victory while decentralized execution maximizes initiative, situational responsiveness, and tactical flexibility. As with all other forms of air and space power, centralized control and decentralized execution of air mobility operations are essential to success.

For global operations, the 18 AF commander (18 AF/CC) executes centralized control of AMC-assigned or attached forces through the 18 AF TACC. The 18 AF/CC responds to air mobility requirements handed down from USTRANSCOM. Below that level, commanders at the wing, group, squadron, mission, and aircraft levels are vested with the authority to execute their assigned tasks. This ensures appropriate span of control and allows lower level commanders to swiftly seize opportunities or react to challenges at their level, thereby improving the effectiveness and efficiency of the entire force.

For a geographic combatant command, the theater COMAFFOR/JFACC exercises control of all assigned or attached air mobility forces through the air mobility operations control center (AMOCC), if one exists, or a designated air and space operations center (AOC). A C/JFACC would use a combined or joint air and space operations center (C/JAOC). Below the COMAFFOR/JFACC the commanders at the wing, group, squadron, mission, and aircraft levels decentralize the execution process.

Global and regional air mobility command and control (C2) systems are integrated to facilitate the control and execution of intertheater (between theaters) and

intratheater (within a theater) operations. Separate yet integrated command structures exercise centralized control over CONUS-assigned and theater assigned/attached air mobility forces. Forces from one command structure sometimes assist in the performance of the other's tasks. The challenge to air mobility commanders is to ensure the effective integration of intertheater and intratheater operations, with both contributing to the achievement of the desired objectives.

Flexibility and Versatility

Air mobility enables commanders to simultaneously exploit mass, maneuver, and surprise (flexibility), thereby influencing effects at the strategic, operational, or tactical levels of war (versatility), often at the same time. Air mobility allows commanders to quickly position, concentrate, or reposition forces wherever and whenever needed. Air mobility forces are critical enablers to creating effects of deterrence, dissuasion, and destruction. The flexibility and versatility of air mobility forces allow the concentration of desired effects at the right time and the right place, and then permit rapid shift of forces when capabilities are needed elsewhere. For example, in a multiple theater scenario, tanker forces might provide primary combat support to strike and intelligence, surveillance, and reconnaissance (ISR) aircraft in one theater, while airlift aircraft are primarily deploying medical units to the second in support of a humanitarian relief operation (HUMRO). When the operations in the first theater are complete the tankers could quickly reposition to perform evacuation flights from the second theater to the continental United States (CONUS).

Synergistic Effects

Air mobility forces, when properly coordinated with other military and civilian activities, produce effects that exceed the contributions of forces employed individually. For example, coordinating a global air mobility support system (GAMSS) base opening team with responsive airlift into an austere region and timely insertion of an air expeditionary wing creates a forward force presence to carry the fight to the enemy. Air mobility synergy with sister-Service and coalition forces was realized during OIF through the Air Force refueling of US Navy and allied fighters and the C-17 airdrop of Army airborne troops to open the northern front. The synergistic application of air mobility and combat forces is unique in its ability to dictate the tempo and direction of the entire effort. The net effect of nearly every air mobility operation is synergy. A robust system is essential for the Air Force to maintain an asymmetric air mobility advantage that produces synergistic effects in Air Force, joint, and combined operations.

Concentration

Concentration allows Airmen to maximize air mobility effects while, at the same time, reduce their exposure to risk. Air mobility forces engaged in intertheater and intratheater combat support missions are the key to employing overwhelming air and space power at the right place and at the right time. Airlift, air refueling, and the accompanying air mobility support forces concentrated on achieving the purposes of the joint force commander (JFC) and COMAFFOR will affect a seamless delivery system for personnel, materiel, and combat power.

Priority

Air mobility forces are a finite but crucial resource to the Air Force and the nation. Consequently, the majority of those assets are centrally controlled by one command (AMC) that can quickly shift those resources wherever the combatant commanders or other government agencies need them most. The competing requirements of each are "racked and stacked" to determine priority and level of effort, and then tasked to support those requirements. Because one of the priorities is often very rapid reaction requiring airlift or refueling, a small portion of those assets is assigned to the theaters. At times the Chairman of the Joint Chiefs of Staff (CJCS) is called upon to decide the relative prioritization among competing geographic command requirements. This senior decision maker involvement ensures air mobility forces are employed against the most critical national objectives. For those forces assigned or attached within a theater, the geographic combatant commander or joint task force commander (JTF/CC) prioritizes the requirements. These commanders must ensure a dynamic process is in place to communicate their logistical priorities to the theater C2 nodes.

INTERTHEATER AND INTRATHEATER OPERATIONS

Intertheater

Intertheater air mobility involves forces operating between the CONUS and a geographic combatant command (theater) or between two geographic combatant commands. These operations require the close coordination between AMC and the theater air components. Intertheater airlift operations are generally global in scope and serve the CONUS-to-theater air transportation needs of the geographic combatant commander. AMC airlift aircraft execute the vast majority of intertheater airlift missions, often with air refueling assistance. Air refueling of bombers from the CONUS to targets around the world (global strike) is another way air mobility contributes to intertheater operations. Command and control of these air mobility assets is normally exercised by 18 AF through the 18 AF TACC**.** The 18 AF TACC plans, coordinates, schedules, tasks, and executes airlift missions worldwide. The 18 AF TACC is the single tasking and execution agency for all activities involving AMC assets and AMC gained assets operating to fulfill CDRUSTRANSCOM-directed requirements.

In most cases, USTRANSCOM-assigned mobility forces perform intertheater operations between two theaters (e.g., a movement from Europe to Southwest Asia, involving movement from the US European Command theater to the US Central Command theater). However, in some situations, theater-assigned air mobility assets are employed by one geographic combatant commander in support of another. Normally, operational control (OPCON) of the air mobility forces involved in intertheater operations is not transferred.

Intratheater

The term "intratheater operations" covers two types of operations, those of a single geographic combatant commander during peacetime or when a joint operational area (JOA) has not been established, and those operations inside a JOA. In both of these situations, operations are normally conducted using forces assigned or attached or made available for tasking to the JFC. The differences are that the intratheater air mobility for a non-JOA command is planned, tasked, scheduled, and executed by a theater air component commander who exists as a permanent entity, and executes through an AMOCC or standing AOC, much like the 18 AF TACC. The AMOCC or AOC schedules and tasks validated airlift, air refueling, and support requirements. Also like the 18 AF TACC, it must integrate its aircraft into the air and space planning execution process for missions which enter a JOA or another theater, but also runs many missions which may not enter a JOA or adjoining theater. Its C2 is separate from that of the JOA apparatus. Intratheater operations within a JOA are planned, tasked, scheduled, and executed for a COMAFFOR, JFACC, or combined force air and space component commander (CFACC) who has OPCON (COMAFFOR only) or TACON of assets provided. Its operations are contingency based and normally does not use the joint operation planning and execution system (JOPES) to plan its missions. These missions are planned daily as part of the air and space planning and execution process by the AOC AMD, and result in an air tasking order (ATO). An example of these types of intratheater operations was in Operation ALLIED FORCE. USAFE's AMOCC in Germany continued to provide mobility C2 for the USAFE commander, while an AMD in Italy was established within the AOC to focus on mobility within the JOA for the JTF/CC. When theater air mobility requirements exceed the capability of the assigned or attached forces, the geographic combatant commander may request augmentation from, or the establishment of, a "supported/supporting" relationship with, either USTRANSCOM or another geographic combatant commander. Similarly, a JTF/CC would first request augmentation from the geographic combatant commander who may pass that request along as described above.

AGILE COMBAT SUPPORT AND AIR MOBILITY OPERATIONS

The development of new operational and support concepts is evolving in response to unprecedented reform of military roles and missions. The Agile Combat Support (ACS) concept is evolving to ensure support for more adaptive and faster moving forces involved in joint operations while adjusting to the realities of fewer resources and less permanent forward basing.

ACS is the ability to create, protect, and sustain air and space forces across the full range of military operations. It is the foundational and crosscutting United States Air Force system of support that enables Air Force operational concepts and the capabilities that distinguish air and space power-speed, flexibility, and global perspective. Foundational means that ACS supports all operations in the Air Force and is crosscutting because it synergistically combines previously stovepiped communities into an integrated effort.

Expeditionary combat support (ECS) is a subset of ACS that responds quickly, is highly mobile, technologically superior, robust, flexible, and fully integrated with operations. ECS is the deployed ACS capability to provide persistent and effective support for the applications of Air and Space power on a global basis. The ECS aspect of ACS specifically supports air and space expeditionary task force (AETF) operations. ECS includes the essential capabilities, functions, activities and tasks necessary to employ all elements of air, space and land operational forces in deployed locations, to include redeployment and reconstitution.

ECS provides essential support while minimizing the forward footprint. The combination of operational mission, environment, and resource availability, criticality, and risk management determine the components of support capability provided. Therefore, right-sized ECS requires aggressive planning to produce effective support. This enables leaders and planners at every level to assess preparation, training, movement, support and sustainment in a disciplined routine. ECS planners must analyze and assess mission requirements, the operating environment, aircraft and munitions configurations, and other sustainment requirements essential to determining minimum assets to be deployed forward. For additional information, see AFDD 1, *Air Force Basic Doctrine*, and AFDD 2-4, *Combat Support.*

CHAPTER TWO

ORGANIZATION AND COMMAND & CONTROL (C2)

We simply had to decentralize, I realized; we had to have some form of organization by which routine decisions could be made at a lower level instead of piling up in Washington

—Lieutenant General William H. Tunner,
Over the Hump

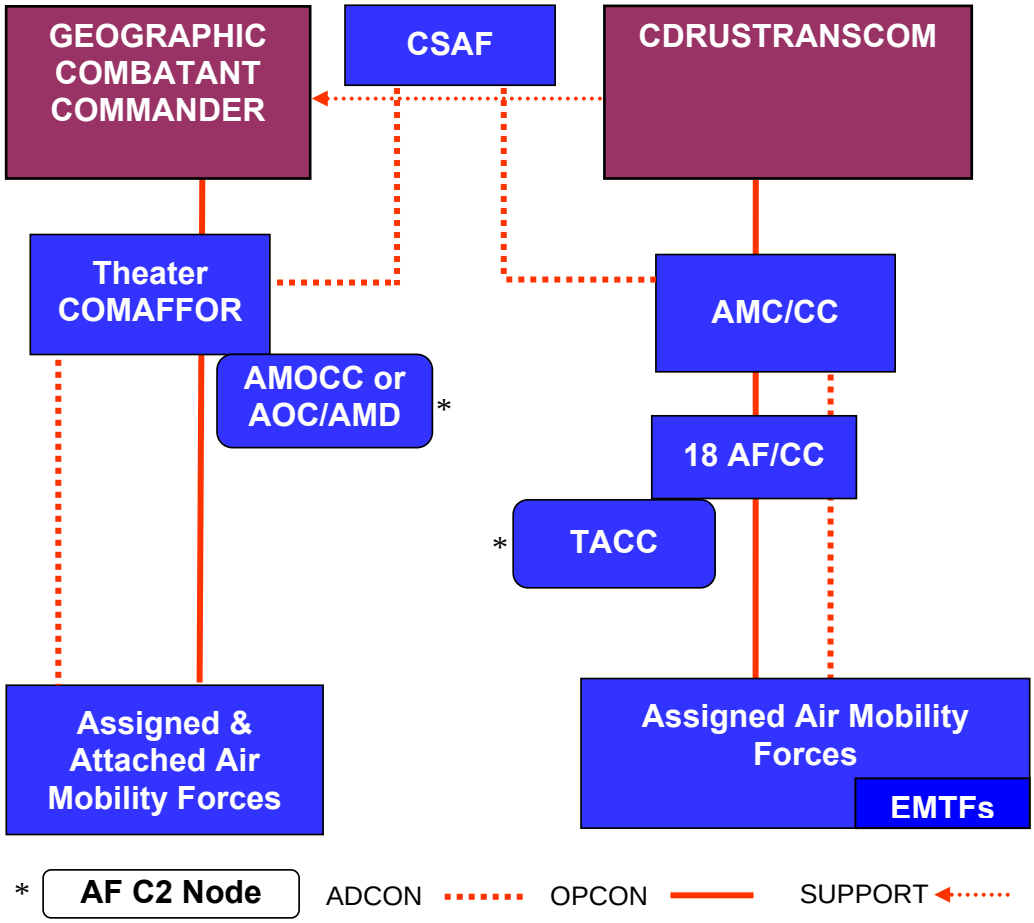
GENERAL

Air and space power operates worldwide, however it is not monolithic. Because it encompasses a wide range of capabilities and operating environments, it defies a single, general model for organization, planning, and employment. A partnership exists between the regionally focused geographic combatant commands and the globally focused functional combatant commands. Some air mobility assets are assigned to the geographic combatant commanders to efficiently and effectively execute intratheater missions, while the balance is retained by AMC and USTRANSCOM as the global/functional commands supporting all the combatant commanders. In times of need, some of the global air mobility assets can be transferred temporarily from USTRANSCOM/AMC to the supported combatant command, while some forces are retained to enable the flexible continuation of support to all the regional commanders. Separate but integrated command structures exercise centralized control over global and regional air mobility forces and are essential to the operation of a worldwide air mobility system which is efficient on the global scale yet responsive to the needs of regional commanders. The components of this C2 system are mobile and deployable which lend confidence to the centrally controlled, whether at the theater or global level, functional model for air mobility. The collective capabilities of air mobility are therefore placed in the hands of a single Airman, one at the theater and one at the global level, empowered with command relationships, a focused expeditionary organization, reachback, and the forward deployment of specialized talent to support the theater organizations. Effective and efficient use of air mobility forces depends on ensuring commanders have the appropriate level of control over forces needed to execute their mission.

GLOBAL/FUNCTIONAL ORGANIZATION AND CONTROL

Some air and space forces are required to concurrently serve more than one geographic combatant commander or other government agency at a time and thus require optimization above the regional, theater level. Therefore, not all air and space

forces employed in an operation will be attached forward to a regional commander. Air mobility, along with space and special operations forces, are organized under functional combatant commanders who normally retain control of the forces assigned to them by the SecDef (see Fig 2.1 below). **For air mobility forces performing primarily intertheater operations the preferred command relationship between global/functional and regional/geographic organizations is support.** Within a theater, this support relationship is facilitated by the designated director of air mobility forces (DIRMOBFOR-Air) attached to the air and space expeditionary task force (AETF). When forces are attached to a theater, Joint Publication (JP) 0-2, *Unified Action Armed Forces*, states that "the combatant commander normally exercises OPCON over forces attached." See AFDD 2, *Organization and Employment*, for a detailed discussion of recommended command relationships for non-assigned forces.



Note: * C2 nodes do not command; they execute control for the designated commander.

Figure 2.1. Peacetime command and control of air mobility forces

CONUS-based active duty air mobility forces, as well as some overseas deployed expeditionary mobility task force (EMTF) air mobility support forces are assigned to USTRANSCOM and CDRUSTRANSCOM exercises combatant command (COCOM). OPCON of these forces has been delegated to the commander of AMC,

USTRANSCOM's Air Force component commander, who further delegates the day-to-day execution authority to the commander, 18 AF. AFDD 1 and AFDD 2 discuss command authorities and command relationships.

Because of air mobility's global responsibility, multiple competing common users, and the necessity to prioritize and apportion limited resources, centralized control of air mobility is crucial. The 18 AF/CC exercises centralized control through the AMC air and space operations center known as the 18AF/TACC. The 18AF/TACC performs its global operations daily, coordinating and directing flights and air mobility support operations through air mobility wings and the EMTFs. See Chapter 5 for more information on EMTFs. When USTRANSCOM air mobility forces are deployed for extended durations in supporting operations, they are normally organized as expeditionary units. Because these forces are located within geographic theater boundaries, an administrative control (ADCON) relationship is normally established with the Air Force host command to ensure that force reporting and support requirements are met. Command-to-command agreements are the best method for detailing these arrangements.

United States Transportation Command (USTRANSCOM)

USTRANSCOM provides the air, land, and sea transportation for the DOD, as well as other government agencies when needed. The commander of USTRANSCOM serves as the single manager of the Defense Transportation System (DTS) and has been designated by the SecDef as the distribution process owner. The DTS includes USTRANSCOM's three Service components: Military Sealift Command (MSC), Surface Deployment and Distribution Command (SDDC), and AMC. USTRANSCOM and some geographic combatant commands provide common-user airlift for the DOD. Common users are military Services, and other DOD or non-DOD agencies that request airlift and are provided airlift service through USTRANSCOM or the geographic combatant commands. Use of these common user assets is on a fee-for-use basis designed to add discipline to the utilization of these limited resources. Common users pay for this airlift through the DOD transportation working capital fund (TWCF), which was established to provide common-user and exclusive-use airlift and aeromedical evacuation services to deploy, employ, sustain, and redeploy US forces worldwide on a business management basis. More information on funding of airlift is included in Chapter 3. Organic airlift is primarily a Service responsibility and is funded through the Service's operation and maintenance budget. It provides specialized lift to specific users, usually between terminals within a theater. See Chapter 3 for more information on the airlift mission tasking categories.

When USTRANSCOM receives a requirement from a regional commander or government agency in its operations center, it first validates the requirement and then decides which mode of transportation would best meet the need. Those requirements identified as air mobility are assigned a DOD transportation priority code and passed to the 18 AF TACC for planning and execution. The information concerning the tasking, from initiation through completion, is tracked in the global transportation network (GTN)

into which a number of other information, planning, and execution programs feed. Any user or operator can access this system to follow the status of the tasking.

During peacetime USTRANSCOM planners assist geographic combatant commands with the development of their contingency plans. This work includes time phased force deployment data (TPFDD) creation, with transportation mode recommendations, port development suggestions, and identification of transportation shortfalls and limitations.

Air Mobility Command

AMC is the Air Force major command primarily responsible for providing airlift, air refueling, air mobility support, and aeromedical evacuation capability. AMC organizes, trains, equips, and operates its assigned air mobility forces to meet worldwide air mobility requirements. As the air component to USTRANSCOM, AMC prepares those forces to meet the assigned intertheater air mobility taskings. Additionally, through established DOD procedures, AMC forces may be made available to fulfill intratheater air mobility requirements.

AMC plans, coordinates, and manages the CRAF program that provides a pool of civil airlift capability made available to the DOD in times of crises. When the CRAF is activated, the 18 AF/CC is vested with mission control of these assets, which is exercised through the 18 AF TACC. The individual commercial carriers retain control of crews, aircraft, and support.

AMC works closely with theater air component commands of each combatant command to establish appropriate standards enabling a smooth transition to contingency operations. 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 entire air mobility force. Global standardization of air mobility processes is crucial to ensure these 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.

18th Air Force

18 AF is AMC's numbered Air Force (NAF). The commander exercises OPCON of the air mobility wings and CRGs assigned to USTRANSCOM and delegated to AMC. The 18 AF/CC also exercises OPCON of the AMC GAMSS assets around the world through the two expeditionary mobility task forces (15 and 21 EMTF) and their respective air mobility operations groups (AMOGs). See Chapter 5 for more information on EMTFs. The 18 AF/CC manages activities through the 18 AF TACC, the command's primary C2 node.

Tanker Airlift Control Center

The 18 AF TACC, as 18 AF's fixed AOC, plans, coordinates, schedules, tasks, and controls air mobility missions worldwide. The 18 AF/CC exercises centralized control for all activities involving AMC-assigned forces through the 18 AF TACC.

A critical enabling feature of the 18 AF TACC is its robust, global command and control system. This organization includes fixed mission support forces supported by deployable en route units from the EMTFs. The 18 AF TACC is able to track the status and location of personnel and cargo, otherwise referred to as in-transit visibility (ITV).

The 18 AF TACC consists of a senior director, liaison officers, ten divisions, and an information operations (IO) flight with the following breakdown of functions:

- **Director of Operations.** The director of operations provides immediate oversight and decision making in the day-to-day activities of AMC, and serves as the command's representative to the joint staff, Air Force operations center, National Military Command Center, USTRANSCOM, DOD, and other agencies.

- **Air Force Reserve Command and Air National Guard Advisors.** Provide advice and guidance on ARC matters. Promote maximum participation of ARC aircrews, both unit equipped and associate.

- **Resources.** Manages 18 AF TACC's budget, manpower, facilities, and security programs.

- **Mobility Management.** Tasks units to support intertheater/intratheater airlift and tanker requirements. Coordinates with AFRC and ANG on their availability to support worldwide mobility taskings. Manages the joint airborne/air transportability training (JA/ATT) and air refueling allocation process.

- **Command and Control.** Assumes mission control 24 hours prior to mission origination.

- **Current Operations.** Plans and schedules SAAMs, CORONET (fighter movement) air refueling missions, dual role air refueling missions, and airlift/tanker missions supporting DOD special operations forces.

- **Global Readiness.** Focal point for all CJCS TPFDD-based exercises and contingencies. Responsible for the development of concept of operations (CONOPS), aircrew brochures, airlift airflows, and coordinating AMC-provided ground support and CRE packages. Also maintains management oversight of the air mobility tasking (AMT) message, AMC's single integrated tasking process for all AMC mobility taskings.

- **Global Channel Operations.** Directs worldwide intertheater channel airlift operations for passenger and cargo movement and aeromedical evacuation in the DTS. Develops route structures, schedules airlift and aeromedical evacuation

missions, and provides oversight on channel system performance. Works with AMC aerial ports, patient movement requirement centers and en route locations to meet sustainment movement requirements.

- **Operations Management.** Develops synergy across all 18 AF TACC directorates especially in cross-functional issues both internal and external to the 18 AF TACC.

- **15th Operational Weather Squadron.** Provides direct mission planning/execution products/services for the 18 AF TACC, intertheater airlift/tanker crews operating worldwide, and Air Force/Army Guard/Reserve flying units. Provides weather intelligence for planning and execution of intertheater airlift and air refueling missions.

- **Intelligence.** Delivers operational intelligence, threat analysis, terrorist threat products, and operational plans. Monitors all-source current and operational intelligence to support AMC worldwide air mobility operations.

- **Logistics.** Assists with any aircraft maintenance problems management and direction of aerial port execution planning and the validation, sizing, sourcing, tasking, and rotating of command resources.

- **The AMC Information Warfare Flight.** Responsible for providing/coordinating real-time information operations (IO) capabilities, centralized planning and control of the mobility Air Forces (MAF) IO objectives, and decentralized execution of IO capabilities. This flight also provides a representative to the AMC threat working group to identify threats, vulnerabilities, and recommend countermeasures for ongoing MAF operations.

The 18 AF TACC uses a continuous planning and execution cycle driven by a constantly updated list of prioritized missions. When a tasking is received from USTRANSCOM the type of support is determined and then assigned to a wing or EMTF to execute. For channel missions, SAAMs, and operational support airlift (OSA) missions, partial mission planning (e.g., airfield survey or diplomatic clearances) usually takes place at the 18 AF TACC who then forwards the information to the executing force, which completes the planning. CJCS exercise and contingency missions are built and pushed into global decision support system (GDSS) by the 18 AF TACC (or AMOCC as appropriate). Once assigned to a unit the mission is placed in the GDSS for further development and tracking. GDSS, along with other supporting programs, feeds its information into GTN to increase global visibility. See Chapter 6 for more information on planning. Execution tracking and control is performed by the local command post, wing operations center, or other C2 node, as well as direct contact with the 18 AF TACC if needed in geographically remote areas.

REGIONAL ORGANIZATION AND CONTROL

A geographic combatant commander exercises COCOM authority over theater-assigned forces, including air mobility forces. The geographic combatant commander normally delegates OPCON of assigned and attached air mobility forces to the theater COMAFFOR. For example, the commander, US Air Forces Europe (COMUSAFE) is the COMAFFOR to the commander, US European Command (CDRUSEUCOM).

The geographic combatant commands have both a normal peacetime organization as well as a contingency organization. In peacetime or when events requiring operations in theater do not warrant the establishment of a joint task force, the geographic combatant commander will direct operations, and usually delegates OPCON or TACON of air operations to the Service components. The COMAFFOR executes the command and control of Air Force air operations in the theater or area of responsibility (AOR) through the AOC. One of the AOC divisions, the air mobility division (AMD), usually oversees intratheater air mobility operations. However, some theaters have established a dedicated unit for air mobility C2 called an AMOCC, not necessarily collocated with an AOC. Either the AMOCC or AOC coordinates intertheater air mobility support operations with the 18 AF TACC directly. A theater may establish a standing DIRMOBFOR-Air to assist the COMAFFOR with air mobility operations during peacetime operations as well as contingencies.

All Air Force forces assigned or attached to a joint force, or established as a single-Service task force, should be organized and presented as an AETF. Similarly, when air mobility forces are attached to a JTF, they become part of that AETF commanded by the COMAFFOR. See Figure 2.2 below.

The JFC may elect to establish functional component commands when forces from two or more military Services must operate in the same dimension or medium or there is a need to accomplish a distinct aspect of the assigned mission. Functional component commanders, such as the JFACC, are not mandatory, however JP 3-30, *Command and Control for Joint Air Operations*, states that joint air operations are normally conducted by a JFACC. When functional components are established, the Service component commander with the preponderance of forces to be tasked, and with the requisite ability to provide command and control, normally will be designated as that functional component commander. Functional component commanders normally exercise TACON of forces made available for tasking. Thus, for air and space forces, the COMAFFOR may be dual-hatted as the JFACC. The Air Force prefers—and in fact, plans and trains—to employ through a COMAFFOR who is also dual-hatted as a JFACC. In the unusual case where the COMAFFOR is not also the JFACC, the COMAFFOR may be tasked to provide DIRMOBFOR-Air and AMD support to the JFACC. The COMAFFOR would normally provide these services in a supporting role, and the JFACC would be the supported commander. However, if reachback or other support mechanisms are not desired or sufficient, and a suitable facility is provided, TACON of the DIRMOBFOR-Air and/or AMD may be transferred to the JFACC.

The Air Force is organized around the idea of deploying a constantly ready but rotating group of forces to augment a geographic combatant command in times of

crisis—the air and space expeditionary force (AEF) concept. These rotating force pools provide tailorable modules of trained operational and support forces ready for deployment worldwide as part of an AETF. A portion of AMC and theater air mobility support forces contributes to the expeditionary combat support (ECS) forces within the AEF, but the majority of AMC and theater air mobility assets (aircraft and aircrews) are designated "enablers," and not assigned against any particular AEF rotation so they can be used at any time to support any combatant commander's needs (or those of other government agencies). Commanders should exercise caution in using these forces as, unlike the AEF-assigned forces, there is no built-in recovery, training, and reconstitution period.

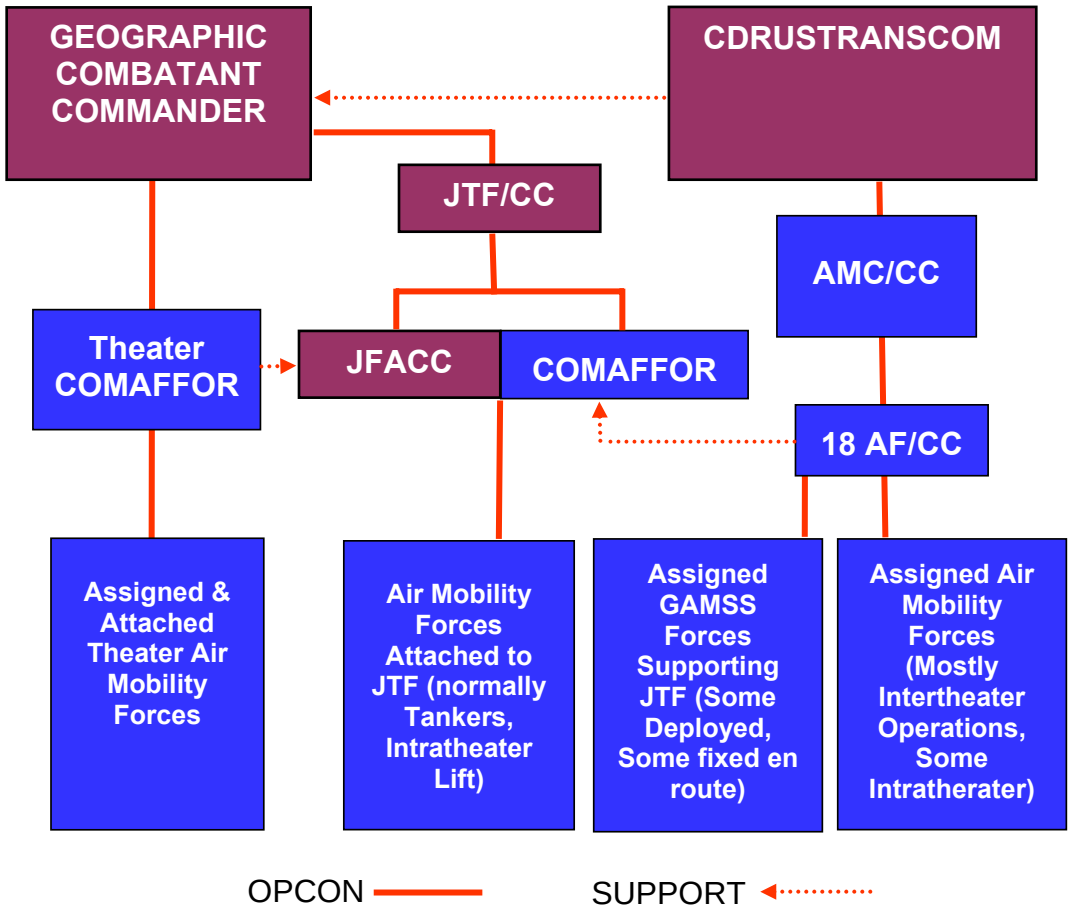


Figure 2.2. C2 of air mobility forces when a JTF is established

As discussed in the global/functional section above, global air mobility forces normally operate in support of geographic commands despite their deployed location or transit through an AOR while those with intratheater effects are normally transferred. This "support" can be more beneficial than "ownership" or OPCON because the entire force of the supporting command (USTRANSCOM), rather than the likely smaller, and therefore less capable, force that might be transferred; is available to meet the regional commander's needs. However, in some cases the geographic combatant commander may have a compelling reason for requesting attachment of global/functional forces to

his/her command. The decision process as to whether to transfer those forces or not is made by the SecDef and should follow guidance in AFDD 2. Commanders are reminded that they bear the responsibility to maintain any forces assigned or attached to their command.

Commander of Air Force Forces

The COMAFFOR provides unity of command, one of the most widely recognized principles of war. The COMAFFOR is an Air Force officer designated as commander of the Air Force component assigned to a JFC at the unified, sub-unified, or JTF level. Although the JFC has great latitude in determining command relationships, he or she normally delegates OPCON over all assigned and attached Air Force forces to the COMAFFOR.

Director of Air Mobility Forces

The DIRMOBFOR-Air is a senior Air Force officer familiar with the AOR who possesses an extensive background in air mobility operations. At the discretion of the theater, JFC, or COMAFFOR, the DIRMOBFOR-Air may be sourced from the theater's organization or USTRANSCOM. AMC may offer either of the EMTF commanders (EMTF/CC), a pre-designated wing commander, or another trained air mobility officer as the DIRMOBFOR-Air. **The DIRMOBFOR-Air is the COMAFFOR's designated coordinating authority with all agencies affecting air mobility operations. The DIRMOBFOR-Air is also the advisor on how best to effectively and efficiently use air mobility assets. He or she is normally assigned or attached to the COMAFFOR's special staff to assist in planning and conducting air mobility operations and should be given appropriate liaison authority.** The Air Force has an established training program to prepare designated officers to fulfill DIRMOBFOR-Air duties, and maintains a pre-designated list of trained personnel for each theater to fulfill those responsibilities when contingencies arise.

The DIRMOBFOR-Air normally exercises coordinating authority between the AOC, the 18 AF TACC, the AMOCC (or appropriate theater C2 node), and the joint movement center or theater deployment and distribution operations center (JMC/DDOC) (if established), to expedite the resolution of air mobility issues. They normally have direct liaison authority (DIRLAUTH) with other organizations as well. Additionally, the DIRMOBFOR-Air ensures the effective integration of intertheater and intratheater air mobility operations, and facilitates the conduct of intratheater air mobility operations. Figure 2.3 (page 21) presents the relationships of the DIRMOBFOR-Air and the AMD within the AOC. **The DIRMOBFOR-Air provides, on behalf of the COMAFFOR, guidance to the AMD on air mobility matters, but such guidance should be responsive to the timing and tempo of operations managed by the AOC director. The AOC AMD remains under the control of the AOC director who manages the execution of operations for the COMAFFOR.** The DIRMOBFOR-Air is the primary interface for other air mobility operations occurring in theater. The DIRMOBFOR-Air should be collocated with the AOC AMD to maximize effectiveness.

When circumstances dictate, the COMAFFOR may reorganize the AOC as required to accomplish the mission. This may include placing the entire AMD under the direct control/supervision of the DIRMOBFOR-Air. Organization authority is included under OPCON.

The DIRMOBFOR-Air also has distinct responsibilities in relation to JFC staffs. Air mobility requirements originate at the component level and are validated by either the JMC/DDOC, when established, or by the JFC's J-staff. The DIRMOBFOR-Air facilitates the air mobility interface between the AOC and the JFC's J-staff and JMC/DDOC to ensure appropriate prioritization of air mobility capability.

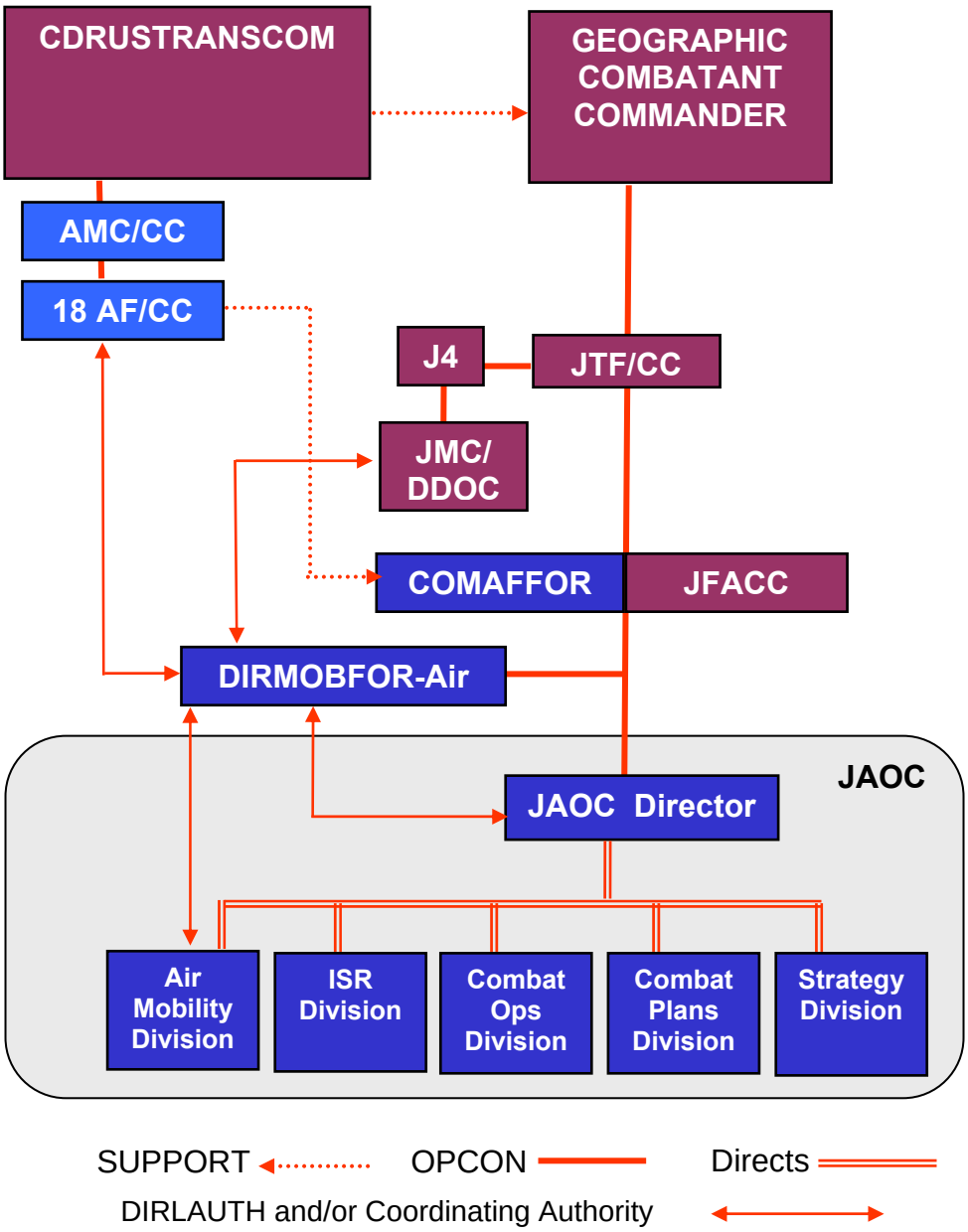
Specific duties of the DIRMOBFOR-Air include the following:

- ✪ Coordinate the integration of intertheater air mobility capability provided by USTRANSCOM.
- ✪ In concert with the AOC Director, facilitate the tasking and effective and efficient employment of air mobility forces attached or assigned to the JFC.
- ✪ Coordinate with the AOC director and AMD Chief to ensure that all air mobility operations supporting the JFC are integrated into the air assessment, planning, and execution process, and deconflicted with other air operations.
- ✪ Coordinate with the 18 AF TACC and 18 AF to ensure the joint force air mobility support requirements are met.
- ✪ Assist in the integration and coordination of the multinational air mobility plan.

Joint Movement Center (JMC)

The JMC is a J-4 staff agency usually tasked to plan, apportion, allocate, coordinate, and deconflict transportation.[1] The JMC develops the theater movement plan meshing intertheater movements with their reception and onward transportation to the final destination. Apportionment for intratheater airlift means the JMC validates component requests for airlift when organic or supporting land or sea transportation is inappropriate or not available. If there is no JMC established, the JFC delegates the allocation process to the Service components (an AMD function). With a JMC in place, the Service components (the AMD and DIRMOBFOR-Air) work with the JMC to optimize daily movements based on transportation assets available. The JMC validates requests, sets movement priorities and the AOC's air mobility division plans the most effective use of aircraft to meet the validated air movements. The JMC monitors the transportation system's performance, coordinates needed adjustments, and initiates action to meet unfulfilled requirements. A current development in some theaters is to embed the JMC within the DDOC.

[1] JP 4-01.3, *Joint Tactics, Techniques, and Procedures for Movement Control*, Page III-3



Note: Although the DIRMOBFOR-Air is normally physically located in the AOC to facilitate coordination, he/she is not a member of the AOC staff.

Figure 2.3. The DIRMOBFOR-Air in the C2 structure

Deployment and Distribution Operations Center

A still evolving concept, the theater DDOC is a multi-modal organization, normally assigned or attached to a geographic combatant command with specification of OPCON. It is normally collocated with the JMC and provides the bridge of ITV and expertise necessary for the J-4 to manage the reception, staging, onward movement

and integration (RSOI) of incoming forces and equipment by facilitating the movement of materiel from the intertheater system to the intratheater distribution systems. The DDOC links sustainment, distribution, and movement requirements.

A DDOC is normally comprised of expertise from USTRANSCOM, US Joint Forces Command (USJFCOM), the Defense Logistics Agency, Army Materiel Command, Joint Munitions Command, Army Field Service Command, Air Force Materiel Command and representatives from all of the services. The DDOC fuses data from all the systems and services and provides decision quality information to the DDOC Director.

Air Mobility Operations Control Center

The AMOCC is the theater air component commander's single command and control node responsible for intratheater air mobility operations. It provides centralized planning, tasking, scheduling, coordination, and C2 for assigned and attached air mobility forces operating in the AOR. The AMOCC integrates intertheater and intratheater air mobility operations to efficiently and effectively accomplish the theater air mobility task and enhance the goal of seamless global mobility. If a JTF is established within the theater, the AMOCC coordinates missions planned into the JOA with the COMAFFOR's AOC AMD.

Air and Space Operations Center

The COMAFFOR normally establishes an AOC to execute the air and space portion of the JFC's mission. When the COMAFFOR is dual-hatted as the JFACC or CFACC, the AOC becomes, with proper joint or coalition augmentation, the joint or combined air and space operations center (JAOC or CAOC). The AOC is the operations center and focal point for the command and control of Air Force air and space forces. The fundamental principle of this organization is centralized control by the COMAFFOR/JFACC through the AOC, with decentralized execution by subordinate organizations and elements. The AOC structure is used whenever the COMAFFOR has been designated as the JFACC or when no JFACC is designated. In most cases, a senior Air Force air mobility officer, designated the DIRMOBFOR-Air, is assigned to the COMAFFOR/JFACC's staff to assist with air mobility operations. The DIRMOBFOR-Air is normally collocated in the AOC to facilitate this assistance.

Each contingency is unique, and the C2 structure is specifically tailored to manage the forces employed. When operations involve predominantly air mobility forces, an air mobility expert may be assigned as COMAFFOR, and possibly the JFACC as well. In this case a DIRMOBFOR-Air might not be designated since the respective functions are inherent within the COMAFFOR. In these circumstances, the AOC would likely consist primarily of an AMD and sufficient other expertise to control air and space operations within the JOA. Figure 2.3 depicts the C2 mechanisms of the air mobility force.

Air Mobility Division

The air mobility division of the AOC plans, coordinates, tasks, and executes air mobility operations for the COMAFFOR/JFACC. As one of the five divisions of the AOC under the AOC Director, the AMD provides integration and support of all JOA air mobility missions. The chief of the AMD ensures the division effectively participates in the AOC planning and execution process. The AOC director provides policy and guidance to the AMD regarding the air and space planning and execution process. The AMD tasks intratheater air mobility forces through wing and unit command posts when those forces operate from home bases, and through applicable forward C2 nodes such as wing operations centers otherwise. The AMD usually consists of the following four teams: the air mobility control team (AMCT), the airlift control team (ALCT), the air refueling control team (ARCT), and the aeromedical evacuation control team (AECT). **The DIRMOBFOR-Air should be collocated in the AOC to facilitate their close working relationship with the AMD.** See AFI 13-1AOCv3, *Operational Procedures—Air and Space Operations Center*, AFDD 2, *AFOTTP 2-3.2. Air and Space Operations Center,* and JP 3-30, *Command and Control for Joint Air Operations* for details of AOC and JAOC operations.

The AMD has the following responsibilities:

- Integrate the execution of theater and USTRANSCOM-assigned air mobility forces operating in the AOR/JOA in support of the JFC requirements/objectives.
- Manage the flow of theater and USTRANSCOM-assigned air mobility assets in support of JFC objectives.
- Coordinate air mobility support for air mobility requirements identified and validated by the requirements and control authority.
- Participate in the air and space strategy creation, planning, and execution process and coordinate with the combat plans division to ensure air mobility operations are incorporated in the ATO.
- Ensure air mobility operations are visible in the AMC standard C2 structure and reflected in the ATO/airspace control order (ACO) within OPSEC constraints.
- Monitor the current threat situation and ensure intratheater and intertheater missions are appropriately briefed.
- Identify ISR requirements in support of air mobility operations.
- Identify IO requirements to support the air mobility mission.
- Maintain information exchange with the 18 AF TACC and AMOCC (if established) to support air mobility operations into the AOR/JOA to include the passage of special

instructions (SPINS) and other mission critical planning information to prepare intertheater mission aircrews.

- ✪ Integrate and direct the execution of combat support air refueling operating in the AOR/JOA and in support of the JFACC requirements/objectives.

- ✪ Assist the in-transit visibility (ITV) and total asset visibility effort.

- ✪ Coordinate with the 18 AF TACC to ensure applicable safe passage procedures for aircraft entering the AOR/JOA are transmitted.

Air Mobility Control Team

The AMCT serves as the centralized source for air mobility command, control, and communications during execution of air mobility operations. The chief of the AMD uses the AMCT to direct or redirect, as required, air mobility forces in concert with other air 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 AOR/JOA. The AMCT maintains the execution process and communications connectivity for tasking, coordinating, and flight following of air mobility operations in conjunction with the AOC combat operations division, subordinate air mobility units, and air mobility forces. The optimal working relationship between the AMD and the combat operations division occurs when air mobility control personnel are working side-by-side with AOC combat operations division personnel to integrate and deconflict air mobility operations with other operations. This side by side working relationship ensures all air assets are integrated, mutually supportive, and contribute to the same objectives and goals. To be most effective, air mobility control personnel should have the same security clearances as other controllers in the combat operations division.

Airlift Control Team

The ALCT is the source of intratheater airlift expertise within the AMD. The ALCT brings intratheater airlift functional expertise to plan, task, and coordinate intratheater airlift operations for the COMAFFOR. The ALCT has three responsibilities: planning, tactics development, and long-range requirement determination. They work closely with the other AOC planners, the J-4, and the joint movement center (JMC) if established, to fulfill these tasks. Airlift planners are normally integrated with the strategy and combat plans divisions of the AOC to ensure airlift mission are fully integrated into and deconflicted with other air operations. To be most effective, airlift planners should have the same security clearances as others in those divisions.

Air Refueling Control Team

The ARCT is the source of air refueling expertise within the AMD. The ARCT coordinates air refueling planning, tasking, and scheduling to support all intratheater air refueling for combat airpower, as well as air bridge operations to satisfy COMAFFOR or JFACC requirements. Most ARCT members are normally integrated with the strategy, combat plans, and combat operations divisions of the AOC to ensure air refueling

assets are completely integrated into the air and space operations plan (AOP). To be most effective, tanker planners should have the same security clearances as other planners in those divisions.

Aeromedical Evacuation Control Team

The AECT is responsible for aeromedical evacuation (AE) operational planning, scheduling, tasking, and assisting the AMCT with operations execution and monitoring. The AECT coordinates airlift support and evaluates available air mobility airframes assigned to or transiting the theater to meet theater AE requirements. The AECT coordinates with J-4/JMC and the patient movement requirements center (PMRC) on patient movement requirements and priorities. It also works closely with the ALCT for preplanned (channel) intratheater airlift, the AMCT for immediate intratheater airlift, and AMD for intertheater airlift requests. The team provides advice concerning all theater or JTF AE issues including force support requirements and laydown of AE forces.

ADMINISTRATIVE CONTROL (ADCON) OF FORCES

ADCON is a broad Service responsibility covering administration (discipline, awards, personnel actions) and support (beans and bullets) of forces. For functional forces that remain under the OPCON of parent command, most ADCON responsibilities remain with the parent unit. However, when these forces transit or perform operations in a geographic combatant commander's AOR, the host air component command is typically responsible for force protection, reporting, lodging, and food services for those air mobility forces. This would also apply to any theater assigned or attached air mobility units that cross AOR boundaries into another AOR in transit or to perform an intertheater mission. This arrangement may be modified by command-to-command agreements between the participating air component commands. Typically airlift aircraft, air bridge tankers, and deployed GAMSS, i.e., CRE personnel would be affected in this way.

For AMC forces attached with specification of OPCON or TACON to a geographic combatant command, the receiving air component command is normally given ADCON authorities for those forces until they are returned to their parent command/unit. These responsibilities also apply to air mobility forces assigned to one geographic combatant command that have OPCON or TACON transferred to another geographic combatant command. This situation will likely affect C-130 and tanker units, AOC augmentees, and personnel involved in base opening efforts. A last scenario would involve forces assigned to one combatant command, attached to another, and bed-down/operating from a third command. In this case, the ADCON arrangement between the parent MAJCOM and gaining theater must be clearly specified. This agreement should be reflected and published in both theater orders and supporting MAJCOMs' deployment orders (DEPORD).

Many Air Force air mobility forces operate within regional MAJCOMs without being formally "attached." These forces are considered to be "transient forces" in JP 0-2 and are subject to the area (regional) commander's orders in some instances (e.g., for coordination of emergency defense, force protection, or allocation of local facilities).

However, transient forces are not part of the regional commander's command and the regional commander is not in their normal chain of command.

HOMELAND SECURITY OPERATIONS

The command and control of air mobility forces during homeland security operations is similar to the global and regional operations discussed earlier, but there are some significant variances. During homeland contingencies, United States Northern Command (USNORTHCOM) is the geographic combatant commander, except for Hawaii and other Pacific territories that fall to United States Pacific Command (USPACOM). The commander, USNORTHCOM (CDRUSNORTHCOM), appoints a defense coordinating officer (DCO) who will be the immediate interface with the principle federal official (PFO), a civilian appointed to head the operation. An Air Force emergency preparedness liaison officer (EPLO), normally a Reservist or Guardsman filling a state billet will usually augment the DCO. EPLOs are trained and controlled by the Air Force National Security Emergency Preparedness (AFNSEP) organization under the HQ USAF deputy chief of staff, air and space operations (AF/XO). 1 AF/CC is the COMAFFOR for USNORTHCOM homeland operations. If the contingency is large enough, CDRUSNORTHCOM will establish a JTF with all the normal elements, and the DCO will become part of the JTF staff.

Requests for assistance from USTRANSCOM forces would come from USNORTHCOM and be handled normally, though homeland security operations impose some new rules on the use of military assets (military is the last choice; use contract services first). The DCO or the JTF/CC would generate those requirements on behalf of the PFO. If an AOC is established, air mobility expertise and operations in the form of the DIRMOBFOR-Air, AMD, and 18 AF TACC would be utilized. If an AOC is not established, the air mobility expertise would be plugged into the 1 AF AOC, the DCO or JTF staff, or sometimes the air component coordination element (ACCE) established at a ground component headquarters. In any case, nearly every contingency will need some form of air mobility support to ensure effective operations.

AIR RESERVE COMPONENT C2 CONSIDERATIONS

Under volunteerism and either selective or partial mobilization, ARC units and individuals have unique OPCON and ADCON relationships as specified below. After full mobilization, ARC forces' OPCON and ADCON relationships are equal to active duty forces.

Air Force Reserve Command (AFRC)

Until full mobilization, the Commander of AMC exercises OPCON over Air Force Reserve Command (AFRC) air mobility resources; however, ADCON responsibility still runs through the AFRC headquarters and the respective Reserve NAF for personnel, administrative support, and discipline. A local commander at a deployed location would still have specified ADCON. To clarify, until full mobilization, even though an AFRC unit or individual mobilization augmentee (IMA) may be activated, AFRC/CC exercises those ADCON authorities not specified to a forward commander.

Air National Guard/Air National Guard of the United States (ANG/ANGUS)

Special considerations exist in determining the command relationships when dealing with the Air National Guard and the Air National Guard of the United States (when federalized). AMC/CC exercises OPCON of applicable Air National Guard units and members when they are federalized and in Title 10 status. ADCON for discipline, personnel support, and administration for these federalized units is retained by the ANG Readiness Center, or if full mobilization has occurred, is given to the gaining command. ANG units operating outside of the US must be in Title 10 status. When ANG are involved in training for the federal mission (Title 32 status), AMC/CC may exercise training and readiness oversight, but not command. Command remains with the state authorities. Title 32 status Guard members fall under the command authority of the adjutant general (TAG) of their state and therefore their governor. If Guard members operate, in Title 32 status, outside of their state but within the United States, command authority will remain with the TAG but will be subject to any coordinating authority, or state to state agreements. If no pre-negotiated agreement exists, responsibilities such as support and force protection should be coordinated between applicable commanders.

The Air National Guard

Air National Guard assets can be classified into three categories within the law and, with the exception of one limited situation under 32 U.S.C. Section 325 requiring approval of the President, can only be in one status at a time. The first is Title 10 where forces are under the authority of the President as Commander in Chief. The second category is "state active duty" for Air Guard forces, under the authority of the state governor through the respective state's adjutant general (TAG), and funded by the state. The third category is Title 32 status: they are under the authority of the state governor for training purposes but funding is from the federal government. The ANG and Air Force have agreed that the joint definition of 'coordinating authority' allows the state governor who orders Air Guard forces to state active duty or Title 32 status to have those forces respond to direction of a Title 10 commander. The forces are still under the command authority of the governor but for unity of effort the active duty (Title 10) commander, other Title 32 commander, or other commander can direct their actions. The "training and readiness oversight" (TRO) exercised by the combatant commander and, if delegated, by AMC/CC is not command authority, but rather more in the nature of a type of "coordinating authority." TRO is defined in JP 0-2, chapter III, section A, paragraph 10.

—ANG/JA Derived from titles 10 and 32, U.S.C.

CHAPTER THREE

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 1995-1997

GENERAL

Airlift is the ability to transport personnel (including casualties) and materiel through the air. As one of the Air Force's operational air and space power functions, airlift provides the core of the Air Force's ability to deploy and sustain itself as well as the other Services and government agencies worldwide. Air Force transport aircraft as well as most air refueling aircraft perform airlift operations.

Airlift forces can be employed across the full range of military operations. While air and space forces have enormous potential to deliver lethal effects against an adversary, airlift forces can also provide equally important non-lethal effects. United States leaders rely upon the Air Force's air mobility capability to reduce human suffering by transporting essential medical supplies, food, shelters, water, and other materiel. Performing noncombatant evacuation operations also demands air mobility to remove personnel from threatening situations. This focused support to theaters, along with the vast global movement of personnel and cargo on a daily basis, further emphasizes the importance and flexibility of airlift.

Airlift forces are vital instruments of national power. Airlift plays a key role in meeting National Military Strategy requirements. Airlift can bring a constructive force to a crisis, but it can also exert destructive force against an opponent in the form of forcible entry operations in concert with ground units, conducting combat delivery operations to establish a lodgment. Whatever the situation, airlift moves the assets to resolve the contingency according to the security interests of the United States or its allies.

AIRLIFT OPERATIONS

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 operational requests for airlift are supported in accordance with a DOD priority classification.

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/patient/cargo capacity available to all common users. However, when a contingency occurs, airlift forces typically surge to meet the supported combatant commander's validated and prioritized movement requirements.

Operation VITTLES

In February 1948, a Soviet backed coup seized power in Czechoslovakia tightening communism's grip on Eastern Europe. West Berlin remained as a lone democratic holdout in the communist sea. In June of that year Soviet forces closed all overland routes into West Berlin, isolating the city from the outside world. This development led to the first humanitarian airlift of the Cold War, and the largest in history. "We are going to stay, period" remarked President Truman. The US would sustain the city through the air.

Before the blockade, the city imported 15,500 tons of materiel daily to meet its needs. Minimum requirement for survival was estimated at 4,000 tons a day. C-47s and C-54s were only able to airlift 80 tons of supplies on the first day of the operation. However, once maintenance inefficiencies, turn-around delays and air traffic flows were ironed out, tonnage airlifted increased. With the help of airlifters from the Royal Air Force, the daily tonnage to Berlin climbed to nearly 13,000. Operation VITTLES would eventually bring over 1.5 million tons of food, medicine, coal, and other supplies into West Berlin. For 462 days, the allies provided an airborne lifeline to West Berlin. By September 1949 the Soviets conceded that its blockade had failed, and reopened the roadways into Berlin.

Operation VITTLES preserved West Berlin, a democratic foothold in East Germany. This historic effort proved that joint and combined airlift capability could be massed under a single airlift task force commander to sustain an isolated city-sized population through only three airfields. Besides demonstrating US political commitment, the airlift proved the impetus for an expanded long-range heavy airlift fleet.

—Airlift Doctrine
Charles E. Miller, Lt Col, USAF, 1988

Airlift has four basic operations: Passenger and cargo movement including operational support airlift, combat employment and sustainment, aeromedical evacuation, and special operations support. Air Force airlift forces perform these operations to achieve strategic, operational, and tactical level effects or support national objectives across the spectrum of conflict.

Passenger and Cargo Movement

Cargo airlift is the movement of supplies, vehicles, and other equipment through the air because it cannot wait for surface transportation. This includes hazardous material, equipment too large for normal civilian aircraft, and time-critical equipment and supplies that must be available to the warfighter before the first ships arrive. Air cargo is categorized as bulk, oversize, outsize, rolling stock, and special. More detail on cargo types can be found in chapter six.

Passenger airlift transports DOD and other government personnel from one location to another. This move may support unit rotations, contingency deployments, or routine administrative movements. During contingencies, troop movements should be carefully synchronized to arrive in theater with their equipment whether it has been prepositioned or moved previously by air or sea.

Additionally there is a specialized category of passenger movement provided to the US government. Special airlift missions (SAM) move senior federal government leaders around the world to meet their requirements. These flights are monitored by the 18 AF TACC but are not controlled by it. Any type aircraft may be used to support a SAM flight. More information on SAM flights is contained in the mission tasking categories subsection later in this chapter.

Operational Support Airlift (OSA). OSA operations supplement the joint use airlift system and use dedicated light transport aircraft. In most cases, these airframes are permanently assigned to the Service component of combatant commands or a major command (MAJCOM). Outside of the CONUS, OSA assets are assigned to and are for the timely movement of limited numbers of priority personnel and cargo. OSA flights are predominantly used to meet the geographic combatant commander's or service component commander's needs. CONUS-based OSA assets are assigned to the Services but are centrally controlled by the joint operational support airlift center at HQ USTRANSCOM to serve the needs of approved DOD users. OSA provides the commander another means of airlift for high-priority passengers and cargo with time, place, or mission-sensitive requirements. The assets that are normally used for peacetime OSA, smaller-sized business type airframes, do not have defensive systems and their use in hostile environments should be subjected to risk analysis.

C-21 OSA aircraft

Combat Employment and Sustainment

Combat employment airlift moves combat-loaded units to maximize their readiness for immediate engagement in combat operations within a theater, while

combat sustainment airlift ensures those forces are kept supplied under hostile conditions. Combat employment and sustainment missions allow a JFC to insert surface forces directly and quickly into hostile situations and to sustain combat forces in the field, especially while engaged. These types of operations can cover a range of options, from noncombatant evacuations to large scale air assault/air drop missions that may lead to base opening and force lodgment. Combat employment and sustainment usually accounts for a small percentage of total airlift sorties, nevertheless its importance and effectiveness are far greater than the number of sorties indicates. This is a capability that in most circumstances cannot be accomplished by other means.

Operation SWIFT FREEDOM

Operation SWIFT FREEDOM, the US Marine seizure of a forward operating base in Southern Afghanistan, witnessed the first combat employment of the C-17 in an airland operation using night vision goggles (NVGs). From 28 November to 6 December 2001, C-17s from the 437th Airlift Wing at Charleston Air Force Base, South Carolina, and in-theater C-130s conducted the combat insertion of Task Force 58—the 15th and 26th Marine Expeditionary Units, a Seabee Battalion, and a contingent of Australian special operations forces. Task Force (TF) 58 was airlifted by C-17 from Pasni, Pakistan, into Camp Rhino Landing Zone, a 6,840-foot, semi-prepared dirt strip located 75 miles southwest of Kandahar, Afghanistan. The TF-58 mission was to disrupt Taliban control in southern Afghanistan, gather intelligence, and prevent the escape of Taliban and al-Qaeda fleeing the fall of Kandahar. Air Mobility Command retained operational control (OPCON) of the airlift force. Theater direction and integration was exercised through the Operation ENDURING FREEDOM DIRMOBFOR-Air at Prince Sultan Air Base, Saudi Arabia.

To mitigate the threat from surface-to-air missiles, anti-aircraft artillery, and small arms, missions into Camp Rhino were conducted only at night, under blacked out conditions with the aircrew using NVGs. The C-17s approached Camp Rhino at an altitude of 24,000 feet and entered a tight spiraling descent to roll out at 500 feet on one mile final. The Marines established a 5-mile safe zone around the field with patrols going out to 30 miles. These actions minimized the aircraft visual and noise signature to the point that even on NVGs the Rhino air traffic controllers could not see or hear the aircraft until it rolled out on final. Aircrews conducted engine-running offloads to minimize ground time, and when required, performed the more rapid combat offload procedure—all on NVGs. In one instance, a C-17 combat offloaded 14 pallets—87,000 pounds—with only three minutes between touchdown and the "ready to takeoff" call.

By all measures, Operation SWIFT FREEDOM was a complete success. Over an 8-day period the C-17s flew 64 sorties into Camp Rhino, delivering 481 troops and 1450 tons of equipment and supplies. The C-17s maintained 100 percent mission reliability while executing the deepest combat insertion in the 227-year history of the US Marine Corps.

—Commander, Task Force 58
Operation ENDURING FREEDOM

Combat employment and sustainment operations require detailed joint planning and involve the highest risk to aircraft, aircrew, and users. Given the assumption that the cargo and passengers must be ready for immediate combat, effectiveness versus efficiency of the airlift must receive the highest priority. Threat analysis, aircraft limitations, tactical procedures, and defensive support requirements will also affect the offload available to the user. Airlift forces should have the flexibility to temporarily surge to meet requirements that exceed routine demands for passenger and cargo movement.

Combat sustainment operations reinforce or resupply units engaged in combat, and permit timely return of reparable parts, often in critically short supply, to designated repair points. Once delivered to the target area, an inserted force may be totally dependent upon subsequent airlift operations for sustainment, movement, withdrawal, redeployment, or aeromedical evacuation of casualties. Combat sustainment planning usually assumes that operational requirements and assessed threats allow little or no flexibility in the delivery times, locations, and load configurations. Combat requirements and cargo handling limitations at forward operating locations drive flight schedules and load plans. Operational effectiveness is the primary objective and the efficient use of aircraft and support resources is secondary. Combat sustainment employs both airland and airdrop delivery methods, but is usually associated with airdrop.

Deployment and Sustainment in Nonlinear Operations

In nonlinear operations, forces orient on objectives without geographic reference to adjacent forces (Figure 3.1). Nonlinear operations typically focus on creating specific effects on multiple critical points. Unlike linear operations, where emphasis is placed on *maintaining* the position of friendly forces in relation to other friendly forces, nonlinear operations emphasize *simultaneous* operations along multiple lines of operations from selected bases. Simultaneity overwhelms opposing C2 and retains the initiative, but these operations require significant airlift/aerial delivery support for each deployment and continued sustainment. Swift maneuver against several decisive points supported by precise, con-

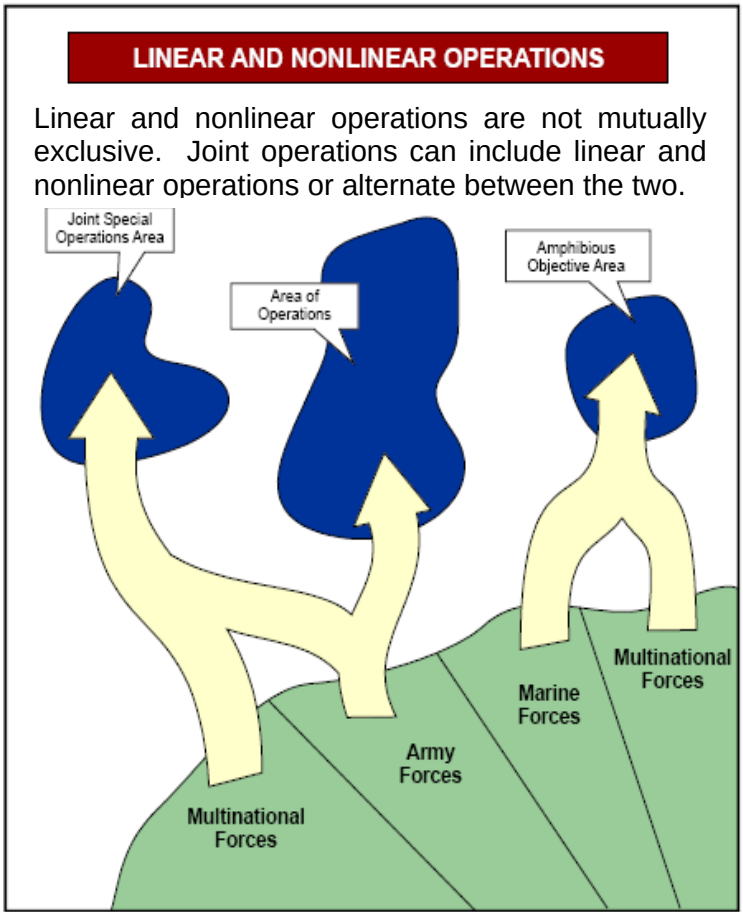


Figure 3.1. Linear vs Nonlinear Operations

Operation JUST CAUSE

In the closing days of 1989, the United States engaged in the largest American combat operation since Viet Nam, 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 by the President/SecDef: (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.

Showcasing a classic example of nonlinear operations, Operation JUST CAUSE was put into action. In the early hours of 19 December, 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 airlift 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 supporting nonlinear operations. 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.

—Various Sources

centrated fire can induce paralysis and shock among enemy troops and commanders. Nonlinear operations were applied during Operation JUST CAUSE. The joint forces oriented more on their assigned objectives (e.g., destroying an enemy force or seizing and controlling critical terrain or population centers) and less on their geographic relationship to other friendly forces. Nonlinear operations place a premium on air mobility.

Aeromedical Evacuation (AE)

Air Force AE operations provide airlift of sick or injured personnel to locations offering appropriate levels of medical care. These patients normally require supervision by aeromedical evacuation crewmembers (AECM). In contingencies, AE can operate as far forward as fixed-wing aircraft are able to conduct airland operations. The highly lethal environment of today's battlefield and the reduced theater medical footprint have made AE operations more critical than in the past.

Aeromedical evacuation during Bosnia operations

The AE system provides support for casualties both in flight and on the ground. Forces consist of AE crews providing inflight care to patients supported by flight surgeons (FS) and critical care air transport teams (CCATTs), as required, to care for critical patients. When appropriate, a mobile aeromedical staging facility (MASF) is usually placed at or near air bases for the care of casualties entering or en route through AE medical care, or transitioning to the normal military medical care system.

[An] essentially untold story [in Operation IRAQI FREEDOM] is aeromedical evacuation. We've transported more than 11,000 patients, about 1,500 of them wounded in battle. Without missing a beat for every patient in our care, we provided incredible medical capability on the ground up close to the battle, all the way through the AE system, to safe and secure hospitals for continued treatment. It's a remarkable story that continues today.

—General John W. Handy,
Commander, USTRANSCOM and AMC
Airlift Tanker Quarterly, Fall 2003

Nearly all mobility aircraft can be configured to support AE operations provided trained AE personnel are available. AE-specific CRAF aircraft may also be used, once activated, during contingency operations. AE CRAF aircraft are configured, using special shipsets, with all the required systems to perform casualty evacuation. When aircraft are used exclusively for dedicated AE missions they should be marked with the Red Cross. Planners and crew must be aware of legal constraints and protections inherent with the use of this symbol.

Special Operations Support

Specific airlift forces provide unique airland and airdrop support to special operations forces (SOF) for joint/multinational training, contingencies, stability operations, and other missions as directed. Since relatively few airlift assets, such as the MC-130E/H Combat Talon I/II and MH-53 J/M Pave Low helicopters are dedicated to this operation due to specialized training and equipment, the principle of economy of force is particularly applicable. When performing special operations support, specially trained airlift crews perform as integral members of a larger joint package. Because these airlift operations are routinely conducted under adverse conditions in a hostile environment, extensive planning, coordination, and training are required to minimize risk. Airlift used in a special operations role provides commanders the capability to achieve specific objectives that may not be attainable through more conventional airlift practices. When airlift is needed, SOF units usually request support through the joint force special operations component commander (JFSOCC) and the special operations liaison element (SOLE) in the AOC. When SOF units require intratheater airlift in excess of available assets, or their airlift requirements exceed the capacity of assets in the theater, the JFSOCC or the SOLE in the AOC will coordinate appropriate support. Airlift forces capable of performing specific special operations receive appropriate training and equipment to maximize SOF integration. Airlift forces may be attached to the joint special operations task force (JSOTF) or JFC for specific operations.

MISSION TASKING CATEGORIES

Normally, movement requirements are fulfilled through regularly scheduled missions over fixed route structures with personnel/cargo capacity available to all common users. These regularly scheduled taskings, known as channel missions, are validated through the appropriate Service organization to USTRANSCOM. During a contingency, an air mobility express (AMX) channel may be established to move “war stopper” items rapidly to an AOR. 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) or special assignment airlift missions (SAAM). For joint force training, joint airborne/air transportability training (JA/ATT) missions are used to exercise the joint force using airlift aircraft. Finally, exercise and contingency missions cover the wide variety of operations used to exercise the Air Force and joint force, as well as respond to global crises. Requests that cannot be satisfied by any of the above missions may be referred to other transportation modes of the DTS. The categories below are listed first by the common user/TWCF-funded missions (channel, SAAM, exercise and contingency) followed by the non-common user missions (SAM, JA/ATT). Airlift missions are subject to fee for use. SAAMs, exercise, and contingency missions are based on actual cost billed in flying hour increments. Channel missions (including contingency channels) are commercially competitive but are billed in pound/mile vice flying hour increments.

Channel

Channel missions, as mentioned above, are regularly scheduled taskings flown over fixed routes and AMC uses two types of channel missions to meet operational requirements: requirement-based and frequency-based. A requirement-based channel is established when a specified amount of passengers, patients, or cargo destined for one location warrants movement. A frequency-based channel is established to serve locations with high activity levels or regular sustainment needs. These channels can serve intertheater or intratheater needs. The majority of airlifted sustainment moves on channel missions. Both channel types use DOD transportation movement priority classifications.

Air Mobility Express (AMX). At the request of the supported combatant commander, the Commander of USTRANSCOM can establish a special channel mission called Air Mobility Express to move critically needed items rapidly to an AOR. The supported combatant commander may apportion part of his or her CJCS-allocated lift on AMX by pallet positions to each component. For AMX missions to be effective, the supported combatant commander should establish a theater distribution system to deliver express cargo from aerial port of debarkation (APOD) to final destination.

Special Assignment Airlift Mission (SAAM)

SAAMs are operated to satisfy unique operational requirements for pickup and delivery at locations other than those established within the established channel structure. SAAM movements may be driven by constraints on the user, time, geographic location, passenger or patient requirements, or type of cargo. SAAMs are prioritized through the DOD transportation movement priority system.

Exercise and Contingency Support

Exercise and contingency missions involve deployment, sustainment, and redeployment via intertheater or intratheater airlift. Geographic combatant commanders normally develop an operation plan (OPLAN) or operation order (OPORD) with specific logistical requirements for operations directed by the President, the SecDef, or the JCS.

Deployment and redeployment transportation requirements are planned using the JOPES. Supported commanders validate their requirements to USTRANSCOM through the TPFDD. The TPFDD details the combatant commander's deployment/redeployment priorities that enable AMC planners to build air movement plans. AMC plans and moves sustainment requirements through the channel system by establishing frequency or requirements channels. Regardless of the method used to identify the requirement, the 18 AF TACC and AMOCC schedule assigned airframes, missions and support necessary to manage the air mobility flow.

Special Airlift Mission (SAM)

SAMs support the White House and other government entities normally through operations of the 89th Airlift Wing (AW). SAMs constitute a small percentage of AMC missions and are not available to combatant commanders for support, but are discussed here for clarification purposes. SAM operations are outside the normal command authority of AMC's C2 structure; however, the 18 AF TACC is responsible for flight following and providing support as needed. Special airlift missions normally use specially configured aircraft with extensive air-to-ground communications to support the President and Vice President of the United States, cabinet and congressional delegations, and other senior statesmen. These missions are time-critical, often classified, and frequently require operations at civilian airports.

Joint Airborne/Air Transportability Training (JA/ATT)

These airlift missions are CJCS-directed to provide continuation and proficiency training to airlift aircrews, support personnel, and Service common users. The 18 AF TACC or AMOCC coordinates with users to provide airland, airdrop, aircraft load, and Service school training and support.

DELIVERY CONCEPTS

Payloads are delivered via two methods: airland or airdrop. Each concept has its distinct advantages and disadvantages. A number of tactics, techniques, and procedures are associated with each delivery type to account for the JFC's objectives, user requirements, airfield capabilities, available drop zones, weather, terrain, enemy threats, and aircraft capability. A planner should look at those factors to determine which method is more appropriate.

Aerial delivery normally requires air superiority. Emerging capabilities such as GPS-guided airdrop will allow the Air Force to combine the precise delivery of airland with the reduced threat exposure of airdrop. Currently the Air Force is more capable of suppressing the air-to-air and medium altitude surface-to-air threat than the low altitude, small arms, anti-aircraft artillery and infrared surface-to-air missile threat. Long range, low altitude operations over adversary controlled territory are likely to remain risky for air mobility aircraft for some time.

Airland

Airland delivery occurs when a transport or tanker aircraft lands and unloads its cargo. **Airland delivery, as opposed to airdrop, is the preferred method of aerial delivery when conditions permit, because it is the most efficient, safest, and least expensive way to deliver personnel and cargo.** It minimizes the risk of injury to personnel and damage to equipment, eliminates payload dispersal, and offers an increased availability of resources. This delivery method can be conducted at a variety

of landing destinations from well-established airbases to tactical deliveries on unimproved, dirt strip assault landing zones (ALZs). Extended airland operations require secure, suitable, and conveniently located airfields with appropriate air mobility support assets to facilitate offload. Several variations in the ground operations of airland operations exist. Sound operational procedures, well planned airbase defense, and rapid offloading and onloading techniques associated with various airlift aircraft can minimize some of the constraints below. Commanders should view airland delivery as the method of choice for most air movements. See Chapter 6, Air Mobility Planning, for details.

Operation DESERT STORM's Left Hook

From 18–28 January 1991, C–130s 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 mission corridors at 10-minute intervals in radio silence. During the airlift, C–130 sorties increased from 200 to more than 300 daily and peaked at more than 350 sorties in one 24-hour period. Nearly 14,000 troops and over 9,300 tons of cargo were moved. 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."

—AMC Historian

Advantages of Airland:

- ✪ Allows a greater degree of unit integrity and permits units to rapidly deploy after landing.
- ✪ Carries the least risk of injuring personnel and damaging loads.
- ✪ Requires minimal specialized training and equipment for transported personnel.
- ✪ Requires less special rigging and packaging of materiel than airdrop.
- ✪ Permits the maximum utilization of allowable cabin loads (ACLs) by eliminating the volume and weight penalties of preparing loads for airdrop deliveries.
- ✪ Maximizes the opportunity to backhaul cargo and evacuate personnel.

Constraints of Airland:

- ✪ Requires suitable airfields or ALZs that are moderately level, unobstructed, able to sustain the aircraft's weight, and available for the anticipated operation.
- ✪ Increases intervals between aircraft deliveries depending on an airfield's infrastructure and support capability.
- ✪ Requires mission support such as ground-handling equipment, transportation assets, and onward movement and distribution networks.
- ✪ Prolongs exposure to air or ground attacks.

Airdrop

Personnel airdrop

Airdrop is the delivery of personnel and materiel from an aircraft in flight to a drop zone (DZ). Most airdrop procedures use parachutes to deliver loads to the ground, such as heavy equipment, container delivery systems, and personnel. Another airdrop procedure is free fall delivery. This involves dropping relatively small items, such as packaged meals or unbreakable objects like hay bales without the use of a parachute. Airdrop allows commanders to project and sustain combat power into areas where a suitable ALZ or a ground transportation network may not be available. This delivery method allows rapid insertion of combat forces to numerous target areas.

Advantages of Airdrop:

- ✪ Uses principle of surprise in supporting combat operations.
- ✪ Minimizes aircraft and personnel exposure to threats at the target area.
- ✪ Permits sustainment deliveries to units operating away from airfields and ALZs.
- ✪ Permits the delivery of combat forces and materiel, concentrated and in mass, in minimal space and time.
- ✪ Permits the delivery of personnel and materiel in conditions that would prevent airland operations.
- ✪ Eliminates the need for airlift ground support infrastructure and personnel.

Constraints of Airdrop:

- ✪ Carries an increased risk of injury to personnel or damage to cargo.

- ✪ Requires special training for riggers, transported personnel, and the aircrews.
- ✪ Limits cargo loads because additional rigging is required for airdropped materiel.
- ✪ May decrease aircraft range due to low-level ingress/egress and formation tactics employed.
- ✪ Increases mission planning time and complexity, requires additional intelligence preparation.

The Siege at Khe Sanh

In 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 materiel, 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

Operation ENDURING FREEDOM—HUMRO

As the first bombs struck targets in Afghanistan in October 2001, two AMC C-17s, under fighter escort, were executing humanitarian relief operations (HUMRO)—combat airdrops of humanitarian relief supplies to the Afghan people. Before the campaign began, the people of Afghanistan faced a crisis of epic proportions, with an estimated 1.5 million Afghan people in imminent danger of starvation as winter approached. Taliban rule had severely damaged what little remained of the Afghan economy. Because they had cut off foreign humanitarian assistance, the only way to reach the Afghan people was through a massive airdrop of food and supplies.

On 28 September 2001, two C-17s deployed to Ramstein Air Base, Germany as part of the 437th Expeditionary Airlift Squadron (EAS). The next eight days were spent determining routing, fuel requirements, mapping threats, and integrating missions into the OEF air tasking order (ATO). They conducted night vision goggle training and developed high-altitude airdrop procedures that would be tested for the first time under actual combat conditions.

Planners chose the C-17 Globemaster III for the HUMRO airdrops because of its range (extendable by aerial refueling), speed, cargo capacity, and ability to airdrop humanitarian daily rations (HDRs) from a high altitude. From Ramstein it was over 5,000 miles to the proposed drop zones in northern Afghanistan. In a 20+ hour, double aerial refueling (AR) mission, each C-17 would deliver nearly 17,000 HDRs to the Afghan people. They also chose to employ the tri-wall aerial delivery system (TRIADS) to drop the HDRs. First employed by C-130s over the Balkans but new to the C-17, TRIADS consists of a tri-walled cardboard box filled with 420 HDRs. Each box opened when exiting the aircraft, dispersing HDRs over a large area. Each C-17 carried 42 TRIADS boxes that delivered over 17,600 meals. The effort to build, fill, and load TRIADS boxes was a success story unto itself for US Air Force, US Army, and German Army riggers who built up to 400 TRIADS containers a day.

On 7 October, the C-17s dropped the first of the over 2.4 million HDRs delivered between 7 October and 21 December 2001. Over the next 76 days, the 437 EAS flew 200 missions, 132 TRIADS missions and 68 other airdrops of wheat, blankets, cold weather gear, and even dates to mark the end of the Muslim holiday of Ramadan. Without question, the C-17 HUMRO airdrops over Afghanistan were a diplomatic, political, and military victory.

—AMC Historian

Ultimately**,** the decision to use airdrop is based on the operational environment and the supported commander's requirements. This method is expensive and exposes the aircraft, aircrew, and airdropped troops and materiel to potential damage not encountered in airland operations. In addition, specialized aircrew training and risk management assessment is required. If airland 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.

AIRLIFT EMPLOYMENT CONCEPTS

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. Direct delivery may employ airland or airdrop delivery methods. For example, personnel can be airlifted from CONUS and delivered directly to the theater by either landing at a forward operating location or airdropping them. A number of planning factors and the JFC's objectives determine which method, hub and spoke or direct delivery, is more appropriate.

Direct Delivery

Direct delivery is normally an intertheater flight that bypasses en route stops by airlifting personnel and materiel from the aerial port of embarkation (APOE) directly to forward operating bases (FOBs) within a theater. Direct delivery shortens in-transit time, reduces congestion at main operating bases, and enhances the sustainment of forward bases. The advantages of direct delivery are quicker arrival and an avoidance of en route stops, which lend themselves to unscheduled aircraft maintenance and lodging problems for large passenger loads. On the other hand, FOBs normally have more limited aircraft maintenance, cargo and passenger handling, parking, and fuel servicing capability than a hub airfield, which may complicate mission planning. Direct delivery may also include increased threat to aircraft and necessitate longer, less flexible flight profiles, which can reduce payload capability or require air refueling and augmented airlift aircrews, thereby increasing resource requirements. Direct delivery is the method of choice for timely, effective delivery of cargo and passengers. However, there is a planning, flexibility, and resource bill to pay for this effectiveness.

Direct delivery intertheater air mobility missions are coordinated between the AOC's AMD and the DDOC, if one exists, and tasked by the 18 AF TACC. 18 AF/CC on behalf of AMC normally maintains OPCON of direct delivery missions during execution, though TACON may be granted to the COMAFFOR for combat airdrop or other special missions.

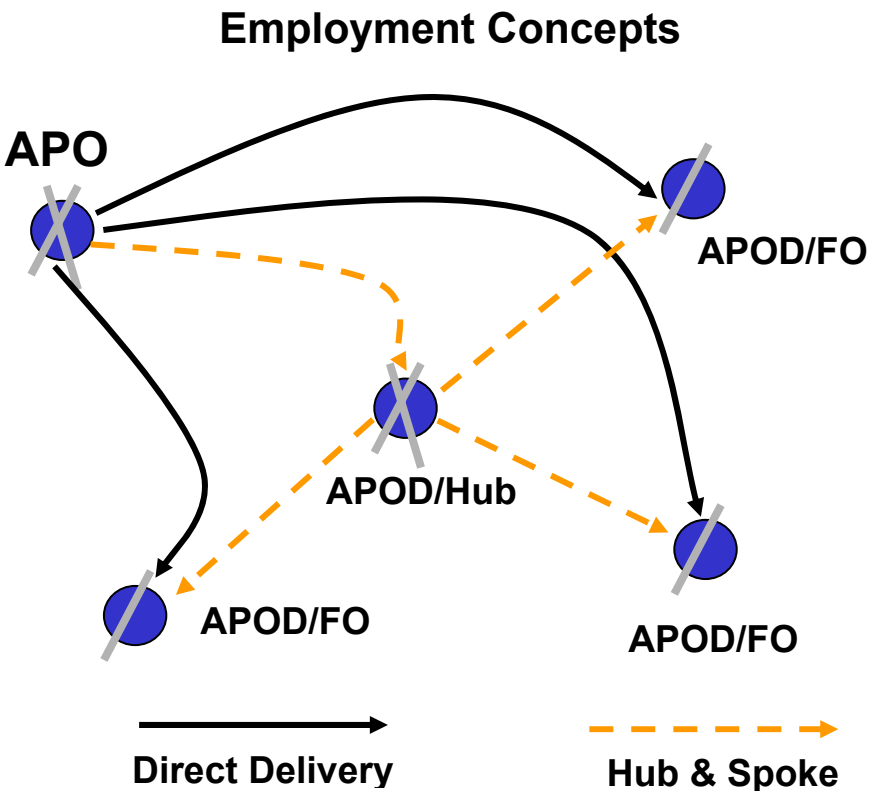


Figure 3.2. Illustration of Hub & Spoke and Direct Delivery

Hub and Spoke

Hub and spoke operations integrate both intertheater and intratheater airlift operations. Starting from APOEs, the movement of cargo and personnel progresses through one or more en route staging bases to arrive at a main operations base (the hub) or APOD within a theater. The hub is the focal point for follow-on intratheater airlift missions. Cargo and personnel are processed and readied for transshipment by intratheater assets to FOBs—the spokes, throughout the theater. Hub and spoke optimizes air mobility operations when supporting multiple operational commanders and operations.

For the first time in the history of war, this country has fought in a land-locked area [Afghanistan] where every single thing going in and coming out has gone by air. Food, water, ammunition, troops were all transported by air, and that's really incredible.

—James G. Roche, Secretary of the Air Force, 11 April 2002

CHAPTER FOUR

AIR REFUELING

As the air commander for both OEF [Operation ENDURING FREEDOM] and OIF [Operation IRAQI FREEDOM], I can tell you that the tankers were the backbone for the joint and combined effort.

—General T. Michael Moseley
CFACC, Operation ENDURING FREEDOM

GENERAL

Air refueling is the passing of fuel from an airborne tanker aircraft to a receiver aircraft. This Air Force function supports the national military strategy across the range 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, persistence, and flexibility of other aircraft** performing missions like combat air patrol or intelligence, surveillance, and reconnaissance operations.

Air refueling is an integral part of global air mobility and brings added capability to combat, combat support, and air mobility for all airpower operations. It is equally applicable to all stages of a contingency: deployment, employment/sustainment, and redeployment. Air refueling enhances the unique qualities of airpower across the full range of military operations. It enables operations and multiplies the effects of operations at the tactical, operational, and strategic levels of war, and will continue to play an important role into the future.

EFFECTS OF AIR REFUELING

The ability of air refueling to range the force and provide presence and persistence occurs through its force enabling, force multiplier, and force extension capabilities. These provide the JFC the ability to maneuver and mass forces, using surprise and economy of force, at a time and location where the enemy is least prepared, to deter, dissuade, or destroy.

Air refueling is a *force enabler* permitting aircraft to operate beyond their unrefueled ranges. It is a crucial part of global strike and global mobility operations. Positioning forces outside the enemy's reach permits a greater portion of combat assets to concentrate on offensive rather than defensive action, thereby enhancing initiative

and force protection and again enhancing economy of force. It is also a *force multiplier* permitting larger takeoff payloads for receivers and added endurance, by enabling payload to be maximized.

Multinational refueling with tanker capable of both boom and drogue refueling

Preparing a KC-135 for refueling a probe equipped receiver

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. Since takeoff fuel is limited by the amount of payload carried, tankers operating in the "dual role" of airlifter and tanker may require force extension. A number of tanker aircraft are equipped as receivers and therefore can be force extended. Force extension provides the benefit of extending the deployment range of receiver packages by ensuring the supporting tankers do not have to make en route fuel stops.

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

Both Afghanistan and Iraq were air mobility wars. Every single flight into these areas of operation needed some kind of air refueling– fighters, bombers, lifters and even other tankers needed air refueling. Navy carrier-based fighters needed dramatic air refueling to get them the "legs" they needed.

—General John W. Handy,
Commander, USTRANSCOM and AMC
Airlift/Tanker Quarterly Fall 2003

AIR REFUELING OPERATIONS

Air refueling creates options for the use of other aircraft in operations. Whether keeping surveillance aircraft on station to observe adversaries, refueling airlifters flying long direct delivery missions, or enabling sustained strike operations, the tanker is a valuable addition to the Air Force capability.

The following six operations capture the tanker function:

- ✪ Nuclear operations support.
- ✪ Global strike support.
- ✪ Air bridge support.
- ✪ Aircraft deployment support.
- ✪ Theater support.
- ✪ Special operations support.

Nuclear Operations Support

Air refueling assets are incorporated into nuclear operations 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. Through air refueling the bombers can maintain this orbiting status until they are directed to fulfill their mission or are recalled. Despite the stringent command and control requirements for air refueling assets supporting nuclear operations, OPCON of tankers should remain with CDRUSTRANSCOM.

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

Global Strike Support

Air refueling assets are 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 operations from CONUS is particularly crucial in supporting

national objectives. Air refueling assets supporting global strike operations should normally operate in support, with OPCON retained by AMC. Air refueling provides CONUS-based airpower forces a global presence without having to rely on an in-theater presence.

Operation DESERT STRIKE

During 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 prepositioning leg to Anderson Air Base, Guam. In addition, a C–5 aircraft airlifted 100 maintenance and mission support personnel from CONUS to Andersen AFB. 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 prepositioning leg to Anderson AB while 17 tankers deployed to Guam offloaded nearly 1.5 million pounds of fuel for the airstrike.

Operation DESERT STRIKE demonstrated the synergy that results when global attack assets are 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.

—AMC Historian

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 the number of aircraft on the ground at forward staging bases, minimizes potential en route maintenance delays, and enables airlift assets to maximize their payloads. This significantly increases the efficiency and effectiveness of airlift operations by making

possible the direct delivery of personnel and materiel. It is an effective method for closing forces in the initial days of a conflict; however, the level of effort required is significantly increased, and such operations may reduce the number of tankers available for other potential missions like combat support.

Force extension supporting air bridge operations

Aircraft Deployment Support

Air refueling assets extend the range of deploying combat and combat support aircraft, often allowing them to fly with few or no stops en route to an AOR. Air refueling increases the deterrent effect of CONUS-based forces and allows rapid response to regional crises. The capability of aircraft to fly non-stop to a theater may eliminate the need to obtain landing rights from countries remaining neutral in a conflict. Successful execution of the AETF concept is dependent on deployment support. The deployment support operation is considered a separate and distinct operation because the coordination, communication, and search and rescue responsibilities differ based on receiver capabilities. Normally, this operation is associated with the movement of fighter aircraft between theaters in the form of missions named "Coronets." Deployments of heavy aircraft (bombers, airlifters) normally use an air bridge operation to support the deployment.

Coronets move fighter aircraft in support of contingencies, rotations, exercises, or aircraft movements for logistics purposes. These flights often include a cargo and passenger carrying element as well as the refueling. They normally have long lead times for planning, tasking, and execution, and the tanker portion of the flight is normally planned by the 18 AF TACC. Coronet operations usually have a higher priority than routine training operations. Depending on operational requirements, the 18 AF TACC may position tanker aircraft and crews in preparation for deployment and may coordinate with the theater AMOCC or AOC for air refueling support, if required. Typically the tanker aircraft accompanies the receivers for the majority of the flight, especially during an oceanic crossing.

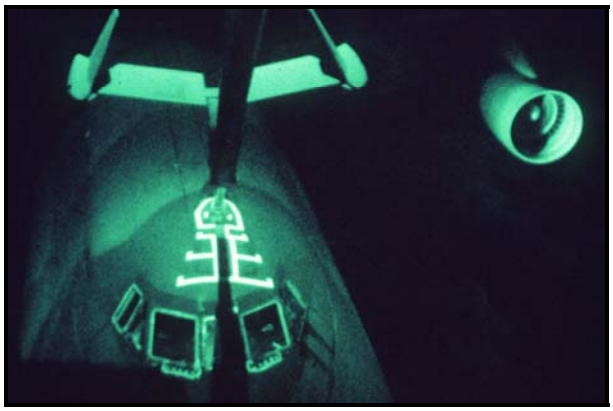
Theater Support of F-15s

Theater Support

During a combat operation, the highest priority for intratheater air refueling forces is normally supporting combat and combat support aircraft executing the air portion of the JFC's campaign. This is especially true during the initial phases of a conflict.

Combat aircraft may be based well outside enemy threats to protect them from hostile attack, and may need tankers to give them the range needed to engage their targets. Air refueling increases the endurance of air combat support assets. Airborne C2, battle management, and reconnaissance aircraft are used to manage, direct, conduct, and assess air combat operations. Without in-flight refueling, these assets have limited endurance and require extensive regeneration periods between sorties.

Tankers allocated for theater support may occasionally be called upon to provide support to air bridge operations, especially supporting direct delivery missions. The DIRMOBFOR-Air judges the capabilities of and requirements of tankers assigned or attached to the theater to determine their ability to provide air bridge support and recommend proper allocation to the COMAFFOR.



Tanker support to special ops airlift

When tanker requirements for theater support operations exceed availability, the COMAFFOR or JFACC, with the assistance of the DIRMOBFOR-Air, may request further augmentation from the JFC or higher authority, or consider the JFC's overall campaign objectives and decide how to allocate existing tanker resources.

Special Operations Support

Air refueling enables SOF to maintain a long-range operating capability. The Air Force maintains air refueling crews who are trained to air refuel fixed and rotary-wing special operations aircraft. Successful operations require specialized equipment, crew training, and operational procedures. When assigned or attached to a JTF, these forces may fall under a special operations functional component commander who reports directly to the JFC.

ADDITIONAL TANKER ROLES

All tanker aircraft are capable of performing additional roles such as passenger lift, cargo movement, and aeromedical evacuation when modified. Some are modified to act as a communications link facilitating C2 and ISR. When tankers transport a combination of passengers or cargo while performing air refueling, it is specifically called "dual role." **Command and control of air mobility aircraft performing multiple role missions on the same sortie must be vested in one authority, normally the COMAFFOR.**

EMERGENCY AIR REFUELING

Due to the critical contributions of AR to combat operations, a plan for emergency AR should be developed. Fuel emergencies can result from missed refuelings, en route weather, battle damage, or excessive time engaged with enemy aircraft or targets. While dedicated ground alert aircraft normally meet emergency air refueling requirements, excess fuel capacity of airborne tankers can provide at least a partial emergency air refueling capability.

Emergency AR—Intertheater Operations. Whenever possible, intertheater missions should be planned in close proximity to existing air bridge routes. This allows tankers positioned for air bridge support to also provide emergency air refueling support. When intertheater missions cannot be planned along air bridge routes and the operation is deemed important enough to provide emergency air refueling support, planners should use a combination of ground and airborne spare aircraft. Ground spare aircraft are maintained in various stages of readiness depending on operational requirements. Airborne spare aircraft consist of one or more tankers that accompany the air refueling formation, but do not participate in any air refuelings unless required to do so. No matter which option is used the concepts should be adequately delineated in mission directives so tankers, receivers, and participating command and control elements are thoroughly familiar with the procedures to be used in a fuel emergency.

Emergency AR—Intratheater Operations. The dynamic environment of intratheater operations provides a more pressing need for emergency air refueling support and less time to react. Intratheater operations are characterized by shorter distances and more assets available to respond to requests for emergency air refueling support. Leadership needs to prepare for a variety of contingencies due to the unpredictability and requirement for rapid response. Often the nearest airborne tanker may be required to offload fuel, with reallocation of scheduled offloads distributed to other aircraft or a ground spare once it reaches the refueling areas. The best tanker aircraft for ground alert duties are those capable of quick response times, high cruise speeds, and a takeoff fuel load large enough to accommodate all offloads. Ground alert tankers and crews may be dedicated solely to this function. Because of airspace limitations in an AOR/JOA the best means of providing an airborne emergency air refueling capability is through a “reliability tanker.”

Reliability Tanker. Refuelers are normally based well away from tactical operations areas for safety reasons. Ground spares might not be able to reach an area in a timely manner should tasked tankers not be able to provide adequate offload or receivers miss scheduled refuelings. Reliability tankers operate in a given area with no scheduled receivers and act as flying spares. Because of the cascading effects of the loss of air refueling, reliability tankers should be used when assets are available. If a reliability tanker can also accept fuel the capability is leveraged through extended endurance.

Spare Aircraft. When scheduling aircraft and aircrews, planners may be tasked to provide for spares in the schedule. Using the *rolling spare concept* (each aircrew and

aircraft sparing the sortie immediately ahead of it in the schedule), no additional aircraft or crews are required, but the additional time required to accomplish this decreases the number of sorties each aircraft and crew can fly in a given period of time. With a *dedicated spare*, only one aircraft and crew are used at a time, but they cannot be used for any other duty. Receiver requirements may dictate the need for multiple spare aircraft and aircrews as well as multiple (drogue/boom) configurations.

AIR REFUELING PLANNING

Planning Factors

To optimize the use of tanker assets, several fundamental planning factors should be considered. Thoroughly understanding these issues allows efficient and effective operations and minimizes unfilled user requests or the cascading effects of missed refuelings. The prime tenet to remember is that air refueling supports missions across the broad spectrum from theater to national objectives.

Receiver Requirements. Receiver requirements dictate how much fuel will be offloaded, where the refueling will take place, and when the rendezvous will occur. The receiver aircraft's performance characteristics dictate air refueling speed, altitude, rendezvous type, and allowable maneuvering during the refueling. The receiver's operation may also dictate special tactics, emission control (EMCON) requirements, or specialized equipment to achieve desired effects. When possible, the tanker aircrew should know receivers' requirements prior to takeoff to ensure success of the operation.

Formation Refueling. Tanker formation refueling allows for the maximum number of aircraft within a given airspace optimizing air refueling capabilities and maximizing capacity. Planners should consider tanker formation as a way of enhancing capabilities when constrained by mission requirements and/or airspace.

Once receiver requirements are known, planners can match air refueling assets against those requirements. Allocation of tanker assets should be based on capabilities/requirements and not sheer numbers or specific types of platform. Different tanker weapon systems possess different capabilities. Within a weapon system, modifications installed on a few aircraft may dictate a particular force mix, which includes that model airframe. Key factors for planners to consider in building the tanker schedule are:

Boom Versus Drogue Refueling

A small portion of the tanker fleet can perform both boom (most Air Force aircraft) and drogue refueling (most Navy/Marine Corps and foreign aircraft) on the same mission. When missions require both capabilities, planners should consider using these aircraft, if available. Even with the ability to refuel both types of receivers, it is impossible to refuel them both at the same time. Planners should include time to reconfigure the tanker when establishing control times. Additionally, for safety

purposes, mixed formations of receivers should not join on the tanker at the same time. Additional information is found in applicable tactics, techniques, and procedures (TTP) and Air Force instructions.

Total Offload Versus Booms in the Air

During combat operations, effectiveness of air refueling operations may outweigh efficiency of using the fewest aircraft to supply the requested offload. An example would be refueling a strike package—the more efficient method is to send only as many tankers as needed to fulfill the total offload requirement. However, because of the necessity to have all strike aircraft push to the objective at the same time it is effective to have more refueling aircraft ("booms in the air") than required by total offload.

Special Operations

While not all SOF missions require the use of specific configurations or specially trained crews, it is the planners' responsibility to determine exact requirements. Thus for most instances, planners should ensure the availability of special operations configured aircraft and properly trained aircrews prior to assigning missions to subordinate units.

Employment Concepts

Joint and Multinational Operations

Joint and multinational operations require unity of effort. When working with other Services and nations, there is danger in differences in procedures and terminology. Therefore, tactics, terminology, and procedures should be standardized when working in joint or multinational operations. For example, Allied Tactical Publication (ATP) 56, (under consideration to be renamed ATP 3.3.4.2), *Air to Air Refueling*, was published for North Atlantic Treaty Organization (NATO) members. While detailed procedures depend on aircraft type, mode of employment, and national requirements, most allies should achieve sufficient commonality. Commanders of multinational forces should determine a common set of doctrine, tactics, and procedures for operations. Because airspace availability is a limitation in refueling operations, standardizing multinational formation procedures allows assets to operate in compressed airspace. Standardization is most important when refueling multiple receivers or multiple formations. Exercises should be used when feasible to foster common understanding.

Air Refueling Airspace

Most intratheater air refueling is conducted in airspace specifically designated for air refueling. In peacetime, air refueling information, i.e., airspace boundaries, altitudes, and communication data, is published in flight information publications. During a contingency, air refueling airspace close to the enemy changes frequently to avoid predictability as well as responds to the changing tactical situation; additionally, routing to and from the air refueling airspace may change in response to air operations and

enemy threats. Altitudes and communications frequencies are usually classified. Applicable air refueling information is published in the daily and weekly SPINS and ACO, and should be followed carefully to avoid conflicts with other intratheater operations. To avoid midair collisions this information should be explicit, to include rendezvous procedures, when forces operate from different bases, or when joint or multinational missions are tasked.

There are generally two types of refueling areas, tracks and anchors. The choice of track or anchor depends on several factors such as number of tankers, offload required, receiver number/type, weather, time available to accomplish rendezvous and refueling, and availability of airspace. At times multiple types may be used to facilitate the same operation. For example, pre-strike refueling may be accomplished in an anchor to facilitate package formation, and post strike refueling may be accomplished along a track to facilitate recovery of receiver aircraft. In addition, special purpose air refueling areas may be established through the use of an altitude reservation.

Altitude Reservation (ALTRV)

Most intertheater air refueling operations require an ALTRV to reserve air refueling airspace. ALTRVs are submitted in accordance with international aviation airspace and host nation rules when conducted over territorial airspace. Aircrews ensure that ALTRV approval is received prior to conducting air refueling operations. ALTRVs do not relieve aircrews of the requirement to obtain diplomatic clearances or to file flight plans.

Tracks

Air refueling along a designated air refueling track is the preferred method for intertheater refueling. Normally tracks have a designated air refueling initial point (ARIP), air refueling contact point (ARCP), and a designated air refueling exit point (AREX). Tracks need not be straight but multiple turns are discouraged because it increases the difficulty and risk of the operation. Tracks are also used when receiver aircraft are required to maintain a predetermined aspect to an objective area. Finally, air refueling tracks are best when either tanker or receiver performance would be impacted by multiple turns.

Anchors

In anchor areas the tanker flies a racetrack pattern within a defined airspace while waiting for receiver aircraft to arrive. Once joined the tanker flies an expanded racetrack while refueling occurs. Anchor refueling is normally used for intratheater operations where airspace is confined or where receivers need to operate from a central location. Anchor areas are best suited for small, highly maneuverable aircraft, especially in marginal weather.

Rendezvous Types

While there are several different rendezvous types available to join tankers and receivers, the following organizes the four methods by conditions when they are "best case." Consult applicable TTP publications for definitions.

- ✪ En route/on course techniques should be used when refueling space is limited or when follow-on refueling formations are separated by time. It is also the most efficient method for supporting air bridge missions. See figure 4.1.

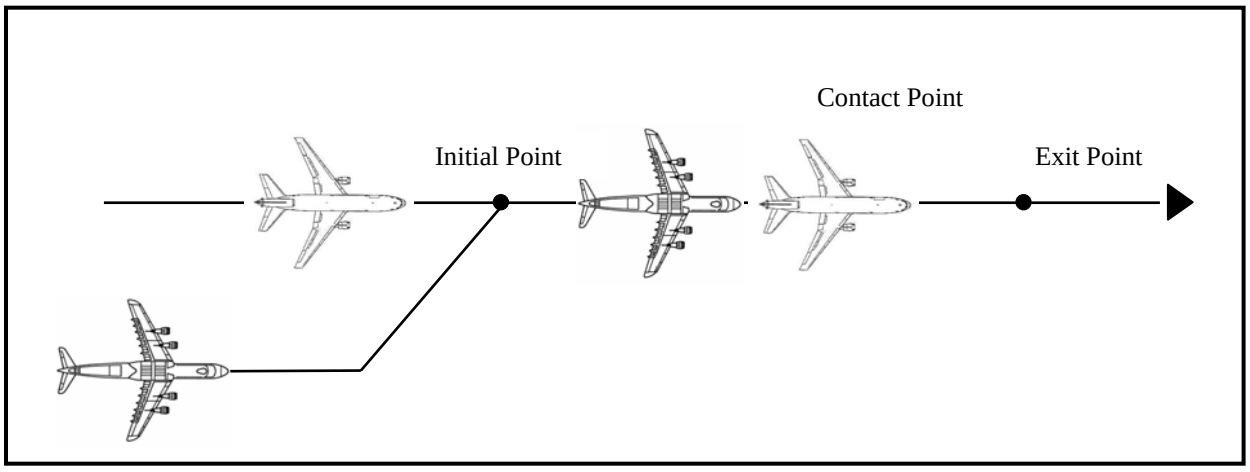


Figure 4.1. En Route Rendezvous

- ✪ Point parallel techniques are best used in the absence of radar control and with receivers that do not have equipment to determine tanker relative position and altitude during the rendezvous. See figure 4.2.

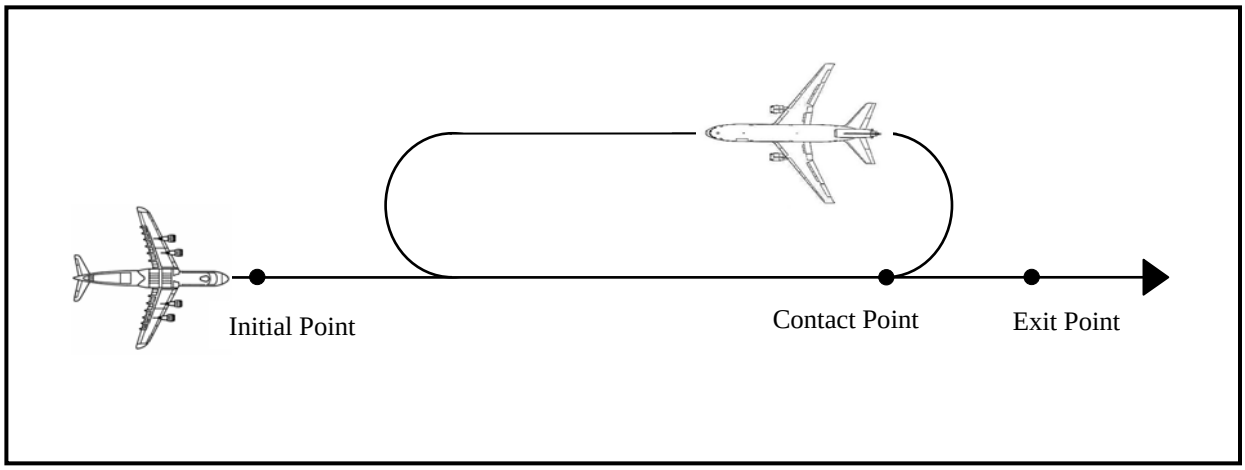


Figure 4.2. Point-Parallel Rendezvous

- Radar directed rendezvous are used when neither the tanker nor receiver has sufficient equipment to safely conduct the rendezvous. They may be used when there are multiple refuelings and multiple receiver sets simultaneously.

- Receiver directed rendezvous are used when the receiver has sufficient onboard equipment to safely join on the tanker. These should be used during restrictive emission control conditions.

CHAPTER FIVE

AIR MOBILITY SUPPORT

Modern warfare is a war for airbases; the bulldozer must accompany the plane.... One of the elements of victory in North Africa was the speed with which our aviation engineers constructed airfields behind the front lines and pressed the attack.

—General Hap Arnold

GENERAL

Successful employment of the airlift and air refueling force is contingent upon establishing and maintaining an air mobility support force enabled by the master capabilities provided by agile combat support (ACS). The eight top-level ACS capabilities are *Command and Control, Create Forces, Establish Operating Locations, Posture Responsive Forces, Support the Mission - Forces and Infrastructure, Sustain the Mission - Forces and Infrastructure, Generate the Mission, and Protect the Forces* (for additional information, see AFDD 2-4, *Combat Support*). Specifically, air mobility support forces provide the responsive, worldwide foundation for airlift and air refueling operations. This force is divided between AMC, which controls the majority of assets in its global/functional role, and the geographic combatant commands that control sufficient assets to meet their specific regional needs. These forces, combined with the interrelated processes that move information, cargo, and passengers, make up the global air mobility support system (GAMSS). This structure consists of a number of CONUS and en route locations, as well as deployable forces capable of augmenting the fixed en route locations or establishing operating locations where none exists. These deployable forces are stationed both in CONUS and at select overseas bases, and are controlled by either AMC or one of the geographic combatant commands. **The prepositioning of GAMSS forces, whether at fixed locations with robust infrastructure or at en route locations with little infrastructure, supporting sustained airlift or aerial refueling operations, must be accomplished ahead of any combat force (whether Air Force or sister Service) deployment.**

The reduction in forward deployed forces following the end of the Cold War resulted in an increased dependence on air mobility to project US military presence throughout the world. In turn there grew an increased dependence on the GAMSS to provide rapid global air mobility. The mobile forces of the GAMSS enable the en route system to expand or contract as necessary, providing worldwide coverage and lending direct support to the rapid global air mobility concept.

GAMSS forces are drawn from active duty, Air Force Reserve, and Air National Guard components. Collectively, these components provide the forces that make up the fixed CONUS and overseas GAMSS organizations as well as the deployable forces

stationed primarily in CONUS. These components support operations throughout the range of military operations.

CORE FUNCTIONS OF AIR MOBILITY SUPPORT

The core functions provided by GAMSS are C2, aerial port, and maintenance. While these fixed and deployable functions are robust, the deployable assets are designed to be temporary in nature, with a planned redeployment or replacement in 30-45 days. En route locations normally are tasked to provide these services, however, these basic and other support functions (combat support, life support, intelligence, etc.) can augment in-place operations, creating a more robust throughput and support capability. The level of support can be tailored to match the workload requirements. Consequently, deployable GAMSS forces can provide a method for expanding capabilities at an existing location or establishing capabilities where none exists. To ensure continuity of operations, appropriate planners should coordinate the redeployment of GAMSS forces.

Command and Control

Whether OPCON is maintained by AMC or a regional COMAFFOR, the GAMSS forces usually provide initial communications to higher headquarters for deploying forces through organic, deployable communications equipment. In addition, they set up stand-alone command and control operations for airlift operations. GAMSS forces provide their own unique C2 systems to accurately plan, flow, and track air movements and provide ITV of equipment and passengers. It is imperative that GAMSS personnel be trained in setting up and operating all communications supporting operations since base opening and deployed operations rely upon it. Communication requirements may include the various radio and satellite communications systems, as well as mobility mission planning and execution systems supporting their airfield operations as well as those of supported air mobility aircrews that may transit or operate from their location. AMC-assigned mobility support forces normally use this capability to report to the 18 AF TACC, while theater-assigned support forces normally report to their theater AMOCC or AOC.

In addition to communications, a variety of other support functions contribute to C2. One of the most important features of the GAMSS is its support of ITV and mission following/planning. Commanders depend on accurate, timely ITV of assets to more efficiently manage those assets and associated supporting operations. Consequently, the effectiveness of the GAMSS relies significantly on the integration of C2 data into a comprehensive ITV picture. Without such integration, the ability to achieve rapid global mobility is compromised. (NOTE: In selected cases, AFSOC special tactics teams can provide a limited initial C2 capability, both traffic control and aircraft reporting.)

Aerial Port

Deployed aerial port operations

An aerial port is an operating location, usually an established airfield, which has been designated for the sustained air movement of personnel and materiel. Deployed aerial port operations are sized based on forecast workload requirements. GAMSS units possess a robust aerial port capability. GAMSS units are designed to establish and operate air mobility terminals and 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 marshalling yards and traffic routing for cargo, aircraft servicing, passenger manifesting, and air terminal operations center services. GAMSS aerial port personnel are also responsible for the transmission of departure and arrival information to GTN, to include the movement manifests and ITV data provided electronically by the moving unit. The deployable GAMSS aerial port services are not designed for long-term sustained aerial port operations. Commanders and planners should plan to backfill these deployed units quickly to allow them to redeploy and reconstitute for further use.

Maintenance

GAMSS maintenance at a forward location

Deployable GAMSS forces are often the first Air Force personnel to arrive at a given operating location and are limited in what they can bring, to include aircraft maintenance capability. Planners and units receiving maintenance augmentation from GAMSS forces should consider supplementing maintenance capability as soon as practical to ensure continued operations. Designed primarily to support mobility aircraft operations, GAMSS maintenance units are not intended to provide sustained maintenance.

GAMSS maintenance capability is contained in two deployable organizations, the contingency response element (CRE) and the maintenance recovery team (MRT). The CRE maintenance capability is more robust than that found in an MRT and consists mostly of cross-functional maintenance specialties designed to provide aircraft marshalling, parking, refueling, and limited aircraft

troubleshooting and repair capability. If specific aircraft repair capability is required at a forward location, an MRT is normally deployed with appropriate specialists, equipment, and parts to accomplish the repair.

GLOBAL AIR MOBILITY SUPPORT SYSTEM ELEMENTS

Several Air Force major commands possess GAMSS elements. AMC divides its forces into two expeditionary mobility task forces, each controlling assets in fixed overseas locations, as well as CONUS-based deployable assets. PACAF and USAFE are assigned their own GAMSS forces of deployable assets consolidated into CRGs. Not all GAMSS assets are at Air Force bases; many are at sister Service bases and even civilian air terminals. The deployable elements are kept in varying stages of readiness with at least one element able to deploy within 12 hours.

Expeditionary Mobility Task Force (EMTF)

The two EMTF commanders (15th and 21st), located on each coast of the CONUS, report to the 18 AF/CC. Each EMTF exercises ADCON, as delegated by 18 AF, of their respective fixed and deployable GAMSS elements, within their assigned areas of responsibility. 15 EMTF supports PACOM, NORTHCOM, and SOUTHCOM, while 21 EMTF supports CENTCOM, EUCOM, and JFCOM. Some EMTF forces are based at Air Force and Navy-sponsored commercial contractor terminals. All EMTF fixed locations are sized, manned, and equipped to support peacetime common-user air mobility operations. The deployable elements of the GAMSS are used to establish air mobility presence and infrastructure where none exists or to expand the fixed portion of the en route system. They include the mission support team (MST), the larger CRE, and the most capable deployable CRG. The EMTF subordinate units are theater air mobility operations groups (AMOG), CONUS air mobility operations squadrons (AMOS), and contingency response wings (CRW), each with subordinate CRGs. The 21 EMTF is also assigned a Combat Camera squadron.

- **Air Mobility Operations Squadron**. The AMOS is the organization that trains and equips personnel to fill AMD positions. It provides personnel to manage assigned mobility forces in support of contingency operations, humanitarian efforts, and unilateral, joint, and combined exercises.

- **Combat Camera Squadron**. A Combat Camera squadron provides visual information documentation covering air, sea, and ground actions of the Armed Forces of the US in combat or combat support operations and in related peacetime training activities such as exercises, wargames, and operations.

Air Mobility Operations Groups

The overseas AMOGs (715th and 721st) are composed of air mobility squadrons (AMS) and normally provide the fixed en route support of the air mobility force. AMOGs formulate plans, establish procedures, and direct the administration of their subordinate

AMS, operating locations (OL), and detached units in support of operations. The AMOG provides logistics, intelligence, and air transportation planning to meet operational requirements.

- **Air Mobility Squadron**. AMSs are situated at key overseas en route locations to operate air terminal facilities in support of the defense transportation system (DTS) for numerous DOD common users. AMS personnel generate, launch, and recover air mobility missions and en route support aircraft. Each AMS operates an Air Mobility Control Center (AMCC), which serves as the C2 conduit to the 18 AF TACC for air mobility mission tracking.

Contingency Response Wings (CRW)

AMC has two contingency response wings, the 615th and 621st. CRWs are organized, trained, and equipped to produce three deployable CRGs each. The CRW as an organization does not deploy, however it provides the resources for and coordinates the deployment of its subordinate units to provide those deployable elements of the GAMSS providing selected ACS mission elements. Additionally, air mobility liaison officers (AMLO) are normally assigned to the CRWs, though they are attached and move with their associated ground units. CRW elements are designed for a decreased transportation and logistic footprint and are not designed as long term assets. These deployable modules are normally planned for reconstitution in approximately 30-45 days or less, and should hand off all responsibilities to the receiving organization and redeploy for reconstitution in accordance with timing specified in the deployment order. If it is necessary to extend deployment of these assets beyond the 30-45 day design limits, the air component command where the assets are operating should coordinate with the command holding OPCON and if necessary request the SecDef extend the deployment timelines. Applicable planners should coordinate with the using command to ensure smooth transition of all CRW forces and equipment.

As discussed in Chapter 2, the C2 of GAMSS elements follows the normal C2 pattern of air mobility forces. In accordance with AFDD 2, GAMSS forces either remain under their own combatant commander's air component or, if they cross theater boundaries, are presented either in support or are attached, at the discretion of the common superior commander, the SecDef.

CRW subordinate units include the CRGs and in AMC, global support squadrons (GSS) which are the administrative and support functions for the CRW. A CRW may, dependent upon task, threat, and available support, deploy a CRG or CRE.

- **Contingency Response Group.** The CRG is an organization tasked to deploy in order to secure after seizure, assess, open, and initially operate airbases for the Air Force component of their combatant command. The CRG may initially represent the senior Air Force leadership and for this reason the CRG is normally commanded by an O-6. The groups consist of a standardized force module dedicated to the base opening task. This module includes a tailored selection of all forces needed after seizure, or handoff from seizure forces, to assess and maintain security of an

airfield, establish initial air mobility C2, and operate the flow of air mobility into and out of that airfield. CRGs may open an airfield for the Air Force, another Service or even a coalition partner. A deployed CRG contains two squadrons, a global mobility squadron (GMS) and a global mobility readiness squadron (GMRS). The GMS includes the operational and combat support mission elements of the aerial port, C2, and transient maintenance, while the GMRS includes selected mission elements of ACS. To ensure continuity of operations, CRGs should coordinate planning and agreements with the theater COMAFFOR/JFACC staff.

- **Contingency Response Element**. A CRE is a mobile C2 force responsible for providing continuous onsite air mobility operations management. It is a temporary organization commanded by a commissioned officer that deploys to provide air mobility mission support when command and control, mission reporting, and/or other support functions at the destination do not meet operational requirements. Normally a CRE is the smallest GAMSS unit able to enter into an agreement with the host unit. In addition to providing command, control, and communications capability, CREs provide aerial port, logistics, maintenance, force protection, weather, medical, and intelligence services, as necessary. CRE size is based on projected operations flow and local conditions.

OPERATION ENDURING FREEDOM

In December 2001, Mazar e-Sharif was one of the first airfields opened in Afghanistan. Shortly after the city was seized from hostile Taliban and al Qaeda forces, the coalition moved to establish a mobility hub for force introduction and aerial resupply. The airfield supported a Jordanian military hospital, French Marine forces, U.S. Special Forces, and a US Army brigade.

When the 20-member CRE arrived to open and operate the airfield, they found a war-torn area devoid of water, plumbing, electricity, communications, and only a primitive transportation infrastructure. The airfield was littered with derelict Soviet-era military aircraft, debris, and unexploded ordnance. The runway and taxiways were cratered from the recent bombing effort, and the airfield terminal was abandoned and considered of limited use to US forces.

The CRE stepped off the C-130 and went right to work under the most austere of conditions. They cleared the ramp, established their work areas, and began the airfield survey. US Special Operation Forces found quarters for the CRE in an abandoned school, and for the next several months they subsisted on MREs and bottled water. Despite the challenges, the AMC CRE responded superbly. As the lead agent for all airfield operations, the CRE managed not only the AMC airflow, but also special operations flights, coalition aircraft (French, German, Spanish, etc.), international commercial carriers (Iran, Turkmenistan, Kyrgyzstan, etc.), and international aid agencies. Under CRE management, Mazar e-Sharif became an important strategic hub for US and coalition forces in the Global War on Terrorism.

—AMC Historian

✪ **Mission Support Team**. An MST is a mobile C2 force that performs the same functions as a CRE—aerial port, maintenance and command and control, but on a smaller scale. MSTs are normally led by a noncommissioned officer and provide a level of command and control, aerial port, and maintenance services capable of supporting a "maximum on ground" (MOG) of one aircraft.

Additional GAMSS Elements

✪ **Aerial Port Squadron/Flight (APS/APF)** (ANG/AFRC). The units deployed from the APS' and the APFs provide the fixed structure, CRE, or MSTs core aerial port functions.

✪ **Airfield Survey Team (AST)**. Each AMOG and CRG possesses an airfield survey team as part of their capability. These personnel are trained and equipped to deploy to airfields, assess the capabilities of the airfield and its supporting facilities, and relay that information to the appropriate authorities who deploy any needed augmentation or engineer forces.

✪ **Air Mobility Liaison Officer (AMLO)**. An officer specially trained to implement the theater air control system and to control airlift assets engaging in combat tactics such as airdrop. AMLOs are highly qualified, rated air mobility officers with experience in combat tactics and assigned duties supporting US Army and Marine Corps units.

✪ **Airlift Control Flight (ALCF)** (ANG/AFRC). ALCFs are part of the GAMSS that are gained by AMC upon mobilization. The personnel deployed from the ALCFs perform the CRE or MST core C2 functions. Any additional capability beyond these core functions is sourced and tasked elsewhere (typically from the CRWs or various mobility wings) by 18 AF TACC and deployed as purpose-specific units.

✪ **Mobile Aeromedical Staging Facility (MASF)**. The MASF is a rapid response patient staging facility utilized across the spectrum of conflict. The MASF provides the ability to receive, process, and support patients awaiting AE. The MASF has flight-qualified personnel that may provide an emergent evacuation capability when tasked; however, staging capability will be degraded until personnel return. The MASF is located at or near airbases capable of supporting mobility airlift and is designed to provide forward support with the smallest footprint. The communications capability assigned to the MASF may be integrated into the CRE or airlift operations cell. An aeromedical evacuation liaison team (AELT) may be identified to work with the aerial port element on the flight line to coordinate AE load planning, configuration, and operational support. The MASF may be augmented with additional personnel and equipment to increase casualty staging capability as needed. The MASF augmentation package includes both personnel and equipment packages. See Chapter 7 for more aeromedical evacuation information.

✪ **PHOENIX RAVEN**. Air mobility aircraft operate through areas where a threat may exist. To mitigate these threats, Air Mobility Command maintains specially trained

Security Forces who deploy with the aircraft. These PHOENIX RAVEN teams are comprised of individuals trained and equipped to provide protection of the aircraft when transiting high-risk areas. The decision to task a PHOENIX RAVEN team is vested in the AMC threat working group, which conducts an operational risk management (ORM) assessment of airfields for a given operation and makes a force protection recommendation. One of the options may be the tasking of a PHOENIX RAVEN team to augment all or part of a mission. These forces may be part of a base opening effort, but do not normally provide primary air base security.

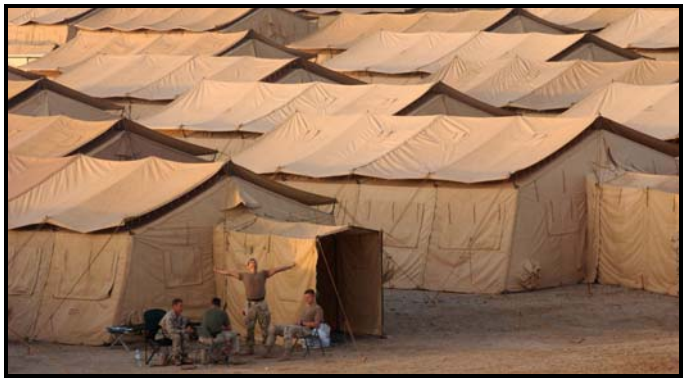
PHOENIX RAVEN team member on duty

COMMAND AND CONTROL OF GAMSS FORCES

Air mobility support operations encompass both global/functional support as well as focused regional support. In meeting the requirements of both AMC and the geographic combatant commanders, air mobility forces performing intratheater and intertheater missions coordinate with one another to provide seamless service to the supported commander. When GAMSS forces deploy to a geographic commander's AOR, command and supported/supporting relationships should be specified, coordinated, and concluded before operations begin. They should specify the type and degree of control exercised by commanders in the theater, the providing commander, and the associated C2 organizations. For example, if a CRE deploys from AMC's 21 EMTF to operate in support of a base in USEUCOM, the orders ought to reflect this, as well as designate the host USAFE AETF, NAF, or other organization that will provide direction and ADCON support on behalf of the USAFE COMAFFOR to that CRE. An agreement stipulating the desired flow of operational information between AMC and theater GAMSS forces and appropriate C2 agencies and commanders is also desired. These agreements are best codified in command-to-command agreements between the affected MAJCOM or air component commanders that provide Air Force forces and the geographic combatant commander's COMAFFOR. As another example, if an AMC CRE were to attach to a theater COMAFFOR with specification of OPCON or TACON to perform a base opening, the orders should specify the complete command chain of that transferring unit, as well as the expected redeployment date with transfer back to AMC. Normally OPCON of theater assigned CRGs, CREs, or other GAMSS forces is exercised through the respective COMAFFOR. If those forces attach to another theater, the receiving COMAFFOR is usually delegated OPCON. 18 AF/CC normally retains OPCON of USTRANSCOM-assigned GAMSS forces, but TACON of those forces may sometimes be transferred, with SecDef approval, to the theater COMAFFOR or JFACC.

BASE OPENING AND GAMSS

GAMSS forces will likely be the first Air Force presence on an expeditionary airbase regardless of how the base is gained (e.g., base seizure or acceptance from a host nation) or which follow-on US entity will operate the base. These forces play a critical role in the "open the base" force module, but will eventually be replaced by follow-on "operate the base" forces. When opening a base, GAMSS forces normally coordinate actions with theater command elements to ensure theater-specific responsibilities such as force protection meet requirements. Command relationships of GAMSS units to host bases will be situationally dependent but follow normal guidance for OPCON, TACON, and ADCON. Normally only units led by a commissioned officer will enter into support relationships with non-Air Force organizations. Usually deployed AMC units remain under the ADCON of AMC but receive specified elements of ADCON support from the host unit or host air component command. Other MAJCOM GAMSS forces are subject to command agreements in place or in published OPORDs. All deployed GAMSS forces should integrate with the host organization to the maximum extent possible for force protection and communications. Defined areas of operations and responsibilities for GAMSS personnel should be specified during planning of seizure/base opening operations. Additional issues that should be considered during planning are: the handoff of the airfield from any seizure force to the CRG or other GAMSS element, CRG/GAMSS element to follow-on unit, and redeployment and reconstitution of the CRG/GAMSS units once other expeditionary support forces are in place (normally not later than D+45). AFDD 2-4 and its sub-publications specifically address combat support.



Tent city—a base opening fundamental

AIR MOBILITY SUPPORT PLANNING

Successful deployment and employment of US forces and materiel depend upon the timely and accurate planning of all US support systems. The GAMSS is an integral part of the air mobility force and its integration into the initial deployment flow is critical to any effective contingency or crisis action planning processes. Although relatively small in numbers, GAMSS forces fill a vital niche, and the successful accomplishment of air mobility operations hinges upon this support.

These forward-deployed forces manage the deployment of intertheater and intratheater assets for AMC and/or the supported combatant commanders and, when a contingency is complete, the redeployment of US forces. Their effectiveness is directly related to a commander's understanding of a number of planning factors. Each factor needs careful consideration to ensure the geographic combatant commander's

requirements and objectives are achieved. All these factors are interrelated and therefore should not be considered in isolation. To ensure adequate support, coordination between GAMSS forces and theater planners should occur. The following planning factors are not all-inclusive for every operation, but they give commanders the parameters involved in the proper use of GAMSS forces.

Fundamental Considerations

There are four fundamental mobility support planning considerations: task, threat, core capabilities, and timing**.**

The operational tasks and purpose of the GAMSS remain constant, although specific circumstances and deployed locations are never constant. The basic requirement is to deploy GAMSS forces to a location where they either establish operations at a previously unsupported base or augment the in-place or permanent en route support system to conduct mobility support to worldwide DOD common users. Worldwide taskings for GAMSS forces center on this operation. The fixed infrastructure is composed of CONUS and overseas en route locations. This entire network is the foundation for GAMSS operations and their locations provide C2, logistics, and aerial port services to meet DOD operational requirements. While air mobility aircraft are used to project power, the GAMSS forces are the backbone of this power projection.

The geographic combatant commander should always be alert to the possible threats facing GAMSS forces. This includes non-combat missions like humanitarian support missions. Forces may face threats to security from individuals and groups as well as military and paramilitary units. Threat assessments should be conducted in consultation with intelligence, security forces, counterintelligence forces, and in-country diplomatic and defense liaison personnel.

A provision for force protection is a natural corollary to threat assessment. A high threat requires increased force protection. It also may be necessary to consider delaying deployments until the situation and area are stabilized. Threats can directly affect the flow of air mobility operations and the objectives of the JFC. Although GAMSS forces are trained to protect themselves against both conventional weapons and weapons of mass destruction (WMD), they should be augmented by a dedicated force protection element whenever the assessed threat affects operational success.

The capabilities of the trained GAMSS forces are a third fundamental consideration. These forces are finite resources with unique capabilities. They have multiple technical qualifications and are packaged as deployment modules. They train as modules, and every effort should be made to deploy them as such. This training, experience, and organization make them ready for autonomous operations in uncertain environments. Consequently, their finite nature drives the requirement for

commanders to carefully manage their allocation against prioritized requirements. GAMSS provides command and control, aerial port, and maintenance capabilities.

Finally, the time and the timing of force movement are the fundamental considerations that need the most attention. GAMSS forces usually preposition upon receipt of the CJCS warning/alert order. With expectations of a Presidential directive and approval by the18 AF/CC, the EMTF commander may preposition assets in anticipation of a warning/alert order depending on the nature of the contingency. This early positioning is critical to enabling effective airlift and aerial refueling operations.

If GAMSS forces are not prepositioned, it is crucial they be sourced early in the TPFDD or DEPORD planning. For large-scale mobility operations, this early integration in the deployment flow ensures the APODs are prepared to receive cargo and passengers, and the success of the mission is not endangered.

Primary Planning Factors

Global air mobility support is a structure dependent on a variety of resources and processes. The throughput of forces and materiel and the timeliness of its arrival are the measures of the effectiveness and efficiency of this system. There are a number of specific planning factors having varying degrees of influence on the ultimate success of the air mobility force. Some planning factors are resources regarded as “throughput critical”—key factors in the successful throughput of forces and materiel at any given location. Included in this category are manpower, materials handling equipment (MHE), airfield capability, and petroleum, oils, and lubricants (POL). These factors are critical because they determine the maximum number of aircraft and amount of cargo or passengers that can be handled at a location. Coordination by planning staff should be inclusive of all ACS related capabilities to ensure installations are capable of supporting mission elements.

Manpower: During the deployment and redeployment phases of any operation, manpower requirements are normally predictable for GAMSS. These requirements normally are identified in the TPFDD associated with a particular OPLAN, or identified as precursor movements if a DEPORD is used. Force modules determine initial manpower allocations for TPFDDs or DEPORDs. GAMSS forces are constructed into five different force modules: 1) onload, 2) contingency tanker task force, 3) stage/en route, 4) hub/transload, and 5) spoke/offload. Each force module is comprised of the unit type codes (UTCs) of personnel and equipment to sustain bare base operations. These UTCs can be tailored to meet specific task requirements when the deployment is not aligned with an OPLAN. The manner in which forces are organized directly affects GAMSS responsiveness and versatility. As the requirements and the tempo of operations change, so does the GAMSS force structure. The result of this arrangement is an en route support system that can rapidly expand during contingencies or periods of intensive air mobility operations to meet the increased demand of airlift and air refueling aircraft. When the increased level of air mobility operations subsides, the

en route support system shrinks back to levels that are based upon peacetime requirements.

Material Handling Equipment: A second key resource critical to throughput of cargo and personnel is the material handling equipment. MHE includes all ground equipment necessary for cargo loading and unloading, a capability that should be analyzed during both the contingency and crisis action planning processes. Direct coordination between planners and the tasked GAMSS force commander ensures tasked GAMSS forces arrive with the proper MHE to support the operation. Likewise, the GAMSS force commander should pare and tailor the deployable equipment to meet each tasking. Not only should MHE be a planning factor, it needs to be properly identified for insertion in the TPFDD for early deployment in the air mobility flow. When war reserve materiel (WRM) is being planned for use, MHE should be fully operational, tasked for sufficient quantity, and of the correct type. An assessment of host-nation MHE capability is a key factor to consider. MHE available at a forward location should lessen airlift requirements.

Airfield Capability: Airfield capability is a third primary factor. The air mobility planners should consider runway length and width, as well as taxiway and ramp dimensions and hot cargo handling sites. The planners should also consider operating surface conditions, load bearing capacity, and other factors that impact maximum aircraft on ground (MOG). Working MOG identifies the number of aircraft that can, based on services available, cycle through an airfield in a given time period. If a regional air movement control center (RAMCC) is established, its mission is to coordinate movements of civilian fixed-wing airlift in support of coalition military, humanitarian, and commercial air operations throughout the designated AOR by assigning arrival and departure times at selected airfields in the AOR and coordinating overflights. Arrival slot time coordination between the RAMCC and ALCT ensures the maximum MOG is not exceeded. Preplanned aircraft arrival slot times avoid ramp congestion and foster the synergistic effect of the entire rapid global air mobility force. The TPFDD or DEPORD may not efficiently flow if mobility aircraft are unable to land at the destination airfield. An airfield's infrastructure also impacts the support GAMSS forces can provide the air mobility flow. The hours of operation, climatology, weather service, flight planning support, airfield lighting systems, airfield navigational aids, and communications are all requirements that need consideration during planning phases. Augmentation by GAMSS forces can alleviate these limitations if the host nation allows it.

Petroleum, Oils, and Lubricants (POL): POL planning/requirements should include the amount needed for aircraft and ground equipment. Deliberate/crisis action planners should consider POL storage capacity, fueling system condition and type, dispense rates, as well as POL acquisition, either from the host nation or by resupply. Aircraft fuel is usually a major limiting factor and should therefore be the primary focus. At austere locations, aerial refueling can lessen the effects of shortages in ground refueling capabilities.

Secondary Planning Factors

A second tier of resources contributes to throughput but is not considered critical to operations. Although they are not considered critical to mobility operations, significant shortages can dramatically impact airflow.

Aerospace Ground Equipment (AGE): AGE, both powered and unpowered, is necessary to support maintenance and ground operation of aircraft systems. An analysis is normally completed prior to deployments to ensure sufficient quantity and operational status of the airfield's AGE. Augmentation of the existing capability may be necessary if the required equipment is unavailable or non-operational. However, due to the high multi-Service competition for airlift resources during the early phases of deployment and the Air Force objective of minimizing the deployed footprint, logistic planners should, whenever possible, minimize or delay forward deployment of equipment. Also, when possible, planners should consider "reaching back" to main support bases for specific pieces of equipment if and when required, rather than forward deploying any equipment that "might" be required.

Aircraft Spares: Aircraft spares are parts needed for repairs. Typically, GAMSS forces deploy with readiness spares packages sufficient to support the expected airflow for a given amount of time. However, for operations that start with a high operations tempo soon after arrival of combat forces and then continue for an extended duration, time-definite delivery of replacement spares should be established early in the deployment sequence. Non-availability of spare parts can cause an aircraft to become non-mission capable (NMC). NMC aircraft occupy valuable ramp space and negatively impact throughput.

Specialized Support Equipment: Specialized support equipment or other resources unique to a particular circumstance or location can also impact throughput. For example, a lack of snow removal equipment at a cold-weather airfield during operations can cause a bottleneck. Items such as these should be accounted for on a case-by-case basis.

Other Planning Considerations

There are additional planning considerations impacting throughput and affecting campaign objectives.

Footprint: The number of people, the amount of equipment deployed for an operation, and the physical space they occupy on the ground comprise the footprint of the force. The scale of any operation determines the footprint, but the proper balance of people and equipment and using the reachback concept can minimize the impact of deployed forces. As footprint size increases, more airlift is required to support these forces and less airlift is available to meet other JFC requirements. Diplomatic restrictions may affect the size of a footprint. A host nation may limit the number of foreign personnel on its soil, making the need for reachback support even more crucial. Paring forces based on the in-

place infrastructure can also reduce the footprint. The complementary outcome is the reduction in airlift required to deploy the GAMSS force. This reduction allows airlift assets to be reassigned for other priority taskings.

Base Operating Support (BOS): After the GAMSS force is deployed, BOS should be provided by the Air Force component command in whose territory the GAMSS forces are deployed or by the designated component as defined by the geographic combatant commander. Although GAMSS forces do not plan to deploy with BOS assets, they can fill these requirements when tasked. If tasked to augment theater-assigned BOS personnel, the GAMSS force commander can plan for and deploy with additional support personnel. However, GAMSS UTCs do not include the capability to support such additional force taskings. These additional tasks negatively impact operational success. Along with the ability to support BOS requirements, GAMSS forces also deploy with command and control communications capability. The integration of this capability into the theater's infrastructure is necessary for the efficiency of the GAMSS forces and for effective ITV.

Host-Nation Support (HNS): Deployed operations always rely to some extent on HNS. HNS can include diplomatic clearances, airspace access, lodging, food services, POL, water, communications, labor, or other types of support. Assessment of HNS capability and willingness is a critical consideration in the planning phases. Shortfalls in host-nation support are normally overcome through additional supply efforts. If this assessment is not accurate, forces will not have adequate support to conduct operations, or valuable transportation capacity will be wasted on cargo already available at the deployed location. The use of HNS agreements can be an effective force enabler and force multiplier. Obtaining local labor support from the host nation affords US forces economy of force. The force multiplying effect is the reduced airlift required for force support. Footprint size is also dramatically reduced when host nation services and support are maximized. To comply with congressional oversight, HNS should be tracked and reported to the applicable command element.

Diplomatic Clearances: Diplomatic clearances are crucial planning considerations as they can make or break an operation from the start. These types of clearances include aircraft overflight and landing rights, communications connection approval, personnel visas and other entry requirements. No TPFDD or DEPORD flow can occur without appropriate clearances obtained in advance. Without these clearances, the ability of GAMSS forces to enable rapid global mobility can be halted. Diplomatic clearances impact footprint, throughput, force protection, and ultimately, operational success, and should be acquired prior to execution of a TPFDD or DEPORD.

CHAPTER SIX

AIR MOBILITY PLANNING

Power is increasingly defined, not by mass or size, but by mobility and swiftness.

—President George W. Bush
Commander-In-Chief

GENERAL

Air mobility operations, whether performed in war, contingencies, or peacetime efforts, rely on good planning to be effective and efficient. Planning ensures the orderly deployment, employment, and redeployment of air mobility forces, integrating their operations with those of other Air Force, JTF, or governmental agency operations.

Air mobility planners participate in day-to-day global/functional intertheater operations planning at 18 AF TACC, as well as geographic combatant commanders' intratheater operations planning. The bridge between the two is the air mobility portion of contingency planning, which contributes to the creation of standing theater OPLANs that normally form the basis of contingency operations.

As these various planning tasks are conducted, the air mobility planner must consider a variety of impacts on intended operations, from availability of basing and resources, to execution challenges like weather, threats, and force protection. While AMC and theater planners have different commanders and different planning processes, many of their concerns are the same.

GLOBAL PLANNING

For missions where forces remain under OPCON of AMC, planners in the 18 AF TACC receive taskings from USTRANSCOM daily and build plans to fulfill the requirements of the requesting commands or agencies. The 18 AF TACC, on behalf of 18 AF/CC, uses a modified crisis action planning process to balance global requirements from its variety of government users against the availability and location of resources. This streamlined planning process focuses on a continuous, prioritized, frequently user-adjusted schedule rather than strategy creation and enemy analysis. For non-contingency situations, those taskings are rank ordered by priority and time received, then planned and executed. The limits on the level of support provided are aircraft and crew availability. Missions that "miss the cut" are returned to the requestor. For day-to-day global functional operations, 18 AF TACC planners work the myriad details involved in intertheater air mobility operations, from airfield access and

suitability, to diplomatic clearances, host nation support, and so on. Although they interface with the supported air and space component's planners, the majority of planning detail is generated by the 18 AF TACC and the tasked wing or EMTF. This planning detail is fed into appropriate C2 systems, which then transmit into GTN where all users and operators can view the data. Once planned, the 18 AF TACC issues a daily air mobility tasking message for wings or other organizations to execute their assigned operations.

In major contingencies (or other times when large-scale movement of forces is required) simply cutting off lower priority missions may not be feasible or desirable. In such situations, the JCS, in consultation with the supported and supporting combatant commands' senior leadership, decides how air mobility forces will be allocated to balance large-scale contingency needs with the other competing global requirements, how and when to "swing" assets from one theater to another, and whether to expand the air mobility force through the use of ARC mobilization, CRAF activation, and deployment of air mobility support resources.

During normal execution of intertheater missions, the 18 AF TACC coordinates with theater AMOCCs or the AOC AMD tasked to handle air mobility matters for the COMAFFOR. These theater organizations normally support the intertheater missions with aircrew lodging, food services, mission reporting, and mission planning facilities. The overseas fixed air mobility support squadrons provide en route support to flights through their locations, while deployed AMC personnel from the CRWs would support the locations not supported by the fixed AMS' or contracts with host nation support services. 18 AF TACC planners arrange this type of support during preparatory mission planning.

The AMC Mobility Tasking (AMT) Message

The AMT message is the primary tasking instrument that ties together all the planning and deployment information AMC units need to deploy and execute their global reach mission. The AMT is used to task all AMC-assigned mission support and AMC-provided theater augmentation manpower, equipment, and materiel support as well as intertheater air bridge assets. The AMT is published on the worldwide web as unclassified with classified supplements, if required. The AMT tasks all AMC mission support requirements for AMC-assigned and scheduled missions, airfield surveys, Joint Readiness Training Center (JRTC) schedules, AMC-provided theater augmentation support requirements identified in theater plans, theater and Service exercises, TPFDD, aviation packages, manning assistance, and all AEF taskings. In some cases, the AMT may be the only document a mobility unit receives that puts together what the unit is tasked to support, where they are going, when they must be there, how they will get there, how long they will be gone, what equipment they need to take, and for whom they are working. This information is fed into GTN, which tracks all aspects of movement of personnel and cargo, and is accessible to all Service customers.

Air Mobility Force Allocation

In a general sense, allocation is the distribution of limited resources among competing requirements for employment. In air mobility terms, allocation means the distribution by designated authority of available transport capability to users. Normally, to support the distribution of air mobility capability, the DOD transportation movement priority system, which assigns a priority code based on the user and the effect the air mobility assets are intended to have, serves as the mechanism for prioritizing the allocation of air mobility resources. However, during contingencies air mobility forces often reach the limit of their capability, since many taskings have very high priority, and planners need assistance deciding where to place the weight of effort. The 18 AF/CC, on behalf of AMC, may ask theater air component commanders with assigned or attached air mobility forces to provide airlift and/or air refueling support to those missions within the component commander's theater. If that is still insufficient, CDRUSTRANSCOM may request that the CJCS convene a joint transportation board to adjudicate the situation and allocate a percentage of available resources to the supported combatant commander(s). This allocation can be modified as the situation changes. Planners then use this allocation percentage to assign missions against the specifically supported geographic combatant command(s), while retaining the normal prioritizations system for other sorties.

Planners will further break down the total air refueling and airlift capability allocated to a given contingency; some are allocated to the deployment effort and others to the employment effort. The portion allocated to the deployment effort normally remains under the OPCON of AMC/CC to provide air bridge and deployment support. The portion of tankers allocated to the employment effort is normally attached to the appropriate AETF, with OPCON transferring to the combatant commander. Some airlift assets may also be so attached, but it is usually limited to shorter range, smaller aircraft that would not play a significant role in intertheater lift. The final consideration in making allocation decisions is the number and type of assets to be used. This entails matching the right capabilities against accurately forecasted airlift and air refueling requirements.

Once theater requirements are known, planners can match air refueling and airlift assets against those requirements. The most important consideration is to ensure that allocations are based on capabilities and not sheer numbers. Different airlift and tanker weapon systems possess different capabilities (ground turnaround times differ, outsize and oversize cargo capacities differ, the ability to pass or receive fuel differs, tankers can be probe or drogue, etc.). Within a weapon system, modifications installed on a few aircraft may dictate a particular force mix.

Asset Swing

If more than one major combat operation occurs simultaneously, there will not be enough tankers or airlift aircraft in the Air Force inventory to support a total air effort in both theaters for the entire length of a conflict. Most war plans call for mobility assets to "swing" from one theater to the other based on the most pressing needs, but typically

focusing on one theater with lesser support for the other(s). Airlift requirements usually peak during the deployment and redeployment phases, while air refueling requirements peak during the transition from deployment to employment. As the first supported conflict transitions through the deployment, employment, and redeployment phases, excess air refueling and airlift capabilities can swing to the other theater(s). While this concept is premised on more than one major combat operation, it can apply whenever air mobility assets are more limited, e.g., when ARC or CRAF assets are not mobilized.

Air Reserve Component (ARC) Participation

The ARC comprises over 50 percent of overall air mobility capability. Peacetime access to ARC forces is provided through volunteerism. Volunteers supplement regular component forces for a specified period of time. See AFI 10-402, *Mobilization Planning,* for more information on use of volunteers. During crises, volunteers or members activated by UTCs assigned to ARC units augment the regular component force, providing a substantial increase in mobility capability. Normally, CDRUSTRANSCOM makes a recommendation to the SecDef and President regarding ARC mobilization based on planner inputs. Planners should be aware of differences in Reserve and Guard capability and schedule missions accordingly. Ideally, representatives from the AFRC and ANG would augment the AMC planning staff to ensure planning and operational success. Because of manpower limitations imposed by part-time participation of some members, planners should coordinate with AFRC and ANG units to anticipate and provide for replacement of aircrews or other ARC personnel should missions be delayed beyond scheduled return.

Civil Reserve Air Fleet (CRAF) Activation

The CRAF is a voluntary contractual program where civil carriers agree to augment military airlift during a crisis in exchange for peacetime defense business. Some CRAF aircraft are specifically modified to support aeromedical evacuation missions. CDRUSTRANSCOM, with approval of the SecDef, is the activation authority for each stage of CRAF. Airframes pledged to the CRAF are activated in three progressive stages with each stage providing additional lift capacity. Stage I—committed airlift expansion; Stage II—defense airlift emergency; Stage III—national emergency.

Upon activation, airlift planners work with participating CRAF companies to ensure integration with military airlift operations. In addition to general planning considerations, special attention should be given to security clearance, intelligence, chemical/biological protection procedures, and support requirements peculiar to commercial operations. CRAF assets cannot be used in areas contaminated by chemical/biological agents or other hostile areas that pose too great a risk for the civilian partners.

Expansion of the Air Mobility Support System and Base Opening

Successful global air mobility operations depend on a network of fixed and deployable support forces. The deployable piece of GAMSS is significant in size, and while the bulk of it resides in AMC, other commands (PACAF, USAFE, and ACC) also are assigned air mobility support forces that can be deployed to expand or extend the air mobility network to accommodate operations anywhere in the world. Whether it is command and control, force protection, maintenance, or aerial port functions that are needed, GAMSS forces can be deployed to augment key locations or establish new en route facilities, as necessary. For AMC, the 18 AF/CC, through the 18 AF TACC, tasks the desired units to deploy the necessary forces. This deployment will necessitate coordination between 18 AF TACC planners and the planners in the supported theater to beddown and receive support from the deployed GAMSS forces. Similarly, if GAMSS forces from one theater deploy to another, the planners of both COMAFFORS will need to coordinate their actions. Within a theater, the COMAFFOR can deploy assigned or attached air mobility assets as desired. Air Force planners, especially at the beginning of a major contingency, are cautioned to ensure the TPFDD or other intertheater force flow plan should include GAMSS forces at the beginning to enable the remainder of the deployment.

A significant part of expanding the mobility support network is base opening. AMC and several other MAJCOMs possess base opening forces with a standardized force module called a contingency response group. These CRGs include airfield assessment teams, force protectors, communications, aerial port, weather, medical, supply, maintenance, contracting, and other key functions to open a new airbase for operations. At times these forces will be tasked to open an airbase in a geographic commander's AOR. Planners should ensure appropriate command relationships are specified in deployment orders, command hand-offs are designated, and follow-on "base operation" forces are designated so high-value, short duration CRG forces can redeploy no later than D+45 and reconstitute for use elsewhere.

REGIONAL PLANNING

Regional planning in each geographic combatant command takes on three forms. The first is peacetime planning to receive and prepare for shipment the intertheater support from AMC routinely passing through a theater. This short term planning encompasses movement, scheduling, and processing of personnel and cargo and supporting transient AMC forces. This planning is performed by the AMOCC, CRE, or the AOC AMD tasked to support air mobility operations for that theater. They are responsible for loading mission information into theater mission planning and tracking software and ensuring it gets entered into GTN. Most of the operational planning factors do not apply to this type of planning, which is most affected by availability of transport. Channel airlift is the usual method for movement. The second type of planning is contingency planning whereby standing OPLANs and TPFDDs are created for use in the event of a contingency. Contingency planning is affected by the joint strategic capabilities plan (JSCP) apportionment of air mobility forces for planning purposes.

Many of the geographically related planning factors below are used in this planning process. The third planning form is the joint or coalition crisis action planning that results in an air tasking cycle to plan operations when a contingency actually occurs. The AMOCC or designated AOC receives taskings from the geographic combatant commander daily and builds plans to fulfill the validated requirements of the theater. AMOCC processes are similar to those employed by 18 AF TACC as AMC is the lead command for air mobility.

JSCP Air Mobility Force Apportionment

As the air component for USTRANSCOM, AMC participates in the contingency planning process of the geographic combatant commands, advising them on capabilities and the feasibility of air mobility-related plan particulars and TPFDD development. USAFE, PACAF, and several NAFs also have air mobility experts assigned to their theaters to assist in this process. This formal process develops responses to potential crises, determines forces required to achieve objectives, prepares deployment plans, and continuously evaluates selected courses of action (COAs). This lengthy process results in a series of formal plans within each theater, and contains lists of apportioned forces and may include TPFDDs. These forces and detailed deployment schedules may provide the basis for plans needed in crisis action planning.

To facilitate the geographic combatant commander contingency planning responsibilities directed in the JSCP, the CJCS apportions air mobility forces among the combatant commanders for planning purposes only. Apportioning forces does not provide the designated combatant commander any command authority over these forces but represents the forces to use for planning. The SecDef will determine actual forces made available for operations, after consultation by the combatant commanders involved.

Crisis Action Planning

Crisis action planning is used in time-sensitive situations to plan for military action. No later than receipt of the warning order, the geographic combatant commander convenes his battle staff and, if required, starts structuring a JTF. The Service and functional component commanders assist the staff in developing COAs as recommended military responses to the developing crisis. Air mobility planners will provide recommendations to the COMAFFOR who will incorporate them into his own recommendations to the JFC. After a COA is selected and the commander's intent explained, plan development will begin, either modifying an existing OPLAN or developing a new plan. In either case, the COMAFFOR's input will contribute to the development of the joint air operations plan (JAOP). The current software interface for deliberate or crisis action planning is the JOPES.

Once the joint force commander is tasked with a mission, the Service component commanders will assist the JFC in creating an estimate of the current situation,

formulating a course of action, and establishing objectives (both for the JFC and then the components themselves) needed to complete the mission. Once these are approved they become the concept of operations--expressing what, where, and how joint air operations will affect the adversary or current situation. In addition, forces will be made available for use by the joint force. From this point the JFACC directs the development of the JAOP and any supporting plans. The JFACC's daily guidance to the Service air components ensures that joint air operations effectively support the joint force objectives while retaining enough flexibility to adjust to the dynamics of military operations. This process drives not only the combat planning but the non-combat operations as well. At each step in this process air mobility capabilities must be represented by the COMAFFOR. Toward that end the DIRMOBFOR-Air and the planners in the air mobility division of the AOC will serve as the COMAFFOR's advisors and assistants.

Once the JAOP process begins, a variety of considerations will affect the planning, ranging from basing availability and threat assessment, to fuels availability, reachback capability, and climate. In addition to laying out the complete deployment, beddown, and employment of air and space forces (including air mobility aircraft and support forces), the completed JAOP should also include considerations for conflict termination and redeployment of forces.

Once employment begins, the JFACC commences a new phase of the joint air tasking cycle. The cycle is used to provide for the efficient and effective employment of the joint air capabilities/forces made available. It provides a repetitive process for the planning, coordination, allocation, and tasking of joint air missions/sorties that accommodates changing tactical situations and new JFC guidance or requests for support from other component commanders. Much of the day-to-day joint air tasking cycle is conducted through an interrelated series of information exchanges and active involvement in plan development, target development, and air execution, which provide a means of requesting and scheduling joint air missions; the end result is the ATO. The ATO articulates the tasking for joint air operation for a specific time period, normally 24 hours. Detailed planning normally begins 48 hours in advance of the execution period to enable the integration of all component requirements, thus creating an overall 72-hour ATO cycle. The net result of this planning effort is that there are usually three ATOs in various stages of progress at any time.

(1) ATO currently being executed
(2) ATO being developed/produced
(3) ATO in planning

It is the job of the AMD to ensure all intratheater and intertheater air mobility sorties are integrated into the ATO. If intertheater air mobility missions are not in the ATO, they must be deconflicted and synchronized with ATO operations. The AMD and the DIRMOBFOR-Air will also coordinate this effort with the joint movement center (JMC) that normally has overall responsibility for supporting the J-4's logistics plan in support of JFC objectives.

OPERATIONAL PLANNING CONSIDERATIONS

The first operational planning consideration for airlift, air refueling, and AE support is to determine what military and CRAF resources are available to support the mission. All other planning considerations will be based on the airlift assets to be utilized.

Access

A successful air mobility operation depends on a network of facilities, diplomatic clearances and usable destinations, which include airfields and drop zones. Access to theater airspace and airfields throughout the world presents a major limiting factor to air mobility operations. In underdeveloped regions of the world, aircraft often use austere airfields. These unsophisticated airfields are limited in one or more of the following: runway condition and size, taxiway systems, ramp space, fuel (resupply, storage, quality, and handling capabilities), security, MHE, marshalling/storage capability, aircraft servicing, maintenance, navigation aids, weather observing sensors, and communications. Additional factors a commander or planner should consider include routing restrictions, flow control, terminal instrument procedure restrictions, host-base support, and other airfields' infrastructure. If access to airfields is denied, or if other airfield planning factors become insurmountable, then an alternate plan for supply of the base is developed or the base should be eliminated from consideration as a logistics base.

Basing

There are several considerations when choosing air mobility bases during either contingency or crisis action planning. Because of the specific needs of air mobility aircraft, such as runway and taxiway width, runway length, ramp considerations, marshalling yards, pavement weight bearing requirements, and fuel availability, identification of mobility bases should be considered as well as those for combat aircraft. Another consideration for mobility operations is trans-shipment availability. Local infrastructure, such as availability of roads, railroads and waterways can play a large part in getting supplies to their final destination. A more robust perimeter security may also have to be in place to allow heavy aircraft a final approach corridor.

En route and destination airfields should be able to support the flow of air mobility aircraft. The COMAFFOR's staff, in consultation with the DIRMOBFOR-Air, if identified, should consider runway length, width, as well as taxiway and ramp dimensions, runway surface conditions and load bearing capacity. Factors that impact MOG, marshalling yard capabilities for airlift, and fuel capacity and distribution for air refueling aircraft are other considerations. Site surveys of most major airfields are readily available, and should be frequently updated. MOG identifies the number of aircraft that can cycle through an airfield in a given time frame, while marshalling yards determine the amount of cargo that can be downloaded and distributed. Additionally, preplanned aircraft arrival slot times should be used to decrease ramp congestion and may be required in

certain areas. Adequate fuel supply and distribution capability should either exist, or the capability to augment the fuel system should exist, for airfields to be considered adequate air refueling bases.

Overall, the base opening planning for a tanker operating base has significant additional considerations from other base opening efforts, and should receive appropriate attention prior to execution. Normally tankers operate from fully functional bases or civilian airfields to accommodate the large fuel requirements to service multiple receivers. The mature infrastructure allows rapid refueling of multiple aircraft at the same time, thereby facilitating rapid reconstitution of the tanker force. Additionally, a robust fuel storage and distribution network should be planned to provide for tanker and receiver fuel needs. This can be a challenge at smaller austere airfields and should be considered during planning. Significant considerations are ramp space, load bearing capacity, runway length, and temperature considerations. The ramp should allow the movement of multiple aircraft and should have multiple approaches and departure areas. Load bearing capacity should meet or exceed planned operations parameters.

Host-Nation Support

Support from the countries involved in any air mobility effort is essential, since deployed air operations rely on host nation support. Legal advisors should be consulted to determine what agreements already exist and whether status of forces agreements (SOFAs) or acquisition and support agreements (ACSA) are in effect. SOFAs normally include status of personnel, as well as operating rights and responsibilities and may include waivers of landing fees, duties, taxes, or personnel entry requirements. Failure to adequately ascertain host nation support and provide for any required augmentation can result in failure. Additionally, if agreements are not understood or adhered to by personnel, mission failure is possible. First and foremost, the ability to obtain diplomatic clearance for both overflight and landing is paramount. Past conflicts have demonstrated the ability, or lack thereof, to obtain diplomatic clearances has far-reaching impacts on every air mobility effort. Host nation support cannot be underestimated. This support is also crucial with regard to POL availability due to high consumption rates.

Airfield Suitability

Intertheater and intratheater planners must have current information concerning the suitability of all proposed airfields to create effective plans for operations. Data should include runway length and width, taxiway and ramp dimensions, fuel capability and availability, runway surface conditions and load bearing capacity, contingency and working MOG, aircraft servicing and loading equipment, and many other factors. AMC, on behalf of USTRANSCOM, maintains a continuously updated global database of airfield survey information, and theater planning shops do the same for theater bases. This database should be updated as a part of the expeditionary site survey planning (ESSP) process to ensure airfield information is captured as part of the adaptive planning process.

Airspace Control

The use of air mobility in any theater should be integrated into the airspace control plan and any civilian or international airway control system. Air mobility planners should coordinate with the airspace control authority's (ACA) staff or RAMCC, if established, and obtain diplomatic clearances to ensure airlift complies with all routes and procedures through any area they may transit. The nature and intensity of the air operation may require the establishment of specific airlift corridors. The corridor routing is coordinated among the ACA, the various planning and execution functions of the AOC to include the RAMCC, if established, the AMD and the DIRMOBFOR-Air. These individuals and organizations should take into account all other theater operations and any threats to the air mobility forces. The AMCT or theater equivalents provide deconfliction of daily airlift and air refueling intratheater operations in the JOA. The AMD provides the coordination of intertheater assets entering the AOR/JOA. It is the responsibility of the ACA to ensure airspace management of airlift operations is sufficient to provide effective and safe operations.

FACTORS INFLUENCING MOG

AIRFIELD
1. Parking Ramp
2. Runway
3. Taxiway
4. Airfield Restrictions
5. Navaids/Approaches
6. Ops Buildings
7. Air Traffic Control
8. Airfield Lighting

AIRFIELD SERVICES
1. POL Storage and Delivery
2. Maintenance
3. Customs and Agriculture
4. Aerial Port

BASE SUPPORT SERVICES
1. Force Protection
2. Food Services
3. Communications
4. Fire Protection
5. Transportation
6. Lodging

Figure 6.1. Factors Influencing MOG

Maximum on Ground (MOG)

There are a variety of MOG definitions, but planners are most concerned with "working MOG," the highest number of specific type aircraft able to operate in and out of an airfield or allowed on the ground during a given span of time, based on simultaneous support. Figure 6.1 lists some of the individual factors that can determine MOG. This is different from the contingency MOG which is the most aircraft that can fit on the ramp. The limiting factor on this chart becomes the determining factor for an airfield's MOG. Many of these limitations, however, can be overcome or mitigated through augmentation by aerial port, communication, and maintenance forces, or by deployed unit, theater command or AMC actions.

Communications

Because of their extended loiter capacity, airborne tankers and airlifters can be redirected whenever their primary mission is canceled or changed. To accomplish this,

C2 elements normally maintain accurate flight following of air mobility aircraft to be able to contact them. This should normally be accomplished by the AMD in the theater or AMC outside the theater, though operational requirements and communication capabilities may dictate that another airborne or ground C2 element relay a new tasking. Communications security (COMSEC) procedures, and in particular EMCON requirements, may make it difficult for control elements to maintain contact with individual tankers. Retasking procedures and frequencies should be thoroughly explained in the SPINS portion of the ATO or the ACO to ensure coordination between aircrews and command personnel. For intertheater missions, the 18 AF TACC will be responsible for passing the information required to the aircrews and integrating any changes with the receiving theater.

Emissions Control (EMCON)

Air mobility operations are dependent on both air-to-air and air-to-ground communications. Throughout operations, tankers and airlifters often need to simultaneously communicate with receivers, air traffic control (local and/or military), and other tankers. Combat or politically sensitive missions often require air mobility aircraft and air refueling receivers to use EMCON procedures. These procedures minimize an aircraft's transmission of electronic signals reducing the amount of information enemy forces gather. Restricted EMCONs degrade communication and navigation capability and may adversely affect operational success. Success under restricted EMCON conditions requires standardized procedures and regular practice. Both tankers and receivers should regularly exercise EMCON procedures.

Force Protection

Incidents such as the Khobar Towers bombing in Saudi Arabia have shown that potential opponents can be unpredictable and United States assets are at risk worldwide. Additionally, there has been an increase in the availability of high technology weapons and weapons of mass destruction available to adversaries. Together, these factors have multiplied the threat to forces on the ground and the need for enhanced force protection measures. Commanders are responsible for protecting their people and the resources necessary to win any type of conflict. For more information on force protection, see AFDD 2-4.1, *Force Protection.*

A threat/risk/vulnerability assessment of an airfield and its environment should be a high priority prior to use. Threat assessments enable commanders to develop countermeasures in deployed areas and allow them to adjust operations accordingly. All echelons should plan for airbase defense, which may include protection against conventional air-to-surface munitions; chemical, biological, radiological, nuclear, and high yield explosive (CBRNE) weapons; and unconventional warfare forces. Likewise, security forces should be able to detect and respond to a wide variety of threats ranging from unauthorized entry to an overt attack. For missions transiting non-Air Force-supported airfields, use of PHOENIX RAVEN teams for security should be considered.

Intelligence

Timely and accurate intelligence reduces vulnerabilities and is essential to air mobility mission planning. Intelligence personnel provide information about enemy composition, vulnerabilities, capabilities, intentions, and probable courses of action for air movement operations. Critical information should include:

- ✪ Latest enemy order of battle data.
- ✪ Enemy integrated air defense system capabilities.
- ✪ Enemy information operations capabilities.
- ✪ Airfield, DZ, or ALZ information for the area of operations.
- ✪ Maps, charts, and imagery to support airlift mission planning and execution.
- ✪ Location of friendly air corridors.
- ✪ CBRNE threats.
- ✪ Vulnerabilities to information and information systems that support planning of airlift operations.

Operations in a CBRNE Environment

CBRNE threats pose substantial, but not insurmountable, barriers to airlift operations. The threat of a terrorist group or other organization using nuclear material or biological/chemical weapons has increased. Commanders and the intelligence community routinely assess enemy capabilities, intent, available force protection, and the US ability to detect, respond to, and defend against CBRNE attacks, when developing plans for airlift operations in a CBRNE environment. Operations in a high threat CBRNE environment may make it necessary for crews to fly in individual protective garments and comply with specialized directives for aircraft operations survival to accomplish the assigned task. Planners should consider decontamination requirements, aircrew stress, ground support, and implications for CRAF when determining whether a mission should be scheduled to or continue to a contaminated location or to clean alternate destination.

Threat Management

Both friendly and enemy forces view air mobility platforms as a high value asset. When they are lost, damaged, or contaminated, the ability to support operations is degraded. US air mobility forces are increasingly tasked to perform missions in hazardous situations, both in war and contingency operations. Given the varied contingencies air mobility aircraft are involved in, and the wide range of anti-aircraft weapons available, planners cannot guarantee aircraft will operate in low threat environments. In Operation DESERT STORM and OIF, US tankers and airlifters

operated over Iraqi territory where ground-based threats could affect them. Most mobility aircraft depend upon combat air patrol and suppression of enemy air defense assets for protection, and are reliant on the C2ISR network for threat warning. While some airlift aircraft possess warning and defensive systems, tankers usually do not. All mobility aircraft can reduce risk through threat-avoidance tactics, but commanders should consider the lack of defensive countermeasures and perform proper ORM prior to operating air mobility aircraft in non-permissive environments. This restriction can reduce air mobility assets' flexibility to support national policy across the range of military operations, and should be considered by planners of both combat and combat support missions.

The primary threat to flight operations is surface-to-air threats encountered within airfield terminal areas and during the ingress and egress phases to/from objective areas. Planners need to consider threat analysis, airfield environment, and routes to and from operating areas. Locations should be chosen to allow security forces the capability to easily defend approach and departure corridors.

At altitude, aircraft may be vulnerable to enemy aircraft, surface-to-air missiles, and anti-aircraft fire. Air refueling tracks and air mobility routes should be positioned outside the effective range of enemy air defense forces. Operational considerations may dictate that aircraft operate within this range, but defensive tactics and friendly defensive aircraft should be pre-planned, along with preferred escape procedures. Close coordination with airborne C2 elements as well as surface and airborne threat sensors provides crews with real-time changes in threat status and threat warnings.

As with all military operations, a good operations security (OPSEC) plan is critical. The releasability of information from planners to executing agencies and units must be considered with regard to the threat. When possible, where surprise is necessary, planners of large operations should attempt to minimize the number of aircraft having to "check in" with multiple traffic control agencies as this can be used by adversaries to determine force size.

Weather

Accurate and timely weather information is essential in all phases of air mobility operations. The climatology for an area is an important consideration during the planning of airlift and air refueling operations. Historic measurements of temperature, precipitation, ceiling, visibility, etc., impact equipment or supply requirements (e.g., navigation aids, deicing or snow removal equipment) that should be programmed into the operations plan. During planning and execution of air mobility missions, the integration of accurate and timely weather information identifies potential operations-limiting or -enhancing weather conditions. This information provides planners and operators the opportunity to adjust aircraft flow, loads, and timing to ensure effective, efficient, and safe task accomplishment. Additionally, space and atmospheric weather conditions have a significant impact on communications for command and control.

Anticipating space and atmospheric weather impacts and creating alternate plans when necessary enhance air mobility operations.

ADDITIONAL PLANNING FACTORS

Tasking Process

Once airlift forces are allocated and apportioned, airlift planners can assign airframes based on the commander's priorities. It is important that both planners and commanders understand the distinct phases of the tasking process.

Combatant commanders request airlift based on the tasks to be performed. Deployments are normally managed via a TPFDD or DEPORD, with passengers and cargo normally moved by contingency airlift, while channel missions normally move sustainment. The supported commander, in coordination with supporting commanders and Services, establishes movement requirements. Requirements for JCS exercises or contingencies are scheduled through the joint planning process and a TPFDD or DEPORD is developed. The combatant commander validates the TPFDD or DEPORD transportation requirements prior to movement. USTRANSCOM evaluates the supported command's validated requirements then passes this requirement on to its air component (AMC), which identifies and schedules intertheater airlift requirements. The geographic combatant commanders use their air component command to plan and execute intratheater requirements. Commanders and planners should use the following steps to request and task airlift.

- **Identify Requirements**. The first step in the process is for the user to identify the need to move personnel and/or materiel. This requirement identification is a Service responsibility.

- **Prioritize**. The validating authority (normally the supported combatant commander) should prioritize movements using the DOD transportation movement priority system. This ensures the proper precedence is placed on each request.

- **Validate**. Combatant command components, supporting combatant commanders, and providing organizations confirm movement requirements to the supported commander and USTRANSCOM. Part of the validation process is determining the best mode of transportation: air, ground, or sea.

- **Allocate**. Planners determine the number and type of aircraft required based on the validated requirements passed to the Service air components.

- **Task**. Once the proper number and type of airlift assets are identified, the tasked unit is determined. Tasking may be accomplished through message or by the ATO.

- **Coordinate**. Coordination between the user, unit, and planners should occur to effectively move the validated/prioritized cargo or passengers.

- **Schedule**. Many variables affect the scheduling of cargo and passenger movement. These include unit constraints, user restrictions, airfield infrastructure, and diplomatic clearances.

Airlift Planning Considerations

There are numerous planning factors considered for any airlift flight. Most were discussed in the planning chapter, but some items are airlift specific and discussed below.

Categories of Cargo

- **Bulk:** General cargo, typically loaded on 463L pallets (108" by 88", usable space 104" by 84"x96") or containers; and transportable by common cargo aircraft.

- **Oversize:** Cargo exceeding usable dimensions of 463L pallet but is less than or equal to 1090" length x 117" width x 105" height.

- **Outsize:** Exceeds oversize dimensions.

- **Rolling Stock:** Equipment that can be driven or rolled directly into the aircraft cargo compartment.

- **Special:** Items requiring specialized planning/preparation and handling procedures, such as mail, satellites, hazardous cargo, or nuclear weapons.

Movement Planning

For movement planning purposes, airlift aircraft are either administrative- or combat-loaded. Movement planners, working with users, should select the load method optimizing airframe utilization while meeting user demands. The main purpose of administrative loading is to maximize aircraft passenger and cargo capacities and cost efficiency. This maximizes the use of weight and volume, allowable cabin load, and capacities of airlift assets. Equipment and supplies must be unloaded and sorted before they can be used. Airland is the typical method of delivery. Combat loading arranges personnel and materiel to arrive at the intended destination in an order and condition ready for immediate use maximizing the combat readiness of the organizations and equipment being moved. Combat loading stresses effectiveness, usually resulting in less efficient loading; thereby reducing the amount of cargo and passengers carried.

Air Refueling Support

The amount of cargo, distances involved, and availability of intermediate fueling locations in intertheater airlift operations may make air refueling necessary. Air refueling may reduce the aircraft's initial fuel requirement, allow for heavier cargo loads, increase aircraft range, and reduce the requirement for ground refueling at the APOD. Air refueling enables aircraft to overfly bases with limited capability and recover at more suitable airfields. Planners should plan for the impact of adding air refueling to the basing and other support needs attendant with added air refueling support.

Offload Options

Aircraft offload time plays a significant role with airlift planning, especially when MOG is a limitation. One variation of the airland delivery procedure is the "engine running offload and onload." This procedure significantly reduces an aircraft's ground time, however, ground personnel are subject to increased risks. Another expeditious procedure is the "combat offload method." This procedure entails offloading cargo while taxiing, further reducing the aircraft ground time and reducing the requirement for MHE at the air terminal. This procedure cannot be accomplished by all aircraft types and subjects cargo and taxiways to possible damage. In addition, for those aircraft accomplishing both types of offloads, the combat offload entails more risk due to the dynamic nature of the operation.

CHAPTER SEVEN

AEROMEDICAL EVACUATION

GENERAL

The Air Force aeromedical evacuation (AE) system provides fixed-wing movement of patients requiring supervision by qualified AE crewmembers to locations offering appropriate levels of medical care. AE forces can operate as far forward as fixed-wing aircraft are able to conduct airland operations. AE forces may be tasked across the spectrum of military operations. In certain occasions, AE forces may also be tasked to evacuate injured/ill host nation personnel, enemy prisoners of war, detainees, and coalition forces. Finally, during and after operations, AE includes transportation of patients to and redistribution within CONUS.

AE CONCEPTS

AE improves casualty recovery rates by providing timely and effective transportation of sick and wounded to medical facilities offering appropriate levels of care. AE provides: a) integrated control of casualty movement by air, b) clinical and operational support personnel including critical care air transport teams (CCATT), c) equipment for in-flight care and ground support operations, d) facilities on or in the vicinity of airfields for the administrative processing and care of casualties entering, en route through, or leaving the AE system, e) C2 of all AETF AE forces and AE operations, and f) support to the communication network between airlift C2 agencies.

AMC, as the lead Air Force command for AE, is charged with the responsibility to operate the common-user Air Force fixed-wing AE force, to procure and execute commercial augmentation, and administer and execute the CRAF-AE. AMC manages and operates the intertheater and AE sub-systems, and provides AE elements and planning assistance to the theater of operations, in intermediate supporting theaters, or in CONUS. USAFE and PACAF are responsible for their theater-assigned AE units and associated airlift units. During contingencies where requirements exceed theater AE capabilities, AMC normally provides operation-specific augmentation forces to support increased theater requirements and expands or establishes the intertheater capability to support movement between theaters of operation, or to CONUS, as required.

Theater AMOCCs (or AOC AMD) and the 18 AF TACC execute AE operations by optimizing the use of available multi-mission aircraft. This optimization may include mixing cargo and AE on the same air mobility flight, as well as integrating AE requirements into cargo channel routes. Airlift for urgent and priority patients is normally tasked from alert aircrews, diversion of in-system select aircraft, or contracting with a civilian air ambulance (CAA). To enhance responsiveness, AE crews and CCATTs should be strategically positioned based on airlift and key patient originating locations.

Theaters validate patient requirements through the existing theater unified command cargo/passenger annual validation process. If absolutely necessary, patients requiring in-flight medical care, but not supported by the organic AE system, may be moved by other Service assets or CAA. Outpatients and eligible beneficiaries needing air transportation, but not requiring in-flight care, can be moved by commercial airline travel, contract airlift, duty passenger travel, or in a patient temporary duty status in the DTS.

CAA should only be used in order to save life, limb or eyesight when the requirement cannot be filled organically. Contract approval review board (CARB) approval is normally required on all commercial conveyances contracted by the military to move patients. For guidance on CARB processes, see DOD Directive 4500.53.

Defense Support of Civil Authorities (DSCA)

Those activities and measures taken by DOD components to foster mutual assistance and support between DOD and any civil government agency in planning or preparing for, or in the application of resources for response to, the consequences of civil emergencies or attacks, including national security emergencies.

Most homeland security operations/DSCA situations are managed within the state. Civil authorities, through the Federal Emergency Management Agency (FEMA) structure orchestrate local support. In a natural disaster the state governor must declare the situation is beyond the state's capability and then request support through the State Emergency Management Agency (SEMA) to FEMA (See National Response Plan emergency support function number 8 [NRP ESF #8]).

It is anticipated most FEMA-requested patient evacuations will be accomplished by the Air Force AE force. USTRANSCOM is the authority that validates the requirement to support civilian authorities with USJFCOM, USNORTHCOM, Joint Director of Military Support (JDOMS), Federal Emergency Medical System (FEMS), and the National Defense Medical System (NDMS). Once validated, AMC and 18 AF TACC are the lead operational authority (LOA) for AE planning, coordinating, and, when directed, executing DSCA support. AMC also provides trained AE coordinating officers and coordinating elements for DSCA from existing active and reserve component forces in execution of the NRP ESF#8 in the continental United States. AE assets required depend on the size and scope dictated by the disaster or contingency and may be supported by in-place AE infrastructure or the deployment of AE assets to the disaster area.

AMC plays a key role in response efforts with its experienced AE personnel, planners, and support staff, who may provide professional insight to responding tactically, clinically, and technologically to homeland security. No specific table of organization and equipment medical unit is designed to operate specifically in support of

homeland security but may be pulled from expeditionary combat elements, the preponderance of which are in the ARC force structure. Requirements can be met in a number of ways, depending on the situation. With proper authorization, AE personnel may be used to support local efforts at command and control centers, staging at existing airports, and/or AE liaisons at medical treatment facilities preparing patients for in-flight care.

AE Interface with SOF and CSAR

Some special mission operations and expeditionary forward deployed operations, such as special operations forces (SOF), marine expeditionary forces, and combat search and rescue (CSAR) do not possess organic conventional AE capability and should identify requirements for, and obtain conventional AE support at forward airbases.

Evacuation of casualties within the joint special mission arena can be a particularly complex issue since these forces often operate in small, widely dispersed teams, and in locations not easily accessible. Flexibility and sensitivity to the particular needs of the special mission community is important to consider in determining how to best support their AE requirements. The special mission forces are responsible for care and evacuation of casualties from the forward location to the secure airfield where AE forces may be prepositioned to support the operation. The special mission teams conduct the evacuation of patients with their organic vehicles. At the secured airfield AE/CCATT assets assume responsibility for the casualties, freeing special mission medical assets to return to forward locations. AE assets provide the support required to AE patients to reach definitive care.

AE training to support forward special missions is critical. Normally, the interface point with special operations is the mobile aeromedical staging facility (MASF) or the contingency aeromedical staging facility (CASF). MASF personnel have contingency operations training and, in forward locations, should be ready to perform AE missions as well as provide limited holding for patients having been provided resuscitation and surgical intervention. AE missions originating at secure forward airfields may require AE operations in low light conditions. When supporting these forces, AE crewmembers (AECMs) and CCATTs need to be trained in low light/low noise, weapons, and operations in austere locations to meet special mission requirements.

Detainee Missions and AE

Strict adherence to detainee handling guidelines is required. Providing medical support for detainee transport missions is a medical requirement and AE personnel are not normally used for this purpose unless an inflight medical care requirement exists. Flight qualified nurses and technicians are operational personnel designed to move patients (including prisoners/enemy prisoners of war [EPWs] or detainees in a patient status) on AE missions. Security of detainees is not a responsibility of medical or AE personnel.

Inter-fly Agreements with MAJCOMs, Service, and Coalition AE Support

The Air Force employs fixed-wing aircraft for the movement of patients and utilizes AE crewmembers to provide in-flight patient care. Other Services and coalition forces use various ground transport, and rotary and fixed-wing aircraft for patient movement. Air Force AE aircrew members may perform appropriate duties in non-Air Force aircraft if it is in the interest of the US government and approved by the assigned Air Force MAJCOM, the affected geographic combatant commander, and the controlling aircraft authority. Conversely, coalition forces may also integrate with Air Force AE forces. Canadian personnel, for example, have trained in the US and are familiar with C-130 aircraft. AE planners normally identify the potential need, and through the operations center work inter-fly agreements through the line of the Air Force. In peacetime, MAJCOMs may require inter-fly agreements to be processed before AE crews from one command can fly with others.

C2 OF AE

Steady-State/Peacetime

Great strides have been made to standardize the AE system to ensure peacetime processes mirror wartime processes. This allows AE forces to exercise their wartime infrastructure in peacetime and enhances wartime training. C2 of AE assets, to include tasking authority for AE and air mobility forces, resides with the normal airlift and air mobility C2 structure. Field and air expeditionary squadron (AES) operations are conducted through operational wing C2 channels. The 18 AF TACC, AMOCC, or theater C2 node, provides C2 for tasking and execution for air mobility assets used to accomplish AE missions within their respective areas of operation. AE cells should be established within each of those organizations to provide the critical link between C2 of airlift operations and medical/joint interface. The theater validation flight surgeon(s) (VFS) and patient movement requirements center (PMRC) provide clinical and administrative oversight of patients requiring AE; once validated, these movement requirements are sent to the appropriate C2 agency for obtaining space on AE airlift missions.

Contingency AE Structure

Deployed expeditionary air and space forces are organized to ensure unity of command. AE forces deployed are organized within an AETF and are tailored based on the size and scope of the operation. C2 of theater AE forces in contingency operations should be defined in the warning/execution/operations order. Air Force AE assets are normally under the OPCON of the COMAFFOR, who supports the JFC as required. Direct liaison authorized (DIRLAUTH) with the joint forces surgeon (JFS) is normally authorized. Deployed AE units normally operate under the direction of an air

expeditionary wing commander (AEW/CC) whether co-located or geographically separated.

Intertheater AE C2

Intertheater AE assets normally are not attached to an AETF but remain under the OPCON and ADCON of USTRANSCOM and AMC, respectively. Coordination of airlift, patient movement items, and asset requirements to support AE is requested through the AMD of the theater AOC. The 18 AF TACC and AMD may coordinate the use of theater AE assets to support AMC or intertheater missions. For these missions, theater AE assets tasked to support AMC intertheater missions normally falls under the TACON of 18 AF TACC during execution and repositioning back to the theater. When theater AE assets are used to support intertheater AE missions, provisions should be made for expeditious return of these assets.

PLANNING CONSIDERATIONS

AE planning requires the integration of joint- and Service-specific capabilities into the JFC's concept of operations. Health service support considerations include the tactical operation and situation, enemy and friendly capabilities, threat assessment, and the theater evacuation policy. AE planners are an integral part of the airlift planning team and should build appropriate AE support into the en route structure. The AE planner should interface with medical planners to ensure appropriate medical capability along airlift routes.

AE planners consider many factors when selecting the most appropriate means of executing AE operations. Airlift routes should be identified to establish potential AE plans. Theater evacuation policy, airframe considerations, airfield capability, potential hostile or terrorist location, PHOENIX RAVEN security forces, BOS, communications, crew support and interface with special mission forces are just a few of the factors considered when planning AE missions.

An AE planner is incorporated into the AOC to outline, develop, and coordinate AE theater plans along airlift routes, including number and location of AE assets needed to support operational requirements. Additional support may be requested from the AMC director of operations utilized in a reachback status to support the operation. AE planners also assist geographic and component commands, as required.

An AE senior office with extensive AE experience and knowledge of plans and operations should be considered for the chief of the aeromedical evacuation control team (AECT) in the AMD. This individual would direct the actions of the AECT and offer AE planning and execution guidance to the AOC director and DIRMOBFOR-Air.

LAYDOWN (OPERATIONS PHASING AND FORCE SEQUENCING)

AE forces provide a rapid, flexible, incremental, mobile response. UTCs are employed to provide command, control, communications, patient care, and system support. Theater requirements are met based on a building block principle. This allows planners to select specific packages required to support steady state and contingency operations as well as homeland security/DSCA.

The AE force has the capability to move casualties, after minimal stabilization (hemorrhage controlled, shock treated, fractures splinted, and airway secured), from forward areas. This drives a requirement to provide continuity of care at the patient staging point and during transportation. Usually, this means the ability to continue basic through advanced life support while en route to further definitive medical care. Patients may be moved from forward areas of the combat zones depending on the nature of the operation.

AE UTCs

All AE UTCs and ground medical UTCs supporting the AE mission were engineered to employ during the early stages of a contingency and to optimize use of limited airlift during the initial phases of an operation without sacrificing capability. The concept is to employ an immediate, versatile, and flexible AE presence to respond to the needs of the deployed forces. After the initial buildup, the planners can supplement the deployed teams with manpower and equipment augmentation packages to support more intense or ongoing operations. AE UTCs are divided into three major categories: command and control, patient care, and support.

- **AE Command Squadron (AECS).** The AECS provides command of assigned AE forces and may deploy in advance of other AE UTCs to arrange support requirements for AE forces. The AECS advises commanders, as well as other appropriate agencies, on AE concept of operations, capabilities, and requirements. AECS also provides procedural and technical guidance, and management oversight for assigned, attached, and transiting AE elements.

- **Aeromedical Evacuation Crewmember (AECM).** This team consists of five AECMs (two flight nurses and three aeromedical evacuation technicians). The AECMs perform in-flight patient care on any fixed-wing aircraft using medical equipment that meets airworthiness testing certification standards. Crewmembers are knowledgeable about the stresses of flight and effects of altitude on patients, medical interventions, and patient safety. AECMs are the primary interface between aircrew and the medical system to meet patient care requirements. Crews can also augment any ground UTC requiring additional clinical management or mission support capability. The basic AECM team may be pared and tailored to support the patient needs and requirements by the designated chief nurse. During execution of AE operations, AE crews and CCATTs fall under the direct supervision of the AOC

in control of the airlift operation, i.e., AECT/AMOCC for theater or 18 AF TACC for intertheater airlift.

- **Critical Care Air Transport Team (CCATT).** CCATTs provide intensive care, in conjunction with AE crews, to evacuate critical patients requiring advanced care during transportation. These teams are medically responsible for their patients and function under the in-flight direction of the medical crew director (MCD) and aircraft commander. The CCATT physician is clinically responsible for care given to CCATT-assigned patients. CCATTs may be staged at crew beddown locations with fixed, contingency, or mobile AE staging facilities. Teams positioned in staging facilities may augment the patient care capability of that facility. AE missions that require CCATT support should be identified by the PMRC/AECT. The theater validating flight surgeon, in conjunction with the CCATT director, coordinates individual CCATT operational requirements. The CCATT physician determines team requirements based on each operation and may pair and tailor as needed; however, the CCATT is designed as a clinical team/capability and any adjustments ("splitting the team") degrades total capability.

- **Aeromedical Expeditionary Support Equipment Package.** When AECMs and CCATTs are deployed to forward locations early in an operation or to support global mobility task force operations, a BOS equipment packages including tents, generators, and a vehicle (when tasked) may be used to support specific location requirements.

- **Mobile Aeromedical Staging Facility (MASF).** The MASF provides rapid response patient staging, limited holding and emergent AE crew support capability. It is normally located at or near airfields capable of supporting mobility airlift and is designed to provide forward support with the smallest footprint. The MASF is normally a fifteen-person team with an embedded flyaway capability, and normally includes communications, liaison, and patient care teams. It normally is capable of handling 40 (80 if augmented) patients per day and is designed to be self-sustaining for 72 hours. When flight-qualified personnel are tasked from the MASF, they should be rapidly replaced so not to degrade the MASF holding capability. The MASF includes a capability to receive casualties, provide supportive clinical care, and meet administrative requirements on the ground while awaiting AE. CCATTs may augment forward-based MASFs to enhance rapid evacuation of critical casualties. Additionally, the MASF equipment package contains sleeping tents, water, and meals-ready-to-eat to provide BOS requirements for deployed personnel. An individual may be identified to work with the aerial port element on the flightline to coordinate AE load planning, configuration, and operational support. The MASF may be augmented with additional personnel and equipment to increase patient staging capability as needed. The MASF augmentation package includes both personnel and equipment packages.

- **Contingency Aeromedical Staging Facility (CASF).** The CASF provides manpower and equipment necessary for 24-hour staging operations for patients transiting the AE system worldwide. It differs from the MASF in that it is intended to

provide patient staging capability for up to 72 hours at a fixed location, and requires the support of a third echelon medical facility. The CASF, like the MASF, coordinates and communicates with medical and AE elements to accomplish patient care and patient movement, including ground transportation for patients entering, transiting, or leaving the AE system. It provides patient reception, supportive care, and limited emergent intervention, and ensures patients are medically and administratively prepared for flight. The CASF modules allow incremental adaptation in size as requirements change and airlift availability allows.

- **AE Liaison Team (AELT).** The Air Force AELT provides support between the forward user and the AE force in the form of operational and clinical interface. The flight nurse on the team provides the interface with patients validated for in-flight transport and assists the medical unit in preparing patients for flight. The administrative officer is responsible for working with the airlift operations center and aerial port element to ensure the aircraft is properly configured and equipment pallets, patients, and AE support personnel are properly manifested on the AE flight.

- **Crew Management Cell (CMC).** The CMC provides direct supervision and crew management for assigned, attached, and transiting AE crews and CCATTs in conjunction with the 18 AF TACC, AMOCC, AECT and base operations, as applicable. The CMC coordinates requirements to include launch and recovery, life support, lodging, food service, transportation and administration for AECMs/CCATTs. In addition, the CMC may assist AECMs and CCATTs with aircraft configuration. This UTC manages and tracks equipment for AECMs and CCATTs.

- **AE Stage Management Team (ASMT).** The ASMT manages assigned and transiting AECMs/CCATTs, aircraft configuration, and equipment to include CRAF support, patient loading interface, and resupply of in-flight kits, medications, and patient liquid oxygen.

- **AE Support Cell (AESC).** The AESC provides communications, biomedical equipment, and aircraft generation equipment (AGE) maintenance support to all UTCs assigned to the theater aeromedical evacuation force. The AESC is staged with equipment at key locations, normally with the AECS, within the AOR to support AE requirements. Communications networks should be integrated with airlift operations.

- **AE Patient Movement Items (PMI), Medical Logistics, and AE PMI Biomedical Equipment Repair Team.** PMI teams are composed of medical logistics teams and biomedical equipment repair teams. The logistics teams provide manpower for operational management of the PMI center or cells. Duties consist of storage, reception, inventory control, issue, palletizing, shipping, and identification of equipment requirements. The equipment repair teams provide regional maintenance and repair capability for equipment in PMI centers and/or cells.

AE AIRCRAFT CONSIDERATIONS

Many considerations are taken into account when selecting appropriate aircraft for AE missions. Altitude restrictions and patient load are key factors. At CRAF Stage I organic AE capability is considered adequate. Dedicated AE assets are normally available at CRAF Stage II. At CRAF Stage III, there are more aircraft available but they have the same capacity as those in Stage II. Additionally, aeromedical evacuation crewmembers should be provided combat life support equipment on the same basis as other aircraft crewmembers.

AE Mission Support Equipment

- **Patient Support Pallet (PSP).** The PSP provides litter capability on the KC-135 and expands litter capacity on the C-17. The PSP is a modified 463L pallet with litter positions and seats and is centrally managed by AMC. It is designed to support steady-state theater operational requirements as well as evacuation on opportune airlift without integral litter capability. As a result, the PSP increases the number of aircraft capable of performing AE missions.

- **SPECTRUM.** The SPECTRUM patient care module is routinely used on the C-21 aircraft to support urgent, single patient requirements (including infants). C-21 aircraft require modification to accept the SPECTRUM. The base of the SPECTRUM contains oxygen, electrical outlets and suction to support patient care.

- **Patient Loading System (PLS).** PLS is a piece of equipment, usually located at intertheater hubs, that allows patients to be downloaded from high deck aircraft at a grade similar to low deck air frames. The PLS is a method for enplaning/deplaning patients in the KC-10, KC-135 and CRAF. The PLS is designed for contingency use only, not as a primary system for loading patients during peacetime AE missions. Additionally, a K-loader or equivalent may be used for patient loading if no PLS is available.

- **Life Support for Trauma and Transport (LSTAT).** The LSTAT is used to support a single critical care patient and includes power outlets, oxygen, suction and monitor.

MEDICAL EMERGENCY INFLIGHT

All in-flight occurrences are reported to the controlling airlift operations center through the aircraft commander. The AECT or AE cell establishes a phone patch with a theater medical authority if clinically applicable. Upon completion of the operation, the MCD contacts the AECT or AE Cell to coordinate follow-up actions and requirements.

When medical emergencies occur during flight, providers take reasonable and necessary action, within their knowledge and experience, to preserve life and health. The aircraft commander is notified immediately regarding the gravity and nature of the

situation, and he/she and the MCD take appropriate actions. In critical circumstances, the MCD may request the aircraft commander (AC) declare an in-flight medical emergency to expedite landing. The MCD and AC coordinate with the appropriate airlift controlling agency to ensure potential divert locations have the appropriate medical support.

AE OF CONTAMINATED/CONTAGIOUS CASUALTIES

USTRANSCOM/SG maintains a list of bioterrorism (BT) and Centers for Disease Control (CDC) critical list (CL) agents. The imminent concern is communicable person-to-person agents. Patients with CL contamination should be quarantined and treated in-place and are *not* recommended for evacuation.

Contaminated patients should be decontaminated prior to entering the AE system. If decontamination is not possible, the geographic combatant commander and CDRUSTRANSCOM decide when aircraft will be used for evacuation. In most situations it is recommended that the necessary resources be moved to the geographic area rather than moving the contaminated patient. Using aircraft and personnel for this purpose may result in complete loss of those assets until decontamination capabilities are provided. Evacuation of contaminated and/or potentially contaminated patients requires close coordination with the State Department for approval of a destination country, overflight privileges, and landing site.

Decontamination/isolation and processing procedures should be in place to prevent spread or further damage from CBRNE threats. Evacuating contaminated/contagious casualties may require AE crews to wear protective gear and/or transport patients in isolation units. Removal could expose the patient, crew, and airframe to lethal doses of an agent (refer to Air Force Manual 44-156 [I], *Treatment of Biological Warfare Agent Casualties*). Presentation of a large number of patients needing decontamination will diminish overall mission capability. It is important leadership at all levels evaluate the impact of contaminated/contagious patient movement in the context of the overall airlift mission. All aspects of patient movement (origination, en route care and diversion, destination facilities, etc), must be evaluated prior to beginning movement.

SUGGESTED READINGS

Air Force Publications (Note: All Air Force doctrine documents are available on the Air Force Doctrine Center web page at **https://www.doctrine.af.mil**)

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GLOSSARY

Abbreviations and Acronyms

AC	aircraft commander
ACA	airspace control authority
ACL	allowable cabin loads
ACO	airspace control order
ACS	agile combat support
ACSA	acquisition and support agreements
ADCON	administrative control
AE	aeromedical evacuation
AEC	aeromedical evacuation crew
AECM	aeromedical evacuation crew member
AECS	aeromedical evacuation command squadron
AECT	aeromedical evacuation control team
AEF	air and space expeditionary force
AEG	air expeditionary group
AELT	aeromedical evacuation liaison team
AES	air expeditionary squadron
AESC	aeromedical evacuation support cell
AETF	air and space expeditionary task force
AEW	air expeditionary wing
AF	Air Force
AFDC	Air Force Doctrine Center
AFDD	Air Force doctrine document
AFNSEP	Air Force national security emergency preparedness
AFRC	Air Force Reserve Command
AGE	aerospace ground equipment
ALCF	airlift control flight
ALCM	air launched cruise missile
ALCT	airlift control team
ALTRV	altitude reservation
ALZ	assault landing zones
AMC	Air Mobility Command
AMCT	air mobility control team
AMD	air mobility division
AMLO	air mobility liaison officer
AMOCC	air mobility operations control center
AMOG	air mobility operations group
AMOS	air mobility operations squadron
AMS	air mobility squadron
AMT	air mobility tasking
AMX	air mobility express
ANG	Air National Guard
ANG/US	Air National Guard of the United States

AOC	air and space operation center
AOP	air and space operations plan
AOR	area of responsibility
APOD	aerial port of debarkation
APOE	aerial port of embarkation
APF	aerial port flight
APS	aerial port squadron
AR	air refueling
AREX	air refueling exit point
ARC	Air Reserve Component
ARCP	air refueling contact point
ARCT	air refueling control team
ARIP	air refueling initial point
ARW	air refueling wing
ASMT	aeromedical evacuation stage management team
ATO	air tasking order
ATP	allied tactical publication
AW	airlift wing
AWACS	airborne warning and control system
BOS	base operating support
BT	bioterrorism
C2	command and control
CAA	civilian air ambulance
CAOC	combined air and space operations center
CARB	contract approval review board
CASF	contingency aeromedical staging facility
CBRNE	chemical, biological, radiological, nuclear and high-yield explosive
CCATT	critical care air transport teams
CDC	Centers for Disease Control
CDRUSEUCOM	commander, United States European Command
CDRUSNORTHCOM	commander, United States Northern Command
CDRUSTRANSCOM	commander, United States Transportation Command
CFACC	combined force air and space component commander
CJCS	Chairman of the Joint Chiefs of Staff
CL	critical list
CMC	crew management cell
COA	course of action
COCOM	combatant command (COCOM) authority
COMAFFOR	commander of Air Force forces
COMSEC	communications security
CONUS	continental United States
CRAF	Civil Reserve Air Fleet
CRE	contingency response element

CRG	contingency response group
CRS	contingency response squadron
CRW	contingency response wing
CSAF	Chief of Staff of the United States Air Force
CSAR	combat search and rescue
DCO	defense coordination officer
DDOC	deployment and distribution operation center
DEPORD	deployment orders
DIRLAUTH	direct liaison authority
DIRMOBFOR-Air	director of air mobility forces
DOD	Department of Defense
DSCA	defense support to civil authorities
DTS	defense transportation system
DZ	drop zone
EAES	expeditionary aeromedical evacuation squadron
EAS	expeditionary airlift squadron
ECS	expeditionary combat support
EMCON	emissions control
EMTF	expeditionary mobility task force
EPLO	emergency preparedness liaison officer
EPW	enemy prisoner of war
ESF	emergency support function
ESSP	expeditionary site survey planning
FDS	foundational doctrine statements
FEMA	Federal Emergency Management Agency
FEMS	Federal Emergency Medical System
FOB	forward operating base
FS	flight surgeon
GAMSS	global air mobility support system
GPS	global positioning system
GSS	global support squadron
GTN	global transportation network
HLS	homeland security
HNS	host-nation support
HUMRO	humanitarian relief operation
IMA	individual mobility augmentee
IO	information operations
ISR	intel, surveillance, and reconnaissance
ITUD	integral tanker unit deployment
ITV	in transit visibility

IW	information warfare
IWST	information warfare support team
JA/ATT	joint airborne/air transportability training
JAOC	joint air and space operations center
JAOP	joint air operations plan
JDOMS	joint director of military support
JFACC	joint force air and space component commander
JFC	joint force commander
JFS	joint forces surgeon
JFSOCC	joint force special operations component commander
JMC	joint movement center
JOA	joint operation area
JOPES	Joint Operation Planning And Execution System
JSCP	Joint Strategic Capabilities Plan
JSOTF	joint special operations task force
JTF	joint task force
LOA	lead operational authority
LSTAT	life support for trauma and transportation
MAF	mobility Air Force
MAJCOM	major command
MASF	mobile aeromedical staging facility
MCD	medical crew director
MHE	materials handling equipment
NMS	National Military Strategy
MOG	maximum on ground
MRT	maintenance recovery team
MSC	Military Sealift Command
MST	mission support team
NAF	numbered Air Force
NATO	North Atlantic Treaty Organization
NDMS	National Defense Medical System
NEO	noncombatant evacuation operation
NMC	non-mission capable
NRP	National Response Plan
NVG	night vision goggles
OCONUS	outside the continental United States
OPCON	operational control
OPLAN	operation plan
OPORD	operation order
OPSEC	operations security
ORM	operational risk management

OSA	operational support airlift
PFO	principle federal officer
PLS	patient loading system
PMI	patient movement items
PMRC	patient movement requirements center
POL	petroleum, oil, and lubricants
POTUS	President of the United States
PSP	patient support pallet
RAMCC	regional air movement control center
REF	request for forces
RSOI	reception, staging, onward movement, and integration
SAM	special airlift mission
SAAM	special assignment airlift mission
SAG	state adjutant general
SAM	special air mission
SAR	search and rescue
SDDC	Surface Deployment and Distribution Command, formerly known as Military Traffic Management Command (MTMC)
SecDef	Secretary of Defense
SEMA	state emergency management agency
SOF	special operations forces
SOFA	status of force agreements
SOLE	special operations liaison element
SPIN	special instruction
TACC	tanker airlift control center
TACON	tactical control
TAG	adjutant general
TDY	temporary duty
TPFDD	time-phased force and deployment data
TRIADS	tri-wall aerial delivery system
TRO	training and readiness oversight
TTP	tactics, techniques, and procedures
TWCF	transportation working capital fund
US	United States
USAF	United States Air Force
USCENTCOM	United States Central Command
USEUCOM	United States European Command
USJFCOM	United States Joint Forces Command
USNORTHCOM	United States Northern Command
USPACOM	United States Pacific Command
USTRANSCOM	United States Transportation Command

UTC	unit type code
VFS	validation flight surgeon
WMD	weapon of mass destruction
WRM	war reserve materiel

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.** (JP 0-2)

air and space expeditionary force. An organizational structure to provide forces and support on a rotational, and thus relatively more predictable basis. They are composed of force packages of capabilities that provide rapid and responsive aerospace power. Also called **AEF**. (AFDD 1)

air and space expeditionary task force. A deployed numbered air force (NAF) or command echelon immediately subordinate to a NAF provided as the US Air Force component command committed to a joint operation. Also called **AETF.** (JP 1-02) [*The organizational manifestation of Air Force forces afield. The AETF provides a joint force commander with a task-organized, integrated package with the appropriate balance of force, sustainment, control, and force protection*.] (AFDD 1) {Italicized definition in brackets applies only to the Air Force and is offered for clarity.}

air bridge. An air refueling operation that extends the unrefueled range of aircraft transiting from Continental United States and a theater, or any two theaters. This operation reduces the number of aircraft on the ground at forward staging bases, minimizes potential en route maintenance delays, enables airlift assets to maximize their payloads, and facilitates rapid transit of combat aircraft to area of operations. (AFDD 2-6)

airdrop. The unloading of personnel or materiel from aircraft in flight. (JP 1-02)

airland. Moved by air and disembarked, or unloaded, after the aircraft has landed or while a helicopter is hovering. (JP 1-02)

airlift. Operations to transport and deliver forces and materiel through the air in support of strategic, operational, or tactical objectives. (AFDD 2-6)

air mobility. The rapid movement of personnel, materiel and forces to and from or within a theater by air. This includes both airlift and air refueling. (JP 1-02)

Air Mobility Command. The Air Force component command of the US TransportationCommand. Also called **AMC**. (JP 1-02)

air mobility control team. A cell within the air operations center and one of the core teams in the air mobility division. The air mobility control team is the centralized source of air mobility command, control, and communications for the director of mobility forces during mission execution. The director of mobility forces uses the air mobility control team 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 air mobility control team deconflicts all air mobility operations into, out of, and within the area of responsibility or joint operations area. The air mobility control team maintains execution process and communications connectivity for tasking, coordination, and flight with the air operations center's combat operations division, subordinate air mobility units, and mission forces. Also called **AMCT.** (JP 1-02)

air mobility division. Located in the joint air operations center to plan, coordinate, task, and execute the air mobility mission. Consists of the air mobility control team, airlift control team, aerial refueling control team, and aeromedical evacuation control team. Coordinates with the joint force commander's movement requirements and control authority, the theater air mobility operations control center, if established, and the Air Mobility Command's tanker/airlift control center, as required. Also called **AMD.** (JP 1-02)

air mobility express. An express airlift system that is activated when Department of Defense requirements dictate. It is comprised of express carrier aircraft and related continental United States infrastructure, Air Mobility Command airlift, and an in-theater rapid distribution system. Also called **AMX.** (JP 1-02)

air movement. Air transport of units, personnel, supplies, and equipment including airdrops and air landings. (JP 1-02)

air and space operations center. The senior agency of the Air Force component commander that provides command and control of Air Force air and space operations and coordinates with other components and Services. Also called **AOC**. (AFDD 2)

air refueling. The capability to refuel aircraft in flight, which extends presence, increases range, and serves as a force multiplier. Also called AR. (JP 1-02)

air reserve component. The forces of Air National Guard and the Air Force

Reserve Command. Also called ARC. (AFDD 1-2)

centralized control. The planning, direction, prioritization, allocation, synchronization, integration, and deconfliction of air and space capabilities to achieve the objectives of the joint force commander. (AFDD 1)

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 time-based and serves two or more points at regular intervals.

Civil Reserve Air Fleet. 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, those carriers are contracted to fly scheduled passenger, patient/casualty, and cargo channel missions, special assignment airlift missions and charter missions. This support gives AMC the capacity to meet both routine scheduled and surge commitments flexibly and simultaneously. Also called **CRAF**. (AFDD 2-6)

combatant command. A unified or specified command with a broad continuing mission under a single commander established and so designated by the President, through the Secretary of Defense and with the advice and assistance of the Chairman of the Joint Chiefs of Staff. Combatant commands typically have geographic or functional responsibilities. (JP 1-02)

combatant command (command authority). 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.** (JP 1–02)

combat offload. An expeditious procedure for offloading cargo while an aircraft

is taxiing, to reduce the ground time and materials handling equipment at an air terminal. This procedure is potentially more hazardous due to the dynamic nature of the operation. (AFDD 2-6)

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.** (JP 1-02)

coordination. The necessary action to ensure adequate exchange of information to integrate, synchronize, and deconflict operations between separate organizations. Coordination is not necessarily a process of gaining approval but is most often used for mutual exchange of information. Normally used between functions of a supporting staff. Direct authority to liaison (DIRLAUTH) is used to coordinate with an organization outside of the immediate staff or organization. (AFDD 1)

coronet. Movements of air assets, usually fighter aircraft, in support of contingencies, rotations, exercises, or aircraft movements for logistics purposes. (AFDD 2-6)

decentralized execution. The delegation of execution authority to responsible and capable lower-level commanders to achieve effective span of control and to foster disciplined initiative, situational responsiveness, and tactical flexibility. (AFDD 1)

direction. Guidance to or management of support staff functions. Inherent within command but not a command authority in its own right. In some cases, can be considered an explicit instruction or order. Used by commanders and their designated subordinates to facilitate, channel, or motivate support staff to achieve appropriate action, tempo, or intensity. Used by directors of staff agencies on behalf of the commander to provide guidance to their staffs on how best to accomplish stated objectives IAW the commander's intent. (AFDD 1)

direct liaison authorized. That authority granted by a commander (any level) to a subordinate to directly consult or coordinate an action with a command or agency within or outside of the granting command. Direct liaison authorized is more applicable to planning than operations and always carries with it the requirement of keeping the commander granting direct liaison authorized informed. Direct liaison authorized is a coordination relationship, not an authority through which command may be exercised. Also called **DIRLAUTH.** (JP 1-02)

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. (JP 1–02)

global air mobility support system. Provides responsive, worldwide support to airlift and air refueling operations. This system consists of an existing but limited set of 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. Also called **GAMSS**. (AFDD 2-6)

humanitarian operation. An operation specifically mounted to alleviate human suffering where responsible civil actors in an area are unable or unwilling to adequately support a population. It may precede, parallel, or complement the activity of specialized civil humanitarian organizations. (AFDD 2-6)

intertheater airlift. The common-user airlift linking theaters to the continental United States and to other theaters as well as the airlift within the continental United States. The majority of these air mobility assets is assigned to the Commander, United States Transportation Command. Because of the intertheater ranges usually involved, intertheater airlift is normally conducted by the heavy, longer range, intercontinental airlift assets but may be augmented with shorter range aircraft when required. Formerly referred to as “strategic airlift.” See also **intratheater airlift.** (JP 1-02)

in-transit visibility. The ability to track the identity, status, and location of Department of Defense units, and non-unit cargo (excluding bulk petroleum, oil, and lubricants) and passengers; patients; and personal property from origin to consignee or destination across the range of military operations. Also called **ITV.** (JP 1-02)

intratheater airlift. Airlift conducted within a theater. Assets assigned to a geographic combatant commander or attached to a subordinate joint force commander normally conduct intratheater airlift operations. Intratheater airlift provides air movement and delivery of personnel and equipment directly into objective areas through air landing, airdrop, extraction, or other delivery techniques as well as the air logistic support of all theater forces, including those engaged in combat operations, to meet specific theater objectives and requirements. During large-scale operations, US Transportation Command assets may be tasked to augment intratheater airlift operations, and may be temporarily attached to a joint force commander. Formerly referred to as theater airlift. See also **intertheater airlift.** (JP 1-02)

joint force air component commander. The commander within a unified command, subordinate unified command, or joint task force responsible to the establishing commander for making recommendations on the proper employment of assigned, attached, and/or made available for tasking air forces; planning and coordinating air operations; or accomplishing such operational missions as may

be assigned. The joint force air component commander is given the authority necessary to accomplish missions and tasks assigned by the establishing commander. Also called **JFACC** (JP 1-02) *[The **joint force air and space component commander** (JFACC) uses the joint air and space operations center to command and control the integrated air and space effort to meet the joint force commander's objectives. This title emphasizes the Air Force position that air power and space power together create effects that cannot be achieved through air or space power alone.]* [AFDD 2] {Italicized definition in brackets applies only to the Air Force and is offered for clarity.}

joint publication. A publication containing joint doctrine and/or joint tactics, techniques, and procedures that involves the employment of forces prepared under the cognizance of Joint Staff directorates and applicable to the Military Departments, combatant commands, and other authorized agencies. It is approved by the Chairman of the Joint Chiefs of Staff, in coordination with the combatant commands and Services. Also called **JP**. (JP 1-02)

line of communications. A route, either land, water, and/or air, that connects an operating military force with a base of operations and along which supplies and military forces move. Also called **LOC.** (JP 1-02)

maneuver. 1. A movement to place ships, aircraft, or land forces in a position of advantage over the enemy. 2. A tactical exercise carried out at sea, in the air, on the ground, or on a map in imitation of war. 3. The operation of a ship, aircraft, or vehicle, to cause it to perform desired movements. 4. Employment of forces in the battlespace through movement in combination with fires to achieve a position of advantage in respect to the enemy in order to accomplish the mission. (JP 1-02)

mission. 1. The task, together with the purpose, that clearly indicates the action to be taken and the reason therefore. 2. In common usage, especially when applied to lower military units, a duty assigned to an individual or unit; a task. 3. The dispatching of one or more aircraft to accomplish one particular task. (JP 1-02)

mobility Air Forces. The Mobility Air Forces are comprised of those air components and Service components that are assigned air mobility forces and/or that routinely exercise command authority over their operations. Also called **MAF.** (JP 1-02)

multi-point refueling system. A limited number of KC-135 aircraft can be equipped with external wing-mounted pods to conduct drogue air refueling, while still maintaining boom air refueling capability on the same mission. This dual refueling capability makes KC-135s with multi-point refueling systems ideal for use as ground alert aircraft. Also called **MPRS**. (JP 1-02)

operational control. 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) and may be delegated within the command. When forces are transferred between combatant commands, the command relationship the gaining commander will exercise (and the losing commander will relinquish) over these forces must be specified by the Secretary of Defense. Operational control 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; it does not, in and of itself, include authoritative direction for logistics or matters of administration, discipline, internal organization, or unit. Also called **OPCON.** (JP 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. See also strategic level of war; tactical level of war. (JP 1-02)

PHOENIX RAVEN. Specially trained security forces teams that deploy with the air mobility aircraft to mitigate threats. These teams are comprised of individuals trained and equipped to provide protection of the aircraft and/or aircrews when transiting high-risk areas. (AFDD 2-6)

reachback. The process of obtaining products, services, and applications, or forces, or equipment, or material from organizations that are not forward deployed. (JP 1-02)

reliability tanker. An air mobility tanker that operates within a given area with no scheduled receiver. It acts as a flying spare should another tanker not be able to pass fuel. Additionally it can be used in emergencies when aircraft that were not programmed to receive fuel require it, i.e. combat disabled aircraft or

those in which flight conditions have caused excess fuel burn. (AFDD 2-6)

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 these 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. (JP 1-02)

support. 1. The action of a force that aids, protects, complements, or sustains another force in accordance with a directive requiring such action. 2. A unit that helps another unit in battle. 3. An element of a command that assists, protects, or supplies other forces in combat. (JP 1-02)

task force. 1. A temporary grouping of units, under one commander, formed for the purpose of carrying out a specific operation or mission. 2. A semi-permanent organization of units, under one commander, formed for the purpose of carrying out a continuing specific task. (JP 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 direction and control of movements or maneuvers within the operational area 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. When forces are transferred between combatant commands, the command relationship the gaining commander will exercise (and the losing commander will relinquish) over these forces must be specified by the Secretary of Defense. Tactical control provides sufficient authority for controlling and directing the application of force or tactical use of combat support assets within the assigned mission or task. Also called **TACON.** (JP 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. (JP 1-02)

Tanker Airlift Control Center. The Air Mobility Command direct reporting unit responsible for tasking and controlling operational missions for all activities involving forces supporting US Transportation Command's global air mobility mission. The 18 AF Tanker Airlift Control Center is comprised of the following functions: current operations, command and control, logistic operations, aerial port operations, aeromedical evacuation, flight planning, diplomatic clearances,

global readiness, global channel operations, mobility management and weather. Also called **[18 AF] TACC.** (JP 1-02)