

Joint Publication 3-17



Air Mobility Operations



02 October 2009



PREFACE

1. Scope

This publication provides joint doctrine for planning, employing, and assessing air mobility operations across the range of military operations.

2. Purpose

This publication has been prepared under the direction of the Chairman of the Joint Chiefs of Staff. It sets forth joint doctrine to govern the activities and performance of the Armed Forces of the United States in joint operations and provides the doctrinal basis for interagency coordination and for US military involvement in multinational operations. It provides military guidance for the exercise of authority by combatant commanders and other joint force commanders (JFCs) and prescribes joint doctrine for operations, education, and training. It provides military guidance for use by the Armed Forces in preparing their appropriate plans. It is not the intent of this publication to restrict the authority of the JFC from organizing the force and executing the mission in a manner the JFC deems most appropriate to ensure unity of effort in the accomplishment of the overall objective.

3. Application

a. Joint doctrine established in this publication applies to the joint staff, commanders of combatant commands, subunified commands, joint task forces, subordinate components of these commands, and the Services.

b. The guidance in this publication is authoritative; as such, this doctrine will be followed except when, in the judgment of the commander, exceptional circumstances dictate otherwise. If conflicts arise between the contents of this publication and the contents of Service publications, this publication will take precedence unless the Chairman of the Joint Chiefs of Staff, normally in coordination with the other members of the Joint Chiefs of Staff, has provided more current and specific guidance.

Commanders of forces operating as part of a multinational (alliance or coalition) military command should follow multinational doctrine and procedures ratified by the United States. For doctrine and procedures not ratified by the United States, commanders should evaluate and follow the multinational command's doctrine and procedures, where applicable and consistent with US law, regulations, and doctrine.

For the Chairman of the Joint Chiefs of Staff:

A handwritten signature in black ink, appearing to read "Lloyd J. Austin III". The signature is fluid and cursive, with the first letters of the first and last names being capitalized and prominent.

LLOYD J. AUSTIN III
Lieutenant General, USA
Director, Joint Staff

**SUMMARY OF CHANGES
JOINT PUBLICATION 3-17
DATED 14 AUGUST 2002
CHANGE 1, 14 APRIL 2006**

- **Eliminates 18th Air Force and incorporates Air Mobility Command 618th Tanker Airlift Control Center as the direct reporting unit responsible for tasking and controlling operational missions for all activities involving forces supporting US Transportation Command's global air mobility mission**
- **Modifies publication to incorporate asset visibility, include mission funding considerations, and include sustainment planning for air mobility missions**
- **Adds information to address the use of Civil Reserve Air Fleet in a contaminated environment**
- **Updates aeromedical evacuation procedures**
- **Clarifies the function of the single port manager**
- **Expands discussion on the roles and functions of the senior airfield authority**
- **Provides additional detail and information regarding air mobility operations in multinational environments**
- **Includes new capabilities and enhancements such as the joint precision airdrop system, and the joint task force - port opening capability**
- **Incorporates/clarifies the role of the joint force air component commander, the joint deployment and distribution operations center, and the joint air operations center**
- **Updates air mobility operations command relationships**
- **Modifies description of a mobile aeromedical staging facility**
- **Modifies/includes the following definitions: channel airlift, senior airfield authority, air mobility division, combat control team, mobility air forces, operational support airlift, Service organic transportation assets, and single port manager**

Intentionally Blank

TABLE OF CONTENTS

	PAGE
EXECUTIVE SUMMARY	ix
CHAPTER I	
GENERAL OVERVIEW	
• Introduction.....	I-1
• Movement and Maneuver	I-1
• Sustainment.....	I-2
• Deployment.....	I-2
• Air Mobility Forces Employment Missions	I-3
• Air Mobility Fundamentals.....	I-3
• National Air Mobility System.....	I-8
CHAPTER II	
COMMAND AND CONTROL OF AIR MOBILITY OPERATIONS	
• General.....	II-1
• Command Relationships	II-2
• Command and Control.....	II-2
• Command and Control Structures.....	II-5
• Command and Control of Airfields During Contingency Operations	II-13
CHAPTER III	
PLANNING AIR MOBILITY OPERATIONS	
• Air Mobility Planning Considerations	III-1
• Marshalling	III-2
• Intelligence.....	III-6
• Other Considerations	III-8
• Communications Systems.....	III-11
• Sustainment.....	III-12
• Assessment.....	III-13
• Multinational Planning Considerations.....	III-15
• Other Planning Factors	III-15
CHAPTER IV	
AIRLIFT	
• General.....	IV-1
• Airlift Operations	IV-1
• Airlift Missions	IV-4
• Airland Delivery	IV-13
• Airdrop Delivery.....	IV-20

- Planning Considerations for Airborne Assaults and Follow-on Airland Operations IV-29

CHAPTER V
AIR REFUELING

- General V-1
- Air Refueling Operations V-3
- Air Refueling Missions V-5
- Planning Air Refueling Operations V-9

CHAPTER VI
AIR MOBILITY SUPPORT

- General VI-1
- Air Mobility Command Affiliated Contingency Load Planning Program VI-1
- Core Functions of Air Mobility Support VI-2
- Global Air Mobility Support System Elements VI-5
- Airfield Opening and Global Air Mobility Support System VI-8

APPENDIX

- A References A-1
- B Administrative Instructions B-1

GLOSSARY

- Part I - Abbreviations and Acronyms GL-1
- Part II - Terms and Definitions GL-6

FIGURE

- II-1 Routine Command Relationships for Air Mobility Forces⁶ II-6
- II-2 Command Relationships for Air Mobility Forces Attached to a Joint Task Force II-7
- II-3 The Joint Air Operations Center and Command Relationships for Air Mobility Forces II-9
- III-1 Factors Affecting Selection of Marshalling Areas and Departure Airfields III-3
- III-2 Departure Airfield Operations III-5
- III-3 Arrival Airfield Operations III-7
- IV-1 Basic Airlift Missions IV-5
- IV-2 Illustration of Hub and Spoke and Direct Delivery IV-16
- IV-3 Illustration of Lily Pad Operations IV-17
- IV-4 Illustration of Air Bridge Operations IV-17

IV-5 Potential Landing Zone Considerations IV-20
IV-6 Area Drop Zone..... IV-25
IV-7 Circular Drop Zone IV-26
V-1 Basic Air Refueling Missions..... V-5

Intentionally Blank

EXECUTIVE SUMMARY COMMANDER'S OVERVIEW

- **Discusses the National Air Mobility System**
 - **Addresses Command and Control of Air Mobility Operations**
 - **Outlines Some Overarching Air Mobility Planning**
 - **Explains Airlift Operations, Including Aeromedical Evacuation**
 - **Discusses Air Mobility Refueling Operations**
 - **Discusses Air Mobility Support Operations**
-

General Overview

Air mobility operations are a rapid means to project and sustain power across the globe in support of United States (US) national interests and a critical enabler to the US National Military Strategy.

Air mobility is a network of systems that combines airlift, airdrop, aeromedical evacuation (AE), air refueling (AR), and air mobility support assets, processes, and procedures into an integrated whole to support the transport of personnel and materiel. The Secretary of Defense (SecDef) directs the assignment of air mobility forces to the Commander, United States Transportation Command (CDRUSTRANSCOM) and other combatant commanders (CCDRs). To deter threats against, or to assist in the defense or pursuit of United States (US) national interests, the Department of Defense maintains forces, organizations, and processes necessary to conduct air mobility operations. The National Air Mobility System (NAMS) is a broad and comprehensive system that provides the President, SecDef, and CCDRs with rapid global mobility. The mobility air forces (MAF) are those forces assigned to combatant commands that provide rapid global mobility and conduct air mobility operations. The MAF's four core functions are airlift, AR, air mobility support, and AE. NAMS consists of forces that perform intertheater, intratheater, and organic mobility operations. US Transportation Command (USTRANSCOM) and the geographic combatant commands (GCCs) possess air mobility assets that are capable of performing both intertheater and intratheater operations. A unique aspect of these operations is their reliance on Global Air Mobility Support System (GAMSS) and the worldwide command and control (C2) capabilities of the Air Mobility Command 618th

Tanker Airlift Control Center (618th TACC). The GAMSS is comprised of a limited number of permanent en route support locations plus mobile forces that deploy under the global reach laydown strategy. Permanent en route support locations are manned to handle day-to-day peacetime operations. Deployable GAMSS forces can be tailored to augment permanent locations during large-scale contingencies or to establish en route support at new locations where this support does not exist. **GAMSS forces enable USTRANSCOM to establish a network of support locations (terminals) linked together by air lines of communications to create an air bridge.** GAMSS forces, by augmenting permanent terminals or establishing new ones, enable airlift aircraft to move personnel, equipment, and supplies to the desired location. **The 618th TACC is the C2 node for most intertheater operations.**

National Air Mobility System Components.

The NAMS draws its forces and capabilities from both the civil and military air mobility components. Forces and capabilities apportioned to USTRANSCOM, GCCs, and the Services are determined by each organization's requirements for the specialized contributions of each NAMS component. **The civil component of the NAMS is increasingly called upon to accomplish various air mobility operations.** The civil component is comprised of civilian airlift carriers who have signed up as members of the Civil Reserve Air Fleet (CRAF). The CRAF is a voluntary contractual program where civil carriers agree to augment military airlift during a crisis in exchange for peacetime defense business. **The military component of the NAMS is subdivided into active Air Force component, Air Force Reserve, and Air National Guard (ANG) portions.** Active Air Force component forces conduct routine and contingency missions in support of all common-user requirements. Air Force Reserve Command (AFRC) and the ANG provide vital airlift, AR, and air mobility support capabilities to Defense Transportation System.

Command and Control of Air Mobility Operations

Centralized control and decentralized execution of air mobility missions are the keys to effective and efficient air mobility operations.

Centralized control allows commanders to focus on those priorities that lead to victory, while decentralized execution fosters initiative, situational responsiveness, and tactical flexibility. Separate but integrated command structures exercise centralized control over USTRANSCOM-assigned and theater-assigned and attached air mobility forces. This

arrangement ensures a smooth interaction of the intertheater and intratheater forces. MAF operate as an integrated system of assets, and satisfy the supported CCDR's mobility requirements through common procedures that bridge the command structures of theater and continental United States (CONUS)-based forces.

A critical element of this partnership is linking centralized control agencies such as the CONUS-based forces' USTRANSCOM Deployment and Distribution Operations Center and 618th TACC to the theaters' joint deployment distribution centers (JDDOCs) and air operation centers (AOCs). These MAF partners exercise centralized control to ensure the joint force commander (JFC) is supported with responsive, capable, and seamless air mobility. Air mobility commanders practice decentralized execution by delegating execution authority to subordinate commanders. **Theater air control system (TACS)** is the US Air Force (USAF) mechanism for commanding and controlling theater air power for the commander, Air Force forces (COMAFFOR). The Air Force air and space operations center (AOC) is the senior C2 element of TACS and includes personnel and equipment of the necessary disciplines to ensure effective control of air operations (e.g., communications, operations, intelligence).

There are three independent command and control (C2) structures that, when integrated, constitute the global air mobility C2 system. They are the intertheater, intratheater, and joint task force systems.

Intertheater air mobility operations are generally global in nature and service the CONUS-to-theater air mobility needs of the supported commander. Air mobility assets, assigned to CDRUSTRANSCOM, execute the majority of intertheater airlift missions; C2 of these assets is normally exercised through 618th TACC. The 618th TACC is the primary worldwide planning and execution agency for activities involving air mobility forces operating to fulfill CDRUSTRANSCOM-directed requirements. Exceptions to this are the C2 of CONUS operational support airlift (OSA) missions, which are directed by USTRANSCOM Joint Operational Support Airlift Center and special distinguished visitor missions flown and controlled by the 89th Airlift Wing (Presidential support).

Intratheater air mobility operations are defined by geographic boundaries. **Air mobility forces assigned or attached to that GCC normally conduct these operations.** Intratheater common-user air mobility assets are normally scheduled and controlled by the theater AOC or joint air

operations center (JAOC) if established. The ability to identify and coordinate movement requirements (visible in Joint Deployment and Distribution Enterprise-common systems) is critical to providing theater reachback support from the 618th TACC. When intratheater air mobility requirements exceed the capability of assigned or attached forces, other mobility forces can support intratheater airlift using a support relationship.

Joint Task Force (JTF) Air Mobility Operations. During joint operations, it may be necessary to establish a JTF within a GCC's AOR. This allows the GCC to maintain a theaterwide focus and at the same time respond to a regional requirement within the theater. When this occurs, a JTF will be designated and forces made available for this operation. The COMAFFOR will normally be delegated operational control of Air Force assets, and if designated the joint force air component commander (JFACC), will typically exercise tactical control of air mobility forces made available to the JFACC. If the JTF requires additional air mobility forces beyond those already made available for tasking, additional augmentation may be requested. **The COMAFFOR may appoint a director of mobility forces (DIRMOBFOR) to function as coordinating authority for air mobility with all commands and agencies, both internal and external to the JTF,** including the JAOC, the 618th TACC, and the JDDOC and/or the joint movement center (JMC). The DIRMOBFOR will ensure the effective integration of intertheater and intratheater air mobility operations, and facilitate intratheater air mobility operations on behalf of the COMAFFOR. The DIRMOBFOR provides guidance to the air mobility division (AMD) on air mobility matters, but such guidance must be responsive to the timing and tempo of operations managed by the JAOC director.

The air mobility C2 system relies on consistent processes and the ability to rapidly expand to meet the specific needs of the task at hand. This facilitates rapid transition from peacetime to contingency or wartime operations.

The COMAFFOR executes the C2 of USAF air operations in the theater or AOR through the AOC. **One of the AOC divisions, AMD, usually oversees intratheater air mobility operations.** The AMD is made up of an air mobility control team, airlift control team, AR control team, and aeromedical evacuation control team. The AMD will integrate and direct the execution of theater assigned or attached Service organic mobility forces operating in the AOR or joint operations area in support of JFC objectives.

Planning Air Mobility Operations

Air Mobility Planning Considerations.

Mobility aircraft can accomplish a variety of missions. Therefore, mission planning must include an intelligent application of sound tactical concepts learned from previous conflicts, operational evaluations, training exercises, tactics development programs, and threat analysis.

Air mobility aircraft typically require preferred altitudes and routing to avoid or mitigate threats. Congested airspace and potential fratricide are also major concerns. In addition, air mobility planning considers international, host nation, and military airspace control plans and procedures.

Airlift operations often require secure air corridors or operating areas. These may be shared with other air missions. Regardless, the use of a corridor requires close coordination between the joint force airspace control authority, area air defense commander, JAOC, all other joint force component ground and aviation elements.

Marshalling includes the preparations required to plan, document, and load equipment and personnel aboard the aircraft.

The marshalling plan provides the administrative and logistic procedures to accomplish these tasks. **The marshalling area is usually located near departure camps and airfields** to conserve resources and reduce the opportunity for observation. **The Air Force component's portion of the marshalling operation is developed during air movement planning** and consists of instructions regulating aircraft movement and the parking plan.

Air mobility planning must begin with threat analysis and threat avoidance.

Normally, mobility assets operate in a permissive to low-threat environment. If required to operate in a medium to high threat environment, significant integration must occur with joint/coalition air and ground combat forces to mitigate the threat and increase survivability. The unique aspects of airborne, ground, electronic warfare, chemical, biological, radiological, and nuclear, and pandemic disease threats must be addressed.

Assessments must be conducted prior to and during air mobility operations.

Prior to executing air mobility operations, consideration must be given to the following planning factors: capabilities and limitations and airland facilities available in the departure and arrival areas; hours of operation, climatology, weather services, flight planning support, airfield lighting systems,

airfield navigational aids, communications, marshalling/storage areas, and road networks; host nation support; and availability of fuel. **During air mobility operations, assessors must ensure** that the user's requirement is being met in accordance with established priorities and air mobility forces are being used efficiently and adapting to changes in the operations tempo or focus.

Airlift

Airlift supports the US National Military Strategy by rapidly transporting personnel and materiel to and from or within a theater.

Airlift operations transport and deliver forces and materiel through the air in support of strategic, operational, and/or tactical objectives. Airlift offers its customers a high degree of speed, range, and flexibility. Airlift enables commanders to respond and operate in a wide variety of circumstances and time frames that would be impractical through other modes of transportation. Airlift is a cornerstone of global force projection.

The vast majority of the air mobility force is capable of accomplishing any classification of airlift.

Airlift operations are defined by the nature of the mission rather than the airframe used. The basic mission of airlift is passenger and cargo movement. **This includes combat employment and sustainment, AE, special operations support, and operational support airlift.** **Combat employment missions** allow a commander to insert surface forces directly and quickly into battle and to sustain combat operations. **Combat sustainment missions** may consist of reinforcement of front-line forces engaged with the adversary. **AE** specifically refers to USAF provided fixed-wing movement of regulated casualties using organic and/or contracted mobility airframes with AE aircrew trained explicitly for this mission. During **special operations support missions**, specified airlift forces provide unique airland and airdrop support to SOF. **OSA** is a special classification of airlift operations that moves high-priority passengers and cargo with time, place, or timesensitive/mission-capable requirements.

Air Refueling

Air refueling (AR) permits aircraft to operate beyond their unrefueled ranges and permits larger takeoff payloads and added endurance. By enabling

AR allows air assets to rapidly reach any trouble spot around the world with less dependence on forward staging bases. Furthermore, **AR significantly expands the force options available to a commander by increasing the range, payload, loiter time, and flexibility of other aircraft.** AR is a critical force multiplier across the full range of global and

their payload to be maximized, the combat potential of receiver aircraft is significantly increased.

theater employment scenarios. AR missions (i.e., global strike support, air bridge support, aircraft deployment support, theater support to combat air forces, and special operations support) represent the broad, fundamental, and continuing activities of the AR system. **Force extension** is the AR of one tanker by another and is the most efficient means to provide deployment support, given a limited number of tanker aircraft. This capability can be used whenever the fuel requirements of the escorting tanker and its receivers exceed the tanker's takeoff fuel capacity.

Air Mobility Support

Successful employment of the airlift and AR force is contingent upon establishing and maintaining a Global Air Mobility Support System force that enables aerial deployment, employment, sustainment, and redeployment of US forces throughout the range of military operations.

Air mobility support forces provide the responsive, worldwide foundation for airlift and AR operations. This force is divided between USTRANSCOM, 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. GAMSS forces are drawn from active duty, Air Force Reserve, and ANG components. **The core functions provided by GAMSS are C2, aerial port, and maintenance.** GAMSS forces provide their own unique C2 to accurately plan, flow, and track air movements and provide in-transit visibility of equipment and passengers. An **aerial port** is an operating location, usually an established airfield, which has been designated for the sustained air movement of personnel and materiel. 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. **GAMSS maintenance support** is based on resources of people, parts, and equipment leveraged from CONUS and outside the continental US units.

CONCLUSION

This publication provides joint doctrine for planning, employing, and assessing air mobility operations across the range of military operations.

Intentionally Blank

CHAPTER I

GENERAL OVERVIEW

“As the global war on terror[ism] continues, our forces are in distant countries fighting organized terrorists who seek to destroy our nation and destabilize the world. Military operations in these austere places are challenged by the need to deploy and supply troops over great distances. Airlift is a precious lifeline that keeps them fed and equipped, brings the wounded home, and eventually, brings our forces home.”

Congressman Jim Saxton, 4 April 2005

1. Introduction

Air mobility is a network of systems that combines airlift, airdrop, aeromedical evacuation (AE), air refueling (AR), and air mobility support assets, processes, and procedures into an integrated whole to support the transport of personnel and materiel. Air mobility operations are a rapid means to project and sustain power across the globe in support of US national interests and a critical enabler to the US National Military Strategy. The Secretary of Defense (SecDef) directs the assignment of air mobility forces to the Commander, US Transportation Command (CDRUSTRANSCOM) and other combatant commanders (CCDRs). To deter threats against, or to assist in the defense or pursuit of US national interests, the Department of Defense (DOD) maintains forces, organizations, and processes necessary to conduct air mobility operations. The Air Force programs for air mobility forces which are assigned to US Transportation Command (USTRANSCOM) as owner of the Defense Transportation System (DTS) and the Joint Deployment and Distribution Enterprise (JDDE). **Rapid global mobility is the timely movement, positioning, and sustainment of military forces and capabilities across the range of military operations.** Air mobility enables commanders to simultaneously execute the joint functions of movement, maneuver, and sustainment at the strategic, operational, and tactical levels of war.

2. Movement and Maneuver

a. **Rapid global mobility** uniquely contributes to movement and maneuver. Air mobility forces enhance other forces' combat power and flexibility, either by extending their range, bolstering their staying power, or providing them with greater maneuverability. Airlift allows deployment of critical early entry force packages over strategic distances without delays caused by terrain or obstacles. AR extends the range and expedites the arrival of self-deploying aircraft, precluding the need for intermediate staging bases. Airlift and airdrop capabilities allow shifting, regrouping, or movement of joint forces in a theater to attain operational reach and positional advantage.

b. **Redeployment air mobility operations involve air movement of personnel, units, and materiel from deployed positions within or between an area of responsibility (AOR) and joint operations area (JOA).**

c. **Withdrawal operations involve combat air movement of personnel, units, and materiel from positions in the immediate vicinity of adversary forces.** The

purpose of these movements may range from withdrawal operations to lateral movement of forces to new operating locations. These operations generally are planned to accomplish a movement with the minimum expenditure of air mobility resources. However, in higher threat situations it may also be necessary to preserve the combat capabilities of departing units for as long as possible at the departure terminal, while building them up as rapidly as possible at the arrival terminal. In such cases, operational requirements may be more important than the efficient use of allowable cabin loads (ACLs). In the latter stages of a complete extraction of friendly forces from a combat area, commanders should provide suitable operational assets to protect both the forces being extracted and the air mobility forces engaged in their movement.

3. Sustainment

a. Routine sustainment air mobility missions involve movement of materiel and personnel to reinforce or resupply forces already deployed or employed in operations. Routine sustainment missions also include missions flown in support of military and nonmilitary organizations involved in humanitarian relief operations. These operations normally deliver the user's requirements with the minimum expenditure of air mobility resources. Routine sustainment planning usually assumes user requirements and the general air and ground security situation allow some flexibility in the actual delivery times of specific loads. Flight schedules and load plans are made to maximize throughput from available ACLs and support resources. However, when sustainment channels are operated as part of an integrated, end-to-end distribution process, time definite delivery (TDD) and interoperable load configurations may drive schedules and load plans. When practical, routine sustainment should be planned to utilize backhaul capacity. Depending on theater and user priorities, typical backhaul loads might include other friendly evacuees, enemy prisoners of war, excess or repairable weapons, and materiel of moderate to high value. In some cases, retrograde movements of repairable items must be planned and executed with the same TDD discipline as sustainment movements to ensure timely return of items to repair facilities.

b. **Combat sustainment air mobility operations involve movement of supplies, materiel, and personnel to reinforce or resupply units already engaged in combat.** Combat sustainment planning usually assumes requirements and threat situations limit flexibility of delivery times, locations, and configurations of specific loads. Flight schedules and load plans are usually driven by combat requirements rather than to maximize utilization of ACLs.

4. Deployment

Deployment is the movement of forces within operational areas or the relocation of forces and materiel to desired operational areas. Deployment encompasses all activities from origin or home station through destination, specifically including intra-continental United States, intertheater, and intratheater movement legs, staging, and holding areas. If these operations must occur in a higher threat environment, tactics, escort requirements, and objective area support requirements could reduce the throughput of the overall air

mobility system and limit airlift capacity or AR offload amounts. Commanders should also consider the backhaul capacity of the air mobility forces. Using this capacity for rearward movement of personnel, patients, materiel, and reparable items or the repositioning or redeployment of units can save additional missions from being scheduled or diverted.

Deployment and redeployment are covered in detail in Joint Publication (JP) 3-35, Joint Deployment and Redeployment Operations.

5. Air Mobility Forces Employment Missions

Air mobility forces conduct employment missions when they airlift units, cargo, or personnel, offload fuel in ground operations, or refuel aircraft during combat operations. Airlift forces can move combat-loaded units to maximize their readiness for immediate combat operations. Given the assumption of immediate combat, user requirements should dictate scheduling and load planning. However, the threat or peculiarities of large-scale operations may dictate adjustments to the user's plans or operations to accommodate the ACL limitations, tactical procedures, and defensive support requirements of the airlift force. AR missions also primarily serve combat air assets directly engaging in combat operations. Fuel loads, flight profiles, and orbits should be determined by combat aircraft requirements. However, threats may dictate modifications to the optimum plan in order to protect these limited resources. All air mobility forces can support surge employment operations during the initial stages of a conflict or when required. Commanders should consider the impact that surge operations would have on sustainment and force extraction missions. Backhaul is difficult during this type of mission, as the situation typically limits ground and loiter times and should be limited except for the rearward movement of essential personnel, wounded personnel, or other friendly evacuees.

6. Air Mobility Fundamentals

a. **Airlift Delivery Methods.** There are two basic modes of airlift: airland and airdrop. The delivery method is based on user requirements; type of environment; availability; adequacy; security of airfields, landing zones (LZs), and drop zones (DZs) near the objective area; and aircraft capability.

(1) **Airland is the most frequently used airlift delivery method.** It permits delivery of larger loads with less risk of cargo loss or damage than the airdrop method. Airland encompasses all situations where personnel and cargo are offloaded while the aircraft is on the ground or, in the case of vertical takeoff and landing aircraft, after it has entered a hover. Although crews normally accomplish offloading from a stationary aircraft with engines shut down, procedures exist to offload with engines running when necessary to reduce ground time. In a higher threat environment, or when sufficient materials handling equipment (MHE) is not available, procedures exist to "combat offload" from a moving aircraft.

(2) **Airdrop** is the unloading of personnel or materiel from aircraft in flight and **includes all methods of delivering personnel, equipment, and supplies from an airborne aircraft.** This enables commanders to project combat power into areas lacking suitable or secure airfields. Airdrops are an excellent alternative when using an uncontaminated aircraft delivering mission critical cargo into a chemical, biological, radiological, or nuclear (CBRN) environment. Airdrop enables commanders to capitalize on the element of surprise because of the speed of delivery and the vast number of potential objective areas where forces can be employed. However, the additional weight and space required for parachute rigging and cushioning material reduces the amount of cargo or personnel each aircraft can deliver. The most common means of rigging equipment and supplies for airdrop are the heavy equipment method, container delivery system (CDS), and door bundles. Precision guided rigging equipment should be considered for combat troops operating in austere locations.

The various tactics, techniques, and procedures (TTP) associated with each delivery method are discussed in Chapter IV, “Airlift.”

b. **AR.** AR is an integral part of US airpower. It significantly expands deployment, employment, and redeployment options available by increasing the range, payload, and flexibility of air forces. Therefore, AR is an essential capability in conducting air operations worldwide and is especially important when overseas basing is limited or not available. Receiver requirements and tanker availability dictate how much fuel can be offloaded, where the refueling will take place, and when the rendezvous will occur. The receiver aircraft’s performance characteristics will dictate AR speed, altitude, and allowable maneuvering during the refueling.

(1) **AR Anchors and Tracks.** AR is normally conducted in one of two types of airspace: an anchor area or along an AR track. A detailed discussion of tracks and anchors is contained in Chapter V, “Air Refueling.”

(2) **AR Systems.** AR is conducted using one of two systems: boom or drogue.

(a) Most United States Air Force (USAF) and some allied aircraft use boom refueling. In boom refueling, the tanker aircraft inserts its AR boom into the receiver aircraft’s AR receptacle. Boom refueling allows for the rapid transfer of fuel under high pressure to the receiver. This is especially important when passing large quantities of fuel to either large receiver aircraft or multiple fighter-type aircraft. Most USAF tanker aircraft are boom equipped.

(b) United States Navy (USN), United States Marine Corps (USMC), refuelable USAF rotary-wing aircraft, and most allied aircraft use drogue refueling. In drogue refueling, a hose and basket system is reeled into the air by the tanker aircraft. Receiver aircraft then “plug” the basket with an external probe. Due to hose limitations, fuel transfer during drogue refueling is slower than boom refueling. For most KC-135 tanker aircraft, the drogue assembly must be externally mounted on the boom prior to flight. Therefore, once airborne, most KC-135s can only perform one type of refueling at



A KC-135R boom type aircraft refueling an F-22.

a time. KC-10 refueling aircraft are equipped with a centerline drogue and an AR boom. They can also be equipped with wingtip AR pods to expand their drogue refueling capability. They can refuel via both methods on the same mission although they cannot do this simultaneously. Additionally, there are a limited number of KC-135 aircraft, in the inventory that can be equipped with external wing-mounted pods to conduct drogue AR, while still maintaining boom AR capability on the same mission. As noted above, this cannot be accomplished simultaneously. This dual refueling capability makes KC-10s and KC-135s with multi-point refueling systems ideal for use as ground alert aircraft.

c. **Scheduling Categories.** For scheduling purposes, air mobility missions are conducted on either a recurrent or surge basis. Recurrent operations establish a scheduled flow of individual aircraft to make the most of available aircraft and Global Air Mobility Support System (GAMSS) assets. Surge operations allow for rapid and substantial movement of cargo and personnel because a large number of assets are committed toward the operation but can only be sustained for a short period of time. Surge operations may disrupt the efficiency of the National Air Mobility System (NAMS), require significant regeneration time, and complicate interactions of intertheater and intratheater forces. The CCDR requests intertheater airlift in support of deployment, sustainment, and redeployment operations through the Joint Operation Planning and Execution System (JOPES) process. The supported commander, in coordination with supporting commanders and Services, establishes movement requirements and develops time-phased force and deployment data (TPFDD) in JOPES. USTRANSCOM, in turn, extracts the movement requirements from the TPFDD, validates the mode of transportation, and forwards the tasking to its components for movement. Intertheater airlift sustainment involves movement of replacement supplies, equipment, and personnel.

Detailed procedures are outlined in JP 3-35, Deployment and Redeployment Operations.



US Marine F-18 receiver aircraft using drogue air refueling procedures.

d. **Air Mobility Mission Categories.** The various types of missions flown by NAMS are:

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

(2) **Channel airlift missions provide common-user airlift service on a scheduled basis between two or more predesignated points.** Channel airlift missions support passengers and cargo moving over established worldwide routes (CCDR or Service-validated) that are served by scheduled DOD aircraft under Air Mobility Command (AMC) control or commercial aircraft contracted and scheduled by AMC. The vast majority of airlift sustainment will move on channel missions of which there are two types: requirements and frequency. Requirements channels fly on a recurring basis with schedules determined by the amount of traffic generated and considering efficient use of aircraft while frequency channels offer geographic combatant commanders (GCCs) a regular and predictable cargo and passenger schedule. Both types of channel users reimburse Transportation Working Capital Fund (TWCF) based on weight/cube of cargo. In many cases, channel missions operate as part of an integrated or linked set of movements from point of origin to point of need to consistently deliver requested logistics support when and where the customer requires and meet TDD goals and standards. These TDD goals and standards are key to successful warfighter support. USTRANSCOM, in collaboration with supported CCDRs, establish TDD parameters that may drive channel performance.

JP 4-01, Joint Doctrine for the Defense Transportation System (DTS), provides further details on channel airlift.

(3) **Special assignment airlift missions (SAAMs) are airlift missions that require special consideration due to the number of passengers involved,** weight or size of cargo, urgency of movement, sensitivity, or other valid factors that preclude the use of channel airlift. SAAMs support DOD users as well as other government agencies such as the United States Secret Service, Federal Bureau of Investigation, and Drug Enforcement Agency.

(4) **Contingency missions operate in direct support of an operation order (OPORD), disaster, or emergency.** These movement requirements will be identified in a TPFDD listing within JOPES.

A "Cornet mission" is a contingency mission in which a tanker escorts fighter aircraft as they deploy between bases. The tanker provides air refueling support, eliminating the need for the fighters to make numerous fuel stopovers. Tankers may also aid in weather avoidance, oceanic navigation, communication, and command and control of the mission.

(5) **Chairman of the Joint Chiefs of Staff (CJCS) exercise missions** operate in support of CJCS-directed or sponsored exercises. These movement requirements are also identified in a TPFDD.

(6) **AR missions** provide in-flight refueling to users; for example, foreign military sales, aircraft transfers, and unit moves.

(7) **Training missions are** flown for crew currency and proficiency for airlift and AR. Joint airborne and air transportability training (JA/ATT) missions are part of a Joint Chiefs of Staff (JCS)-directed, AMC-, or theater Air Force component command-managed program that provides basic airborne and combat airlift continuation and proficiency training conducted in support of DOD agencies. These missions include airdrop, air assault, aircraft load training, AR, and Service school support.

(8) **Intratheater common-user airlift missions** are flown on theater airlift aircraft under the operational control (OPCON) of the GCC to support common-user theater movement requirements.

(9) **Service organic air mobility missions are** flown by assets organic to a particular Service to meet their own requirements.. Examples of Service organic air mobility include Navy airlift aircraft conducting resupply missions from aerial ports of debarkation (APODs) to forward logistics sites and delivery to ships; Army aviation aircraft moving troops and supplies on the battlefield; and Marine Corps tankers refueling USMC aircraft.

7. National Air Mobility System

a. The NAMS is a broad and comprehensive system that provides the President, SecDef, and CCDRs with rapid global mobility. In recognition of the long-term strategic priorities of the President and SecDef and functions assigned under the US Code (USC), the DOD has organized NAMS elements under its control as intertheater (strategic), intratheater (theater), and organic forces by drawing upon specialized contributions of its civil and military components. Together, these functions, forces, and components provide the President and SecDef and CCDRs with the ability to conduct air mobility operations in support of US national interests.

b. Because air mobility forces are vital both to the global effectiveness of the JDDE and the operational success of a supported commander's campaign, joint force commanders (JFCs) emphasize integration of air mobility forces and unity of effort to meet validated demands or requirements. Commanders can only integrate these forces when each subordinate component commander and supporting combatant commander clearly identifies air mobility forces available for tasking. These identified forces may be assigned or attached to a joint force, be made available for tasking by other combatant commanders or Service component commanders, or be accessible through a supported-supporting relationship. Regardless of their source, proper use of these air mobility forces is the responsibility of the supported CCDR, the commander, Air Force forces (COMAFFOR), or CDRUSTRANSCOM. Both combatant and component commanders must integrate the air mobility flow within and between theaters to produce synergistic results. To effectively employ air mobility assets, commanders, planners, and all users of air mobility forces must understand JDDE, DTS, and NAMS.

The DTS is discussed in detail in JP 4-01, Joint Doctrine for the Defense Transportation System. The JDDE is described in JP 4-0, Joint Logistics.

c. **National Air Mobility System Functions.** The mobility air forces (MAF) are those forces assigned to combatant commands that provide rapid global mobility and conduct air mobility operations. The MAF's four core functions are airlift, AR, air mobility support, and AE.

(1) **Airlift** forces conduct operations through the air to transport personnel and materiel in support of strategic, operational, and tactical objectives and to deliver these personnel and materiel via airland or airdrop methods.

(2) **AR** forces conduct operations through the air to transport and transfer fuel to designated receivers in support of strategic, operational, and tactical objectives.

(3) **Air mobility support** forces comprise a GAMSS that provides responsive, worldwide support to airlift and AR operations. This system consists of a limited number of permanent en route support locations and deployable forces capable of augmenting the fixed en route locations or establishing new en route locations.

(4) **AE** forces conduct intertheater and intratheater patient evacuation supporting strategic, operational, and tactical objectives. Patients are airlifted on AMC assigned or commercial contracted aircraft.

AE is further illustrated in JP 4-02, Health Service Support.

d. **National Air Mobility System Forces.** NAMS consists of forces that perform intertheater, intratheater, and organic mobility operations. USTRANSCOM and the GCCs possess air mobility assets that are capable of performing both intertheater and intratheater operations. Each of the Services also possess some organic air mobility capability.

(1) Air mobility forces under combatant command (command authority) (COCOM) of either CDRUSTRANSCOM or the GCCs provide common-user assets to conduct operations between or within theaters.

(2) **The bulk of intertheater air mobility operations** are conducted in response to requests from the combatant commands and Services in accordance with (IAW) guidelines set by the President and SecDef. AMC, as the USAF component of USTRANSCOM, is capable of conducting and controlling intertheater air mobility operations across the globe. A unique aspect of these operations is their reliance on GAMSS and the worldwide command and control (C2) capabilities of the AMC 618th Tanker Airlift Control Center (618th TACC).

(a) The GAMSS is comprised of a limited number of permanent en route support locations plus mobile forces that deploy under the global reach laydown strategy. Permanent en route support locations are manned to handle day-to-day peacetime operations. Deployable GAMSS forces can be tailored to augment permanent locations during large-scale contingencies or to establish en route support at new locations where this support does not exist. GAMSS forces enable USTRANSCOM to establish a network of support locations (terminals) linked together by air lines of communications (ALOCs) to create an air bridge. GAMSS forces, by augmenting permanent terminals or establishing new ones, enable airlift aircraft to move personnel, equipment, and supplies to the desired location. Airlift, AR, and GAMSS forces are limited assets; therefore, their use requires detailed and coordinated planning in order to meet validated requirements.

(b) The 618th TACC is the C2 node for most intertheater operations. As the sole C2 node capable of directing and providing oversight for MAF anywhere around the globe, it provides essential services required by these forces to operate. Specifically, the 618th TACC is able to receive validated common-user requests from the USTRANSCOM Deployment and Distribution Operations Center (DDOC), task the appropriate unit, plan the mission, and provide continuous communications connectivity between intertheater forces, the common-user, and supporting GAMSS forces.

(3) **Intratheater air mobility forces**, normally under the COCOM of designated GCCs or the OPCON or tactical control (TACON) of designated subordinate

commanders, provide two types of support. General support is provided through a common-user airlift service to conduct operations within the theater or JOA in response to JFC's movement priorities. Direct support is normally provided with Service-organic transportation assets in a combat zone in accordance with the Service component commander's priorities. However, one Service component may be tasked to provide direct support to another Service component commander or subordinate commander. Intratheater air mobility operations are conducted in response to taskings from a CCDR or designated subordinate commander and primarily fill theater operational and tactical requirements. Effective and efficient movement and delivery of personnel, materiel, and fuel depend on in-transit visibility (ITV) of assets moving between theaters and extensive coordination between intertheater and intratheater forces. Each GCC has also established a joint deployment distribution center (JDDOC) which is patterned after the USTRANSCOM DDOC. The JDDOC is focused on the GCC's AOR and synchronizes and optimizes the intertheater and intratheater distribution aspects of deployment and multi-modal transfer of resources to integrate the proper mix of flow of forces, materiel, and other forms of sustainment in support of the GCC's missions. This crucial interaction is fostered by specific C2 arrangements and MAF apportionment both prior to and after a joint task force (JTF) has been established.

See JP 3-30, Command and Control for Joint Air Operations.

(a) Common-user intratheater movements are usually controlled through a theater-specific C2 node, and requirements are met by allocating theater-assigned forces. In US European Command (USEUCOM), US Central Command, US Southern Command, and US Pacific Command, this node is an air mobility division (AMD) within the Air Force air and space operations center (AOC). The AMD functions are similar to those of the 618th TACC. The AMD's theater focus is critical in teaming with the JDDOC or joint movement center (JMC) to coordinate and prioritize the phasing of intertheater and intratheater airlift requirements. The AMD has vast theater expertise and familiarity and is best able to assess theater requirements, allocate forces to meet those requirements, and when needed, seek USTRANSCOM augmentation. Intertheater missions are typically flown to major airfields (terminals) often referred to as "hubs." From these hubs, transported personnel or cargo is distributed by intratheater forces to other terminals, referred to as "spokes" within the JFC's operational area.

Chapter IV, "Airlift," provides more details on hub and spoke operations.

(b) Alternatively, when a JTF is established, intratheater movements may be controlled through a JTF-specific C2 node that interfaces with the JDDOC/JMC, AOC's AMD, and 618th TACC. The JTF-specific C2 node could be a joint, combined, or component AOC as specified by the commander, joint task force (CJTF). The director of mobility forces (DIRMOBFOR) must ensure the 618th TACC, AOC's AMD, and JTF-specified C2 node are working closely to meet all JDDOC/JMC validated intratheater requirements.

(c) When requirements exceed the capability of assigned or attached forces, JTF air mobility capabilities may be augmented. The supported CCDR may attach

additional theater-assigned forces to the CJTF. SecDef may attach USTRANSCOM forces to the supported CCDR, or JFC; USTRANSCOM may support the CCDR by making air mobility capabilities available as a supporting CCDR. Regardless of the source, intratheater, common-user air mobility forces assigned, attached, or made available to a subordinate joint force should be organized under a COMAFFOR as appropriate and directed by DIRMOBFOR through an AOC for optimum allocation, efficiency, and effectiveness. The COMAFFOR, joint force air component commander (JFACC) (if designated), and DIRMOBFOR must ensure intratheater air mobility forces are organized to properly interact with other intratheater and intertheater forces.

(4) **Organic air mobility forces** primarily provide specialized airlift and AR to Service users. Normally, these forces exist as elements of Service or functional component aviation arms and are assigned directly to their primary user organizations. These forces, if assigned to a combatant command, operate under the COCOM of that CCDR. While these forces are not under the control of the Air Force component commander (AFCC), their capabilities and resources should be identified, and operations visible to the 618th TACC, AMD and, for a GCC, the JDDOC or a JMC which may be established at a subordinate unified or JTF level to support the concept of operations (CONOPS), COMAFFOR, and DIRMOBFOR. In special circumstances under the latter case, these forces may be utilized to augment intratheater forces and accomplish tasks on behalf of their Service or made available for common-user tasking.

e. **National Air Mobility System Components.** The NAMS draws its forces and capabilities from both the civil and military air mobility components. Forces and capabilities apportioned to USTRANSCOM, GCCs, and the Services are determined by each organization's requirements for the specialized contributions of each NAMS component. Each component contributes unique capabilities, such as airlifting outsized or oversized cargo or AR other aircraft, or contributes greater efficiencies, such as passenger or small cargo express delivery, that collectively give the NAMS its overall ability to meet the Nation's needs.

(1) **The civil component of the NAMS is increasingly called upon to accomplish various air mobility operations.** It is therefore prudent for all DOD components of NAMS to maximize their ability to accommodate civil components within the system. The civil component is comprised of civilian airlift carriers who have signed up as members of the Civil Reserve Air Fleet (CRAF). The CRAF is a voluntary contractual program where civil carriers agree to augment military airlift during a crisis in exchange for peacetime defense business. During peacetime, regional contingencies, and major exercises, CRAF carriers voluntarily contract to fulfill personnel and cargo movement requirements. CRAF carriers are contracted daily to fly various categories of airlift, to include channel airlift, SAAMs, exercise support, contingency support, and charter airlift. This augmentation is crucial to all common-users since it allows USTRANSCOM to continue to meet routine scheduled and surge commitments simultaneously. If needed during a large-scale contingency, airframes pledged to the CRAF are activated in three progressive stages with each stage providing additional airlift capacity. These stages include, **Stage I** — Committed Expansion (Regional Crisis

or Small-Scale Contingency), **Stage II** — Defense Airlift Emergency (Major Theater War), and **Stage III** — National Emergency (Multiple Theater Wars and National Mobilization). **CDRUSTRANSCOM, with SecDef approval, is the activation authority for each stage of the CRAF.** The DOD tasks the minimum percentage of assets in each stage necessary to augment military airlift to meet crisis requirements. During activation, USTRANSCOM, in coordination with the civil carriers, exercises mission control over the civil aircraft. CRAF are generally not subject to the same host-nation diplomatic clearance procedures as DOD military aircraft. When necessary and authorized, foreign flag carriers may augment US air carriers.

(2) Commanders and their staffs should be aware that CRAF may be employed in a CBRN high and medium threat areas; however, they will not conduct operations into an airbase that is under attack or contaminated at the time of arrival. Some CRAF aircraft may also be damaged or destroyed if exposed to electromagnetic pulse (EMP) following a high altitude nuclear detonation. CRAF aircraft are not specifically hardened to EMP. As a precautionary measure, AMC will issue chemical defense ground ensembles and masks to CRAF carrier personnel for personal protection; however, commercial aircrews are neither trained nor equipped for flight operations in contaminated environments (commercial aircraft are not modified to connect communications and oxygen systems to the aircrew chemical defense ensemble). Upon warning of impending CBRN attack, every effort will be made to divert arriving CRAF aircraft and launch those on the ground. Civilian crewmembers on the ground during a CBRN attack will don ground ensembles and take shelter, as directed by local authorities. Contaminated CRAF aircraft will be removed from the airflow until clearance decontamination can be accomplished. Contaminated CRAF assets, however, will not be used, even if decontaminated to negligible levels. To continue the TPFDD flow, en route transload of cargo and passengers from CRAF to military aircraft or other transports for onward movement into threatened or contaminated airfields may be necessary. In accordance with policy, CRAF will not operate in a chemically/biologically contaminated environment. Specific guidance on CRAF operations in a CBRN environment is contained in MCM 0026-02, *Chemical Warfare (CW) Agent Exposure Planning Guidance* and the Air Mobility Command Counter-Chemical, Biological, Radiological, and Nuclear Concept of Operations (AMC C-CBRN CONOPS). Further information regarding joint operations under CBRN threat conditions is available in JP 3-11, *Operations in Chemical, Biological, Radiological, and Nuclear (CBRN) Environments*.

(3) **The Military Component of the NAMS.** This component is subdivided into active Air Force component, Air Force Reserve, and Air National Guard (ANG) portions.

(a) **Active Air Force component forces conduct routine and contingency missions in support of all common-user requirements.** Commanders have full access to these forces, and they are continuously available for immediate worldwide tasking. Most continental United States (CONUS)-based active duty air mobility forces are under COCOM of Commander, USTRANSCOM, and in turn, OPCON of CDRUSTRANSCOM's Air Force component, AMC. A small number of air

mobility forces in CONUS are under COCOM of Commander, US Joint Forces Command (USJFCOM). Similarly, theater-based active duty air mobility forces are under COCOM of their GCC (e.g., Commander, USEUCOM) and, in turn, under OPCON of their respective Air Force component (e.g., Commander, United States Air Forces, Europe).

(b) **Air Force Reserve Command (AFRC) and the ANG provide vital airlift, AR, and air mobility support capabilities to DTS.** Their forces possess the same capabilities as active duty forces, and in some cases, unique capabilities not found in the active force (e.g., LC-130). They complement active duty forces during peacetime through a volunteer system. During contingencies or other national emergencies, where requirements exceed the capability gained by volunteerism, these forces may be brought to active duty status either by federalizing guard forces or activating reserve forces. Approximately 50 percent of the air mobility capabilities are resident in AFRC and ANG. AFRC and ANG personnel are experienced operators and train to the same standards as their active duty counterparts.

Reserve component mobilization is addressed in JP 4-05, Joint Mobilization Planning.

f. Air Mobility Operations Considerations

(1) **Air mobility is a valuable force multiplier and should be employed with great care.** Its flexibility and vulnerability make it a responsive, but potentially costly, asset to use. The flexibility of the NAMS may, however, be constrained by its logistic support requirements and its dependence on ground equipment for some operations (which may not be available in desired locations or configurations). Properly organized, trained, and equipped air mobility forces can usually be shifted rapidly between missions and terminals. For example, planes and crews dispersed on sustainment missions throughout an AOR can be concentrated for a large formation employment mission. Modern aircraft offer increased mission flexibility because they can be quickly reconfigured for a variety of loads (palletized and unpalletized cargo, rolling stock, passengers, AE, and airdrop loads) or different types of in-flight refueling missions.

(a) **Operating the air mobility force at its optimal capacity each day should not undermine its timely reaction to unforeseen emergencies or the shifting priorities of an operation or campaign.** Attempts to bank air mobility forces for later missions are usually ill advised because holding them in reserve entails the certain loss of irrecoverable daily transportation productivity.

(b) **Air mobility aircraft are vulnerable to air and surface attacks.** Similarly, GAMSS units and command elements are organized to provide only for their local security. These vulnerabilities usually mean that optimal air mobility operations are most effective in a low-threat environment. Ideally, friendly air defense forces should protect large-scale or high frequency operations. Air mobility forces can operate in higher threat environments by using aircraft equipped with defensive systems, by using other assets to protect them, or by accepting a possible combination of operational penalties, higher loss rates, and reduced efficiency.

Further information regarding local security is available in JP 3-10, Joint Security Operations In Theater.

(c) When CBRN contamination affects airfield operations, an important contamination control measure available to air mobility planners is use of the exchange zone (EZ) concept. An EZ is a transload base, located beyond the CBRN-threat area, for the transfer of cargo and passengers between uncontaminated (clean) aircraft and previously contaminated (dirty) aircraft. From the EZ, the dirty aircraft shuttle to and from the contaminated APOD to continue TPFDD deliveries. EZ minimizes the number of air mobility aircraft exposed to contaminants and enables continued use of CRAF aircraft when APODs have been contaminated. Further information regarding EZ is found in AMC C-CBRN CONOPS, Section VII.

(d) Split mission-oriented protective posture (MOPP) is a contamination avoidance measure. Air mobility planners use split MOPP to divide an APOD into clean and dirty sectors, allowing a MOPP reduction in the uncontaminated sectors. If airlift operations must continue into a contaminated airfield, look for clean sections of the runway and/or ramp (upwind of the contaminated sectors) for the conduct of on/offload activities. The contingency response element (CRE) officer in charge at the contaminated airfield should direct the aircrew to clean sectors during ground operations.

(e) CBRN decontamination helps sustain military operations in CBRN environments by preventing or minimizing mission performance degradation, casualties, or loss of resources. Further information regarding split MOPP and decontamination is available in AMC C-CBRN CONOPS, and JP 3-11, *Operations in Chemical, Biological, Radiological, and Nuclear (CBRN) Environments*, and JP 3-41, *Chemical, Biological, Radiological, Nuclear, and High-Yield Explosives Consequence Management*.

(2) The AMC Phoenix Raven (PR) program is designed to ensure adequate protection for AMC aircraft transiting airfields where security is unknown or deemed inadequate to counter local threats. PR teams will deter, detect, and counter threats to AMC personnel and aircraft by performing close-in aircraft security; advising aircrews on force protection measures, accomplishing airfield assessments to document existing security measures and vulnerabilities and assist aircrew members in the performance of their duties when not performing PR duties. PR teams should be considered for all AMC missions that transit high-risk areas. It should be noted that these are limited resources. Therefore, a fly-away security team may be an alternative option.

(3) Limited air mobility forces may not be able to fill all demands placed on them. The scarcity of air mobility assets is a consequence of both their high cost (particularly of aircraft) and of limitations on the dimensions and weight of cargo that individual aircraft or ground support units can handle. Effective and well-coordinated allocation of these assets requires careful prioritization, especially in the face of changing mission requirements. This becomes crucial when distances are long or in the absence of a well-developed surface infrastructure. When time is critical, airlift may be the only choice to ensure the success of high-priority missions. The central problem of theater

planning is maximizing air mobility operations for immediate requirements, while also maximizing their contribution to the long-term requirements of the overall operation or campaign. Planners and operators should weigh the immediate needs of the user against the overall requirements and priorities of the JFC. **As a general guideline, airlift forces should not be tasked for movements when surface assets meet shipment requirements.**

(4) The operational and logistic characteristics of air mobility forces require the commanders to:

(a) Establish priorities for the air mobility effort that reflect national priorities and the CONOPS and intent of the commanders they support.

(b) Monitor and assess air mobility capacity, usually expressed in tons or sorties, on a continual basis.

(c) Specifically task, properly support, and control air mobility forces to achieve desired objectives.

(d) Require air mobility forces to plan their specific missions and transmit required statistical data through the logistics and operational systems.

g. **Force Visibility.** Force visibility shows the current and accurate status of forces at the strategic and operational level; their current mission; future missions; location; mission priority and readiness status. Force visibility provides information on the location, operational tempo, assets and sustainment requirements of a force as part of an overall capability for a CCDR. Force visibility integrates operations and logistics information and facilitates global force management, and enhances the capability of the entire joint planning and execution community (JPEC) to adapt rapidly to unforeseen events, to respond and ensure capability delivery. Force visibility enhances situational awareness and is required to support force sourcing, allocation, assignment of forces; force position; sustainment forecasting and delivery; and forecasting for future force requirements. It is the responsibility of the JPEC.

(1) **Asset Visibility (AV).** Asset visibility is a subcomponent of force visibility. AV provides the capability to determine the identity, location and status of equipment, and supplies by class of supply, nomenclature, and unit. It includes the ability to determine the status of personnel and patients. It provides visibility over equipment maintenance and retrograde actions. It also includes the capability to act upon that information to improve the overall performance of the DOD logistic practices supporting operations. AV is the foundation upon which DOD-wide AV is based, requiring horizontal integration of supply and transportation activities and one-time data capture. AV includes in-process, in-storage, and in-transit visibility. The function of performing AV is a shared responsibility among deploying forces, supporting commands and agencies, USTRANSCOM, and the supported CCDR. Defense Logistics Agency, as Executive Agent for Integrated Data Environment AV and USTRANSCOM with Global

Transportation Network (GTN), work collaboratively to ensure supply and in-transit data is shared and fused resulting in a complete seamless picture for end-users.

(2) **In-transit visibility.** ITV refers to the capability to track the identity, status, and location of DOD units, and non-unit cargo (excluding bulk petroleum, oils, and lubricants), and passengers; medical patients; and personal property from origin to consignee or destination across the range of military operations as part of AV.

For more information on force visibility, AV and ITV see JP 3-35, Deployment and Redeployment Operations.

h. Planning Considerations. Common users directly benefit from understanding the air mobility infrastructure, and becoming familiar with the airlift mission funding categories. Choosing the correct method of delivery, correctly determining whether their requirements can best be served through routine or surge operations, and understanding the funding implications associated with each choice influences the type of support received by the requesting user and also has an impact on the entire NAMS. Therefore users, when submitting their requests, must not only make their choices on an objective analysis of their exact needs, but must also remain flexible as their desires must be balanced against the CJCS priority system and other common-user needs.

(1) **Mission Funding Categories.** Use of air mobility aircraft is funded either through the TWCF or operations and maintenance (O&M) funds. The TWCF program consists of a fee paid by the user to USTRANSCOM via AMC. O&M funding occurs out of the Service component budget with no charge levied directly against the user. The various types of NAMS missions are designed and scheduled according to their funding category.

(a) **Channel Airlift Missions.** Users of channel airlift missions use O&M funds to reimburse the TWCF based on weight/cube of cargo and per passenger from aerial port of embarkation (APOE) to APOD.

(b) **SAAM users** reimburse TWCF at a SAAM rate based on mission flying time, to include positioning (originating station to required APOE) and depositioning (APOD to originating station) legs.

(c) **Contingency missions.** Users reimburse the TWCF based on mission flying time, to include positioning and depositioning when directly supporting an OPORD, disaster, or emergency.

(d) **JCS exercise missions.** Users reimburse TWCF based on mission flying time to include positioning and depositioning.

(e) **AR missions.** Missions are executed with O&M funds, but the serviced unit pays for the fuel transferred.

(f) **Training missions** flown for currency and proficiency are paid from Service O&M funds.

(g) **JA/ATT missions** are paid by O&M funds that are specifically allocated for joint training.

(h) **Intratheater common-user airlift missions**, flown on USAF airlift aircraft are paid from USAF O&M funds

(i) **Service organic missions.** Missions flown by Service-assigned assets (including other Air Force major commands [MAJCOMs]) to meet their own requirements are paid from Service/MAJCOM O&M funding.

(2) **Air mobility infrastructure.** Each type of infrastructure has unique advantages and disadvantages that must be considered when planning air mobility operations.

(a) **ALOCs and Air Terminals.** Establishing ALOCs between air terminals is the key to **rapid global mobility**. ALOCs are air routings connecting a military force with a base of operations that maximize load and fuel efficiencies for airlift, AR, and receiver aircraft while providing a structure to the airflow. An effective ALOCs structure rests on the proper mix of stage and air bridge operations. “Lily pad” operations are typified as missions that originate from a CONUS terminal, delay en route at an intermediate location for refueling, crew stage, and/or crew rest, and terminate at an outside the continental United States (OCONUS) terminal. Air bridge operations are defined as flights between theaters and AORs where the receiver aircraft’s range is augmented by in-flight refueling on designated AR tracks. These established routings, air terminals, and AR tracks allow commanders to effectively and efficiently move and position aircraft, cargo, or personnel. Terminals serving ALOCs include ground-based locations where personnel and materiel are either loaded or offloaded. AR tracks are a series of specified points (usually along a receiver’s route of flight) where refueling and receiver aircraft conduct in-flight refueling operations. This applies to tankers refueling cargo aircraft, refueling bombers, or assisting in the movement of fighters as part of a deployment.

(b) **Aerial Port.** An aerial port is an airfield that has been designated for the sustained air movement of personnel and materiel as well as an authorized port for entrance into or departure from the country where located. An airfield is an area prepared to accommodate transiting aircraft, (to include any buildings, installations, and equipment). Some air mobility aircraft are capable of operating on unimproved surfaces, but for large operations it is more effective to establish APODs and APOEs on prepared airfields. Prepared airfields are usually preexisting facilities, with hard-surface runways, extensive ground operations areas (for taxiing, parking, cargo handling, and other appropriate uses), and support infrastructure required for sustained operations. These attributes usually make prepared airfields the best available locations for air mobility main bases and the best available terminal for deployment, redeployment, and large-scale

employment operations. These attributes limit the number and location of these types of terminals. As a result, commanders should expect these terminals to be targeted by adversary forces.

(c) **LZ.** An LZ is any specified zone used for the landing of aircraft. LZs are usually less sophisticated than airfields, with facilities meeting only the minimum requirements of anticipated operations by specific aircraft. They may vary from isolated dirt strips with no off-runway aircraft-handling areas to hard surface airfields with limited support infrastructure. The main advantage of LZs is that in many cases it is possible to find or construct them near the operating area of supported forces. A close-by, but less sophisticated LZ may offer fewer delays in providing airland resupply to forward-deployed troops or assistance to humanitarian operations. Due to their isolation and possible proximity to threats, operating at these terminals requires significant planning.

(d) **DZ.** A DZ is a specific area upon which airborne troops, equipment, or supplies are airdropped. Although DZs are normally on relatively open, flat terrain, they may be situated on almost any site (including water) suited in size and shape for intact delivery and recovery of airdropped personnel and materiel. The main advantage of a DZ is the ability to deliver forces or materiel when an LZ or airfield cannot be constructed or used because of expense, time constraints, security risks, political sensitivities, or terrain. Similar to LZs, their isolation and possible proximity to threats makes security more difficult. Operations at DZs require significant planning because of limited on-ground support and likely threats to the aircraft and support personnel.

Detailed information on planning air mobility operations can be found in Chapter III, “Planning Air Mobility Operations.”

CHAPTER II

COMMAND AND CONTROL OF AIR MOBILITY OPERATIONS

“It is no great matter to change tactical plans in a hurry and to send troops off in new directions. But adjusting supply plans to the altered tactical scheme is far more difficult.”

General Walter Bedell Smith, US Army (1895-1961)

1. General

The value of air mobility forces lies in their ability to exploit and enhance the speed, range, flexibility, and versatility inherent in air power. Centralized control and decentralized execution of air mobility missions are the keys to effective and efficient air mobility operations. Centralized control allows commanders to focus on those priorities that lead to victory, while decentralized execution fosters initiative, situational responsiveness, and tactical flexibility. Although it is not necessary for a single global organization to centrally control all air mobility forces, all commanders should envision air mobility as a global system capable of simultaneously performing intertheater and intratheater missions. Separate but integrated command structures exercise centralized control over USTRANSCOM-assigned and theater-assigned and attached air mobility forces. This arrangement ensures a smooth interaction of the intertheater and intratheater forces. MAF operate as an integrated system of assets, and satisfy the supported CCDR’s mobility requirements through common procedures that bridge the command structures of theater and CONUS-based forces.

a. **Effective support of the supported CCDR’s mobility requirements demands theater and CONUS-based forces form a global partnership.** This partnership must operate as an integrated force with interoperable planning, tasking, scheduling, and C2 systems. A critical element of this partnership is linking centralized control agencies such as the CONUS-based forces’ USTRANSCOM DDOC and 618th TACC to the theaters’ JDDOCs and AOCs. These MAF partners exercise centralized control to ensure the JFC is supported with responsive, capable, and seamless air mobility. Air mobility commanders practice decentralized execution by delegating execution authority to subordinate commanders. Commanders at the wing, group, squadron, mission, and aircraft levels are vested with the appropriate authority necessary for an effective span of control while fostering initiative, situational responsiveness, and tactical flexibility.

b. The ultimate goal of air mobility C2 is to present a seamless system to commanders, customers, and air mobility operators across the range of military operations. This chapter provides the doctrinal foundation for command, control, and integration of air mobility forces.

c. **Theater air control system (TACS).** TACS is the USAF mechanism for commanding and controlling theater air power for the COMAFFOR. The AOC is the senior C2 element of TACS and includes personnel and equipment of the necessary disciplines to ensure effective control of air operations (e.g., communications, operations, intelligence).

Further details concerning the structure, functions, processes, and personnel within the AOC can be found in Air Force Tactics, Techniques, and Procedures (AFTTP) 3-3, AOC, Operational Employment- Air and Space Operations Center, and Air Force Instruction 13-1AOC series publications.

2. Command Relationships

Effective and efficient employment of air mobility forces requires a clear understanding of the associated command relationships and control processes affecting the application of these forces. Because they may operate simultaneously across three environments; intertheater, intratheater, and within a JTF's JOA, C2 of air mobility forces can be a particularly complex task.

3. Command and Control

There are three independent C2 structures that, when integrated, constitute the global air mobility C2 system. They are the **intertheater, intratheater, and JTF systems.**

a. **Intertheater Air Mobility Operations.** Intertheater air mobility operations are generally global in nature and service the CONUS-to-theater air mobility needs of the supported commander. **Air mobility assets, assigned to CDRUSTRANSCOM, execute the majority of intertheater airlift missions; C2 of these assets is normally exercised through 618th TACC.** The 618th TACC is the primary worldwide planning and execution agency for activities involving air mobility forces operating to fulfill CDRUSTRANSCOM-directed requirements. Exceptions to this are the C2 of CONUS operational support airlift (OSA) missions, which are directed by USTRANSCOM Joint Operational Support Airlift Center and special distinguished visitor missions flown and controlled by the 89th Airlift Wing (Presidential support). Intertheater operations may also include movements between CONUS and one or more theaters, or between two GCCs' theaters (e.g., C-17 airdrop of 173rd Airborne Brigade into Northern Iraq early in Operation IRAQI FREEDOM [OIF]). In most cases, assets assigned or attached to CDRUSTRANSCOM will perform these movements. However, in the case of the movement between two theaters, where theater-assigned air mobility assets are employed, the GCC who owns the forces retains OPCON. Specific command relationships for air mobility forces should be established in a manner that best supports the joint tasking and circumstances of the operation.

(1) **The Deployment Order (DEPORD).** A DEPORD is defined as a planning directive from SecDef, issued by the CJCS, that authorizes and directs the transfer of forces between combatant commands by reassignment or attachment. A deployment order normally specifies the authority that the gaining CDR will exercise over the transferred forces. Other orders created during the planning process, such as warning order, alert order, and planning order, may also specify or shape command relationships, but they do not transfer forces. Other CJCS orders created during the planning process, and approved by the SecDef (e.g., an execution order and fragmentary order) may direct



A typical joint air operations center.

subordinate force providing commands to transfer forces, and require the force providing command to publish a DEPOD to effect the directed, SecDef approved, transfer. The CCDR establishes command relationships within a combatant command. Service and component commanders help tailor command relationships by working through their chain of command to shape the details of orders being drafted by the Joint Staff for SecDef signature.

(2) **Functional Combatant Commands.** Functional combatant commands (such as USTRANSCOM and US Strategic Command) satisfy mission requirements across multiple AORs and are thus best centrally controlled. The functional CCDR will normally retain OPCON of assigned forces and, upon SecDef order, relinquish TACON or provide **support to** the supported CCDR. For air mobility forces performing primarily intertheater operations the preferred command relationship between global/functional and regional/geographic organizations is support. In some cases these forces, with SecDef approval, may be attached to the supported CCDR if that CCDR will fully employ them and has requisite C2 ability. As an example, tankers are deployed forward in support of a regional operation. If the tankers are totally committed to that operation and are unavailable to perform any other mission, the supported CCDR should have OPCON over these tankers. If, on the other hand, the tankers are only partially employed in that operation, and thus are available for other missions, CDRUSTRANSCOM should retain OPCON to optimize overall tanker utilization. When the supporting commander cannot fulfill the needs of the supported commander, JP 1, *Doctrine for the Armed Forces of the United States*, states the establishing authority will be notified by either the supported or the supporting commander. The establishing authority is responsible for determining a solution.

(3) **Transient Forces Outside the United States.** Transient forces, i.e., forces merely transiting an AOR, are not normally assigned or attached to the GCCs, however, they are subject to local force protection and administrative reporting requirements. CCDRs with geographic responsibilities shall exercise TACON (for force protection) over all DOD personnel (including their dependents), except for those for whom the chief of mission retains security responsibility. GCCs exercise of TACON (for force protection) applies to all DOD personnel assigned to, temporarily assigned to, transiting through, or training in the GCC's AOR. TACON (for force protection) enables GCCs to change, modify, prescribe, and enforce force protection measures for covered forces. Per JP 1, *Doctrine for the Armed Forces of the United States*, "Transient forces do not come under the chain of command of the area commander solely by their movement across operational area boundaries, except when the CCDR is exercising TACON for the purpose of force protection. Unless otherwise specified by the SecDef, and with the exception of the United States Northern Command AOR, a CCDR has TACON for exercise purposes whenever forces not assigned to that CCDR undertake exercises in that CCDR's AOR."

b. **Intratheater Air Mobility Operations.** Intratheater air mobility operations are defined by geographic boundaries. **Air mobility forces assigned or attached to that GCC normally conduct these operations.** Intratheater common-user air mobility assets are normally scheduled and controlled by the theater AOC or joint air operations center (JAOC) if established. The ability to identify and coordinate movement requirements (visible in JDDE-common systems) is critical to providing theater reachback support from the 618th TACC. When intratheater air mobility requirements exceed the capability of assigned or attached forces, other mobility forces can support intratheater airlift using a support relationship. The supported commander may also request augmentation from SecDef through the request for forces process.

For more information on request for forces/capabilities, see Enclosure R of CJCSM 3122.01A, Joint Operation Planning and Execution System Volume I: (Planning Policies and Procedures).

c. **JTF Air Mobility Operations.** During joint operations, it may be necessary to establish a JTF within a GCC's AOR. This allows the GCC to maintain a theater-wide focus and at the same time respond to a regional requirement within the theater. When this occurs, a JTF will be designated and forces made available for this operation. The COMAFFOR will normally be delegated OPCON of Air Force assets, and if designated the JFACC, will typically exercise TACON of air mobility forces made available to the JFACC. If the JTF requires additional air mobility forces beyond those already made available for tasking, additional augmentation may be requested.

(1) The COMAFFOR may appoint a DIRMOBFOR to function as coordinating authority for air mobility with all commands and agencies, both internal and external to the JTF, including the JAOC, the 618th TACC, and the JDDOC and/or the JMC.

(a) The DIRMOBFOR is normally a senior officer who is familiar with the

AOR or JOA and possesses an extensive background in air mobility operations. The DIRMOBFOR serves as the designated agent for all air mobility issues in the AOR or JOA, and for other duties as directed. At the discretion of the JFC, the DIRMOBFOR may be sourced from the theater's organizations or USTRANSCOM. The DIRMOBFOR should be collocated with the JAOC AMD to maximize effectiveness.

(b) The DIRMOBFOR will ensure the effective integration of intertheater and intratheater air mobility operations, and facilitate intratheater air mobility operations on behalf of the COMAFFOR. The DIRMOBFOR provides guidance to the AMD on air mobility matters, but such guidance must be responsive to the timing and tempo of operations managed by the JAOC director.

(2) **DIRMOBFOR also has distinct responsibilities in relation to JFC staffs.** Air mobility requirements do not originate in the AOC. They originate at the component level and are validated by either the theater JMC/DDOC (when established) or by the CCDR's operation directorate of a joint staff (J-3) in coordination with the logistics directorate of a joint staff (J-4). This may vary slightly in different theaters. Consequently, **an essential role for DIRMOBFOR is to serve as the principal interface between the AOC, the theater's J-4, and the JMC/JDDOC** to obtain appropriate prioritization of air mobility tasks while balancing requirements and air mobility capability.

(3) Specific duties of DIRMOBFOR include the following:

(a) Coordinate integration of intertheater air mobility capability provided by USTRANSCOM.

(b) In concert with the AOC director/commander, facilitate the tasking and effective and efficient employment of air mobility forces attached or assigned to the JFC.

(c) Coordinate with the AOC director/commander and AMD chief to integrate air mobility operations supporting the JFC into the air assessment, planning, and execution process, and deconflicted with other air operations.

(d) Coordinate with the 618th TACC and Air Force Transportation Component of USTRANSCOM (AFTRANS) to ensure the joint force air mobility support requirements are met.

(e) Assist in the integration and coordination of the multinational air mobility plan.

4. Command and Control Structures

The air mobility C2 system relies on consistent processes and the ability to rapidly expand to meet the specific needs of the task at hand. This facilitates rapid transition from peacetime to contingency or wartime operations.

a. **Routine Operations.** To assist in the employment of mobility forces, each of the GCCs has a USTRANSCOM transportation liaison officer. GCCs with assigned air mobility forces have COCOM over those forces and normally delegate OPCON over those forces through Service component commanders. The COMAFFOR executes the C2 of USAF air operations in the theater or AOR through the AOC. One of the AOC divisions, AMD, usually oversees intratheater air mobility operations. Figure II-1 illustrates these routine, day-to-day command relationships for controlling air mobility forces.

b. **Establishing a Joint Task Force.** When a contingency arises, the supported CDR may elect to establish a JTF and appoint the JFC. The JFC is authorized to exercise command authority over a joint force to accomplish an assigned mission and will determine appropriate military objectives and set priorities for the joint task force.

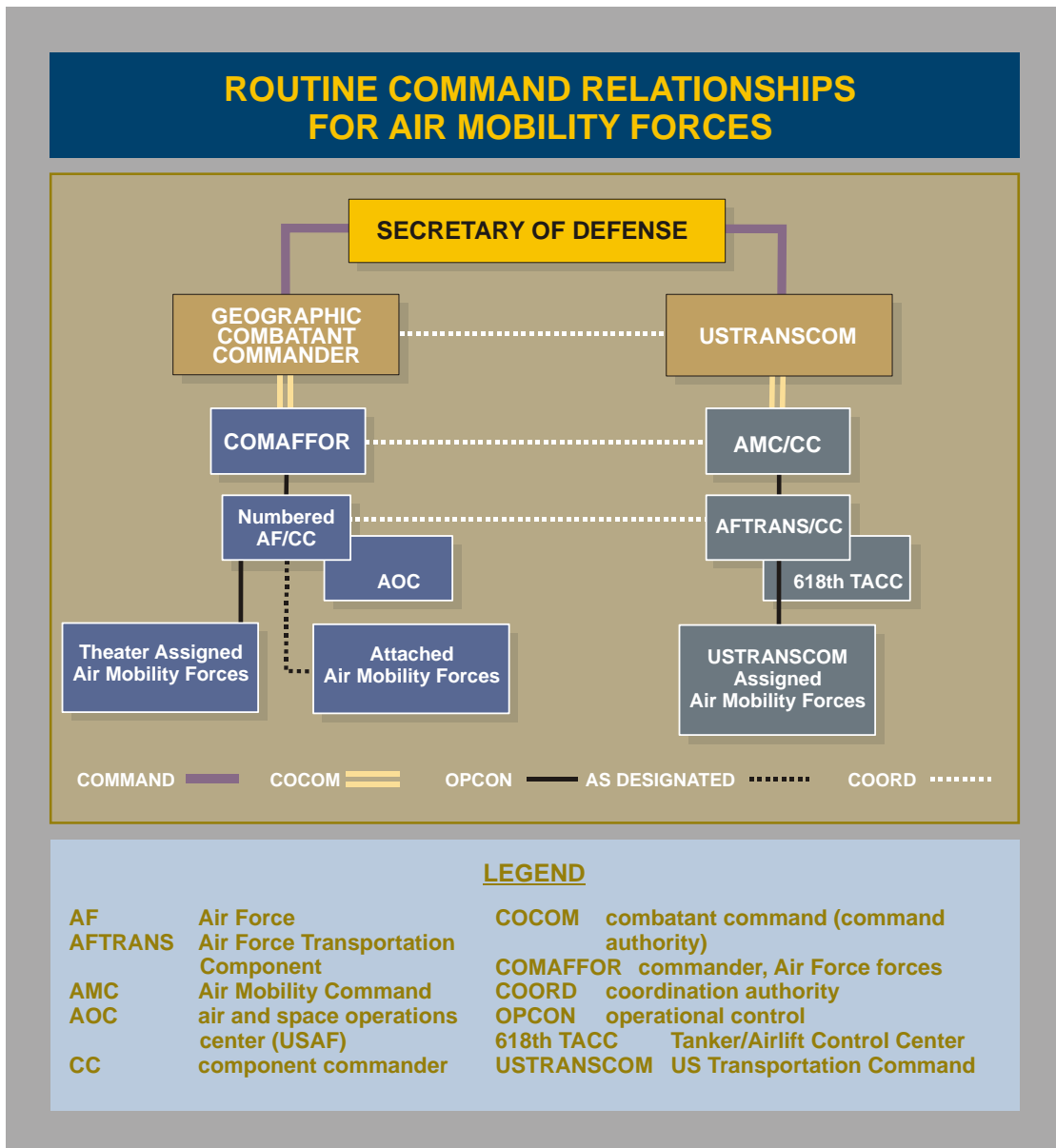


Figure II-1. Routine Command Relationships for Air Mobility Forces

The JFC has great latitude in determining command relationships. Service components provide unity of command and normally exercise OPCON over all assigned and attached forces. The JFC will normally assign JFACC responsibilities to the component commander having the preponderance of air assets and the capability to effectively plan, task, and control joint air operations. If a GCC requires OPCON and/or TACON of air mobility forces, the request must be processed through the Joint Staff for SecDef approval. Figure II-2 depicts these relationships.

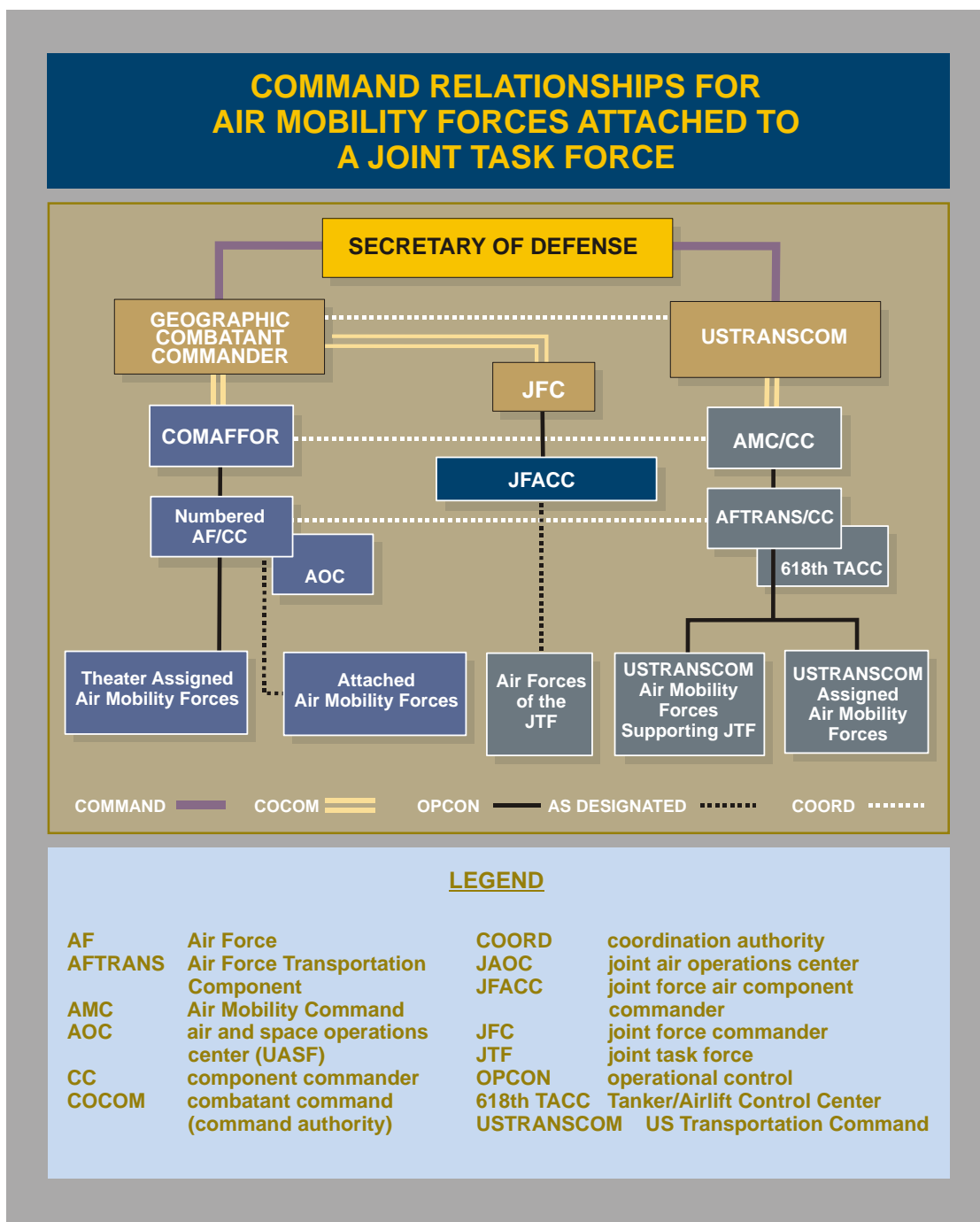


Figure II-2. Command Relationships for Air Mobility Forces Attached to a Joint Task Force

c. **Establishment of a JAOC and Associated Air Mobility Command Relationships.** The JFACC requires a C2 organization appropriately sized and tailored to support JTF or subordinate command-related air operations. The JAOC is the air planning and execution focal point for the JTF (or other subordinate command). Centralized planning, direction, and coordination of air mobility operations occur in the AMD.

(1) When a JTF is formed, command relationships for air mobility forces will be established by the JTF establishing authority. The command relationship established for these forces will normally be exercised through the JFACC/COMAFFOR. The JAOC director is charged with the effectiveness of joint air operations and focuses on planning, coordinating, allocating, tasking, executing, and assessing air operations in the operational area based on JFACC guidance and DIRMOBFOR coordination.

(2) The AMD is made up of an air mobility control team, airlift control team, AR control team, and aeromedical evacuation control team. The AMD will integrate and direct the execution of theater assigned or attached Service organic mobility forces operating in the AOR or JOA in support of JFC objectives. OPCON of USTRANSCOM-assigned air mobility forces supporting, but not attached to, the JTF or subordinate command will remain with AMC. This expansion of C2 systems requires the AMD to interface with the 618th TACC, other AMDs if required, and the JAOC combat operations and combat plans divisions to ensure air mobility missions are included in the air tasking order (ATO). Figure II-3 illustrates the arrangement of the JAOC and associated command relationships with respect to air mobility operations.

d. **Additional C2 Structures.** These consist of fixed and mobile units and facilities that provide the JAOC with the information and communications required to monitor the ongoing air operation and control Air Force aircraft in theater air operations. The broad organization and functions of these units and facilities are discussed here in their relationship to intratheater air mobility.

(1) **Control and Reporting Center (CRC).** The CRC is directly subordinate to the JAOC and is charged with broad air defense, surveillance, and control functions. **The CRC provides the means to flight-follow, direct, and coordinate the support and defense of theater air mobility aircraft** operating in the operational area.

(2) **Tactical Air Control Party (TACP).** TACPs consist of **personnel equipped and trained to assist US ground commanders** to plan and request tactical air support.

(3) **Emergency Operating Center (EOC).** As the C2 facility of wings, **EOCs provide control and communications facilities** to link wing commanders to the JAOC and enable them to command their forces. To facilitate joint operations, Army ground liaison officers or other component representatives may be assigned to an EOC.

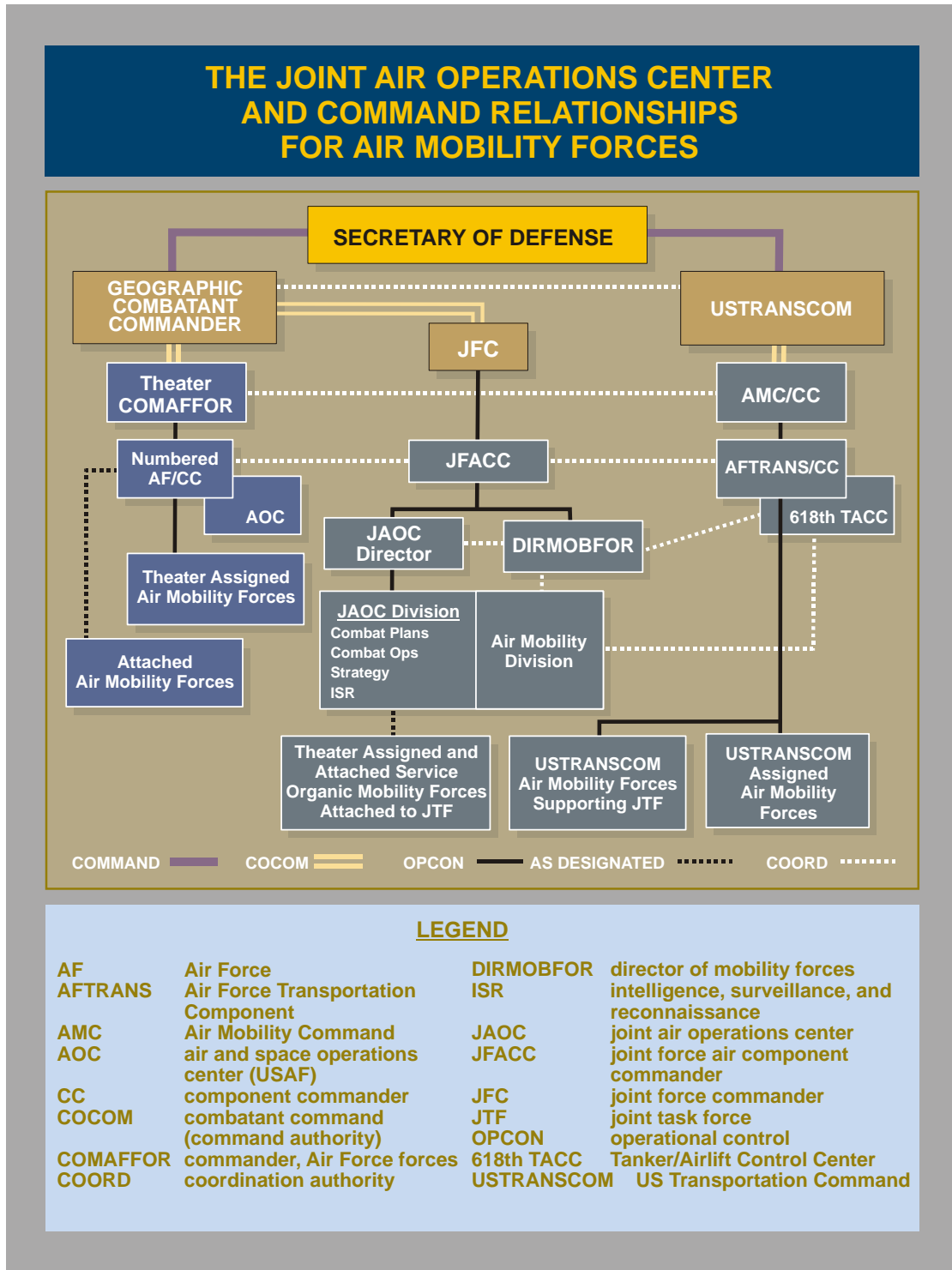


Figure II-3. The Joint Air Operations Center and Command Relationships for Air Mobility Forces

(4) **Contingency Response Group (CRG), CRE, Contingency Response Team (CRT), and Contingency Load Planning Teams (CLPTs).** CRGs include contingency support elements that deploy to initiate airbase opening operations. CRG capabilities include airfield assessment, C2, aerial port passenger and cargo processing,

limited aircraft servicing and maintenance, threat assessment, contracting/finance, limited force protection, limited fuels/logistics support, limited physical security/defense, and limited medical care. CREs are deployable GAMSS forces that support intertheater and intratheater air mobility operations; capabilities include C2, aerial port passenger and cargo processing, along with limited aircraft servicing maintenance. Smaller than CREs, CRTs perform similar functions on a smaller scale. CLPTs provide airlift expertise to train airlift users on how to prepare and marshal their initial airlift loads. CLPTs provide on-the-spot training and quality control to the deploying organization, and provide limited C2 management at locations where airflow is minimal or sparsely scheduled.

(5) **Special Tactics Team (STT).** Commander, United States Special Operations Command (USSOCOM) exercises COCOM over all CONUS-based special operations forces (SOF), including STTs. STTs are small, rapidly deployable, task-organized combat control teams (CCTs), pararescue jumper, and combat weather (special operations weather team) personnel. **They are uniquely organized, trained, and equipped to facilitate the air-ground interface during joint special operations and sensitive recovery missions.** These teams can **prepare the operational environment for air mobility operations** by conducting survey assessments, weather observations, and reconnaissance and surveillance of objective airfields and assault zones. STTs **establish terminal area airspace control** (attack, C2, and air traffic services) at remote assault (e.g., drop or landing) zones and austere or expeditionary airfields. As SOF, they cannot sustain these operations for long periods of time. STTs are a part of the theater SOF and are normally under OPCON of the joint force special operations component commander (JFSOCC) or the joint special operations task force. When supporting theater mobility operations, command authority over STTs should remain in the SOF chain of command. Command relationships and authority should be clearly stated and



Special tactics team.

understood by special operations and air component commanders. STTs are requested from the JFSOCC for tasking.

(6) **An air mobility liaison officer (AMLO)** is a rated air mobility officer specifically trained to advise the supported Army/Marine Corps unit commander and staff on the optimum and safe use of air mobility assets. They support units at the corps, division, separate regiment, and selected brigade echelons, but may be aligned with echelons above corps as required. Air liaison officers are organized and empowered to serve as single authoritative voices representing and advising the ground commanders they support.

(7) **AMC liaison officers (LNOs) are normally assigned to a Marine expeditionary force command element.** The AMC LNOs perform similar functions as the AMLOs, but are not designated as AMLOs.

(8) **Airborne Elements.** As airborne C2 nodes, the E-2C HAWKEYE and the E-3A Airborne Warning and Control System (AWACS) may perform limited C2 functions in support of theater air mobility operations.

(9) **The medical support team** provides the personnel and equipment required to administer medical care for injuries and illness, and to administer preventive medical care reducing the risk of a catastrophic or detrimental event that could impact on mission effectiveness. The team also recommends strategies to CRG, CRE, and CRT commanders for countermeasures against environmental and physiological stressors, in order to enhance mission effectiveness. While they support deployed CRG, CRE, and CRT operations, the medical support team will be under the same command relationship as the CRG, CRE, and CRT (i.e., if the CRG, CRE, and CRT is OPCON to the JTF, the medical support team should be also).

(10) **Battlefield Coordination Detachment (BCD).** **The airlift section of the BCDs will be located within the JAOC and will consist of intelligence and operations personnel organized into airlift, air defense, fire support, and airspace control elements.** Overall, the BCD monitors and interprets the land battle situation and provides the necessary interface for the exchange of current intelligence and operational data. The airlift section is collocated with the AMD and is responsible for monitoring movements on joint airlift operations supporting Army forces (ARFOR) and providing feedback to ARFOR operations and logistics staff officers. The airlift section is the single point of contact within the JAOC for coordinating and monitoring Army airlift requests, changes, and cancellations. The other sections coordinate fire and close air support for intratheater airlift missions, as appropriate.

(11) **Army Tactical Operations Centers (TOCs).** TOCs are found in Army units down to maneuver battalion **however, AMLOs will normally be located at the division level and above.** Intratheater airlift requests will be validated and prioritized by the Army service component commander.

(12) **Ground Liaison Officers (GLOs).** Army units may assign GLOs to the JAOC/AOC and theater airlift EOCs. In those positions, they monitor **and report on the current airlift situation to their parent units.** They also advise Air Force mission commanders and staffs on Army component air movement requirements, priorities, and other matters affecting the airlift situation. **GLOs assigned to the JAOC/AOC report through the BCD.** They are also the principal points of contact between the Air Force CRGs and Army arrival/departure airfield control groups (A/DACGs) for controlling Army theater airlift movements.

(13) **Army Arrival/Departure Airfield Control Group (A/DACG).** The A/DACG is a provisional organization designed to assist AMC and the deploying unit in receiving, processing and loading or unloading personnel and equipment. **A/DACGs are designed to coordinate and control the movement of personnel and materiel through air terminals.** The capabilities of the A/DACGs are tailored based on the mission and military units performing aerial port operations. Comprised mainly of personnel and resources from theater sustainment units along with elements of the moving unit, the A/DACG is task-organized to reflect the type of move and degree of support available at the air terminal. Service transportation support at air terminals, assist with the deployment, redeployment and sustainment of forces. Normally, an Army, Navy or Marine Corps A/DACG assists the mobility forces in processing, loading and off-loading deploying and arriving service component personnel and equipment. A/DACGs are deploying Service component's counterpart to a CRG/CRE. When units from more than one component will transit a terminal simultaneously, the JFC should direct one component to provide the A/DACG. This will normally be the component with the largest movement requirement, and augmented, as necessary, by the other components.

(14) **Army Movement Control Teams (MCTs).** MCTs are responsible for **coordinating the movement of personnel and materiel from air terminals to their designated destinations.** MCTs operate independently of the A/DACG and are responsible for controlling movement on an area basis.

(15) **Army Long-Range Surveillance Teams (LRSTs).** LRSTs can support **airlift by conducting reconnaissance and surveillance operations of named areas of interest around terminal areas.** LRSTs, which are organized from long-range surveillance detachments and companies, are organic to each Army division. Typically, one to six LRSTs support an airborne or air assault operation. If required, LRSTs can also mark DZs and LZs and direct fire support for airlift operations.

(16) **Army Drop Zone Support Teams (DZSTs).** In the absence of, or in conjunction with, an Air Force STT, **DZSTs provide Army units with limited organic capabilities to support airdrop operations.** DZSTs direct airdrop operations on DZs and consist of at least two personnel, including an airborne jumpmaster- or pathfinder-qualified leader. They can support airdrops (up to three aircraft) of personnel, equipment, and CDS bundles. Their responsibilities include:

- (a) Evaluating DZs;
- (b) Evaluating ground hazards; and

(c) Ensuring the suitability of the DZ and the ability to recover airdropped personnel and materiel. In the absence of an STT or DZST, AMLOs may be qualified to direct airdrop operations.

(17) **Army Tactical Aviation Control Teams (TACTs).** Composed of air traffic control or pathfinder-qualified personnel, **TACTs locate, identify, and establish DZs and LZs.** They install and operate navigational aids and communications around the terminal, control air traffic in that vicinity and, to a limited degree, gather and transmit weather information.

(18) **Joint Patient Movement Requirement Center.** A joint activity established to coordinate the joint patient movement requirements function for a joint task force operating within a unified command area of responsibility. It coordinates with the theater patient movement requirements center for intratheater patient movement and the Global Patient Movement Requirements Center for intertheater patient movement.

(19) **Joint Task Force – Port Opening (JTF-PO).** USTRANSCOM also provides a JTF-PO to rapidly open and operate ports of debarkation and initial distribution networks for joint distribution operations supporting humanitarian, disaster relief, and contingency operations. The JTF-PO (APOD), consists of an air element for airfield operations and a surface element for cargo transfer and movement control. The surface element operates a forward distribution node for clearance of cargo from the APOD. The JTF-PO (APOD) is designed to arrive early at an airfield to establish single port management and provide in-transit visibility from the beginning of an operation. The JTF-PO deploys under the authority of the CDRUSTRANSCOM, in direct support of the CCDR; it is designed to operate for 45-60 days and be relieved by follow-on forces.

(20) **Joint Deployment and Distribution Operations Center.** The integration of intertheater and intratheater movement control is the responsibility of the supported combatant command and USTRANSCOM. Subsequently, each GCC has a JDDOC. The JDDOC is a CCDR's movement control organization designed to synchronize and optimize national and theater multimodal resources for deployment, distribution, and sustainment. The JDDOC is normally placed under the control and direction of the combatant command J-4, but may also be placed under other command or staff organizations.

5. Command and Control of Airfields During Contingency Operations

a. During contingency operations, efficient and effective use of limited airfield capacity and resources is often critical to a successful military response. The task is complicated when airfields in the theater of operations are host to a variety of allied military, nongovernmental organizations, and commercial air activities.

USTRANSCOM, through AMC performs single port manager (SPM) functions necessary to support the strategic flow of the deploying forces' equipment and sustainment from the APOE and hand-off to the CCDR in the APOD. The SPM is responsible for providing strategic deployment status information to the CCDR and to manage workload of the APOD based on the CCDR's priorities and guidance.

b. To facilitate C2 at joint use airfields the JFC designates a senior airfield authority (SAA) responsible for airfield operations. The SAA ensures unity of effort among the various commands and other activities operating on the airfield and serves as the arbitrator between competing interests on the airfield. Depending on the types of air operations being conducted at a specific airfield, the SAA will normally be selected from one of the following commands; Army aviation battalion/brigade, Air Force tactical fighter squadron/wing, Marine aircraft squadron/group, USTRANSCOM's contingency response element/group, air mobility squadron, or AFSOC special tactics squadrons. The SAA is responsible for overall effectiveness of the airfield and coordination of all requirements for use of the airfield and its facilities. The SAA controls airfield access and coordinates for airfield security with the joint security coordinator for the area.

(1) In situations where US forces are not the overarching authority for airfield operations (e.g., the host nation maintains airfield control, operational civil airfield), the SAA maintains oversight for all US/coalition airfield operations and, is the primary negotiator with the respective airfield officials for any support required.

(2) If dual-hatted as the base commander, the SAA has control and direction over base defense activities within the base boundary through the C2 mechanism of the base defense operations center (BDOC) (See JP 3-10, *Joint Security Operations in Theater*). The base commander, through the BDOC, addresses threats with attached forces within the designated base boundary, coordinates with the designated area commander(s) for additional support or forces, and if required, requests joint fires within the base boundary. Within this context, clear lines of authority are required to ensure resources and personnel are protected from ground-based attacks and standoff attacks commensurate with the commander's integrated base defense plan.

CHAPTER III PLANNING AIR MOBILITY OPERATIONS

“In preparing for battle I have always found that plans are useless, but planning is indispensable.”

Dwight D. Eisenhower

1. Air Mobility Planning Considerations

a. Mobility aircraft can accomplish a variety of missions. Therefore, mission planning must include an intelligent application of sound tactical concepts learned from previous conflicts, operational evaluations, training exercises, tactics development programs, and threat analysis. Prior to specific tasking and detailed mission planning, a preliminary study must be done to develop mission profiles and determine the potential for mission success. Feasibility studies are usually done at the joint command level but may be delegated as low as wing level planners. Planners are responsible for providing commanders with accurate assessments during all phases of planning. Most contingency operations will involve joint forces and should integrate the user in mission planning. In addition, planners should include intelligence, C2, escort, security/defense, combat air patrol, suppression of enemy air defenses (SEAD), service LNOs, weather, maintenance, AE planner and AE patient movement item medical logistics specialist, cargo handlers and inspectors, and airspace controllers. The degree of integration will influence the outcome of the mission. Sharing critical information, especially intelligence information, between all players will help to clarify objectives, develop alternatives, and assess risk. When aircrew, the user, and planners are geographically separated, secure communication is imperative.

b. **Joint Airspace Control.** Air mobility planners should be involved in the creation of the airspace control plan. Air mobility aircraft typically require preferred altitudes and routing to avoid or mitigate threats. Congested airspace and potential fratricide are also major concerns. In addition, air mobility planning considers international, host nation (HN), and military airspace control plans and procedures.

Further information on airspace control at the operational level of war, see JP 3-52, Joint Airspace Control in the Combat Zone. Further information on terminal airfield air traffic control (ATC), see Field Manual (FM) 3-52.3, Marine Corps Reference Publication (MCRP) 3-25A, Navy Tactics, Techniques, and Procedures (NTTP) 3-56.3, and AFTTP(I) 3-2.23 Multi-Service Procedures for Joint Air Traffic Control.

c. **Air Corridors or Operating Areas.** Airlift operations often require secure air corridors or operating areas (e.g., DZ and assault zone run-in and AR tracks). These may be shared with other air missions. Regardless, the use of a corridor requires close coordination between the joint force airspace control authority, area air defense commander, JAOC, all other joint force component ground and aviation elements. Changing of the corridor system may be required depending on the threat lay down and enemy actions.

2. Marshalling

Marshalling includes the preparations required to plan, document, and load equipment and personnel aboard the aircraft. The marshalling plan provides the administrative and logistic procedures to accomplish these tasks. **The marshalling area is usually located near departure camps and airfields** to conserve resources and reduce the opportunity for observation. When the number of departure airfields is limited or when requirements dictate dispersion, loading may be accomplished on a phased schedule. **The Air Force component's portion of the marshalling operation is developed during air movement planning** and consists of instructions regulating aircraft movement and the parking plan. These procedures are stipulated in appendix 5 (Mobility and Transportation) to annex D (Logistics) of the OPORD.

a. Preparations

(1) **Planning.** **The joint force staff coordinates with administrative and logistic agencies** for maximum support during marshalling. This support includes **transportation, communications, and personnel support functions** (campsite construction, operation, and maintenance; messing; and religious, fitness, recreation, and other morale services) and permits the unit to concentrate on preparation for the movement. Support may also include local security personnel to supplement normal Air Force security at the departure airfield.

For details on air base ground defense, see JP 3-10, Joint Security Operations in Theater.

(2) **Logistics.** The unit logistics officer normally prepares the marshalling plan. The plan is an appendix to the service support annex of the OPORD or an annex to the administrative and logistics order of the airlifted force. It should contain procedures for cover and deception. **The marshalling plan includes procedures for moving units** from marshalling areas through the alert holding and call forward areas to the ready line. Finally, it includes methods for loading troops and equipment into individual aircraft.

(3) **Selection of Marshalling Areas and Departure Airfields.** **The selection of marshalling areas and departure airfields is based on the air movement plan** and influenced by several common factors. There is no order of priority among these factors, but any one of them could become the basis for final selection. To avoid concentration of forces, **multiple marshalling areas and departure airfields should be selected.** Excessive dispersion, however, makes C2 more difficult and may diminish the effectiveness of supporting activities. The factors affecting selection of marshalling areas and departure airfields are illustrated in Figure III-1.

(4) **Unit Preparation.** For security reasons, marshalling should be accomplished quickly. **To prepare for marshalling, deploying units are responsible for the following.**

- (a) Establish liaison with the DACG.

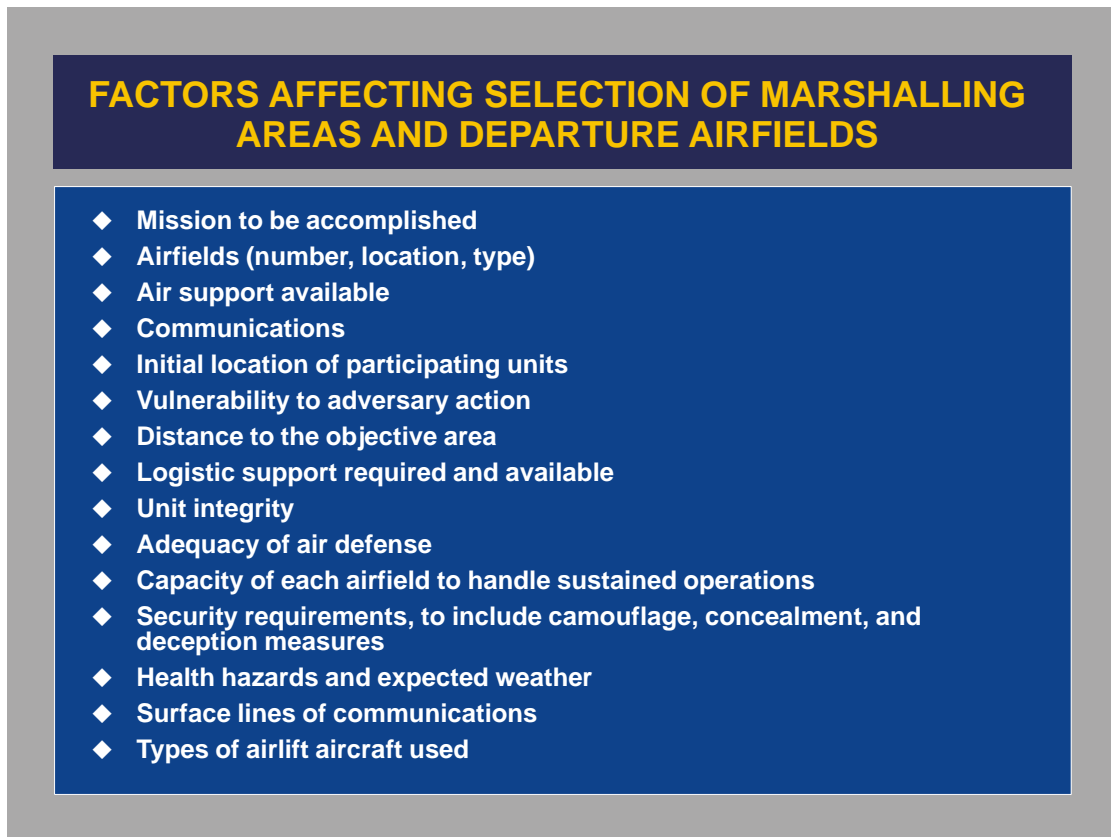


Figure III-1. Factors Affecting Selection of Marshalling Areas and Departure Airfields

- (b) Obtain equipment and supplies as early as possible.
- (c) Issue prepackaged supplies and equipment to the airborne forces to expedite loading operations.
- (d) Perform final preparation of vehicles and equipment.
- (e) Ensure adequate shoring and dunnage materials are readily available.
- (f) Receive parachutes and other airdrop items and prepare airdrop loads in coordination with the responsible airdrop support unit.
- (g) Prepare and certify aircraft load plans (appropriate Air Force officials verify and approve load plans), personnel, and equipment manifests (and annotate any hazardous materials by class), and submit them through the DACG (or designated CCDD agent if no DACG is present) to the supporting airlift elements. As a minimum, manifest information should be submitted electronically, either via disk or direct system interface, to facilitate movement processing and ITV reporting. En route messing is a deploying unit responsibility.

b. Responsibilities. Arrival and departure airfield operations are conducted by Air Force units and the deploying component units.



Contingency response group loading a C-17 at Hickam Air Force Base.

(1) **CRG, CRE, or CRT teams are responsible for marshalling the deploying unit and associated equipment for airlift.** The organization employed depends on the size of the unit being deployed and the number of aircraft involved.

(2) **The A/DACG is the deploying Service component's counterpart to the CRG, CRE, or CRT.** This organization is sized to support the unit being deployed.

c. Execution

(1) **The deploying unit assembles, prepares, and documents** its cargo and personnel for air movement. **Discrepancies are identified and corrected** prior to air movement. There are **four separate areas of activity** in departure airfield operations. Each activity takes place in a designated area and involves specific tasks. Figure III-2 shows the four separate areas of activity and outlines the major functions of each area.

(2) **Movement to Aircraft Loading Sites.** The deploying commander assigns priorities for deploying unit cargo, vehicles, and equipment to loading sites based on required loading and scheduled station times published in the air movement plan. The deploying unit's installation major command provides transportation to move personnel and chalk loads (by chalk number) to aircraft. Whenever possible, movements are made at night for operations security (OPSEC) purposes. Personnel in charge of aircraft chalk loads should receive mission briefings concerning the route to their respective aircraft. Personnel and equipment should arrive at onload airfields IAW prescribed times published in the air movement plan. The GAMSS units control airlift movement at the departure airfield. Routes to and from loading areas should be clearly marked. Strict control of air and ground traffic is maintained on and across runways and strips.

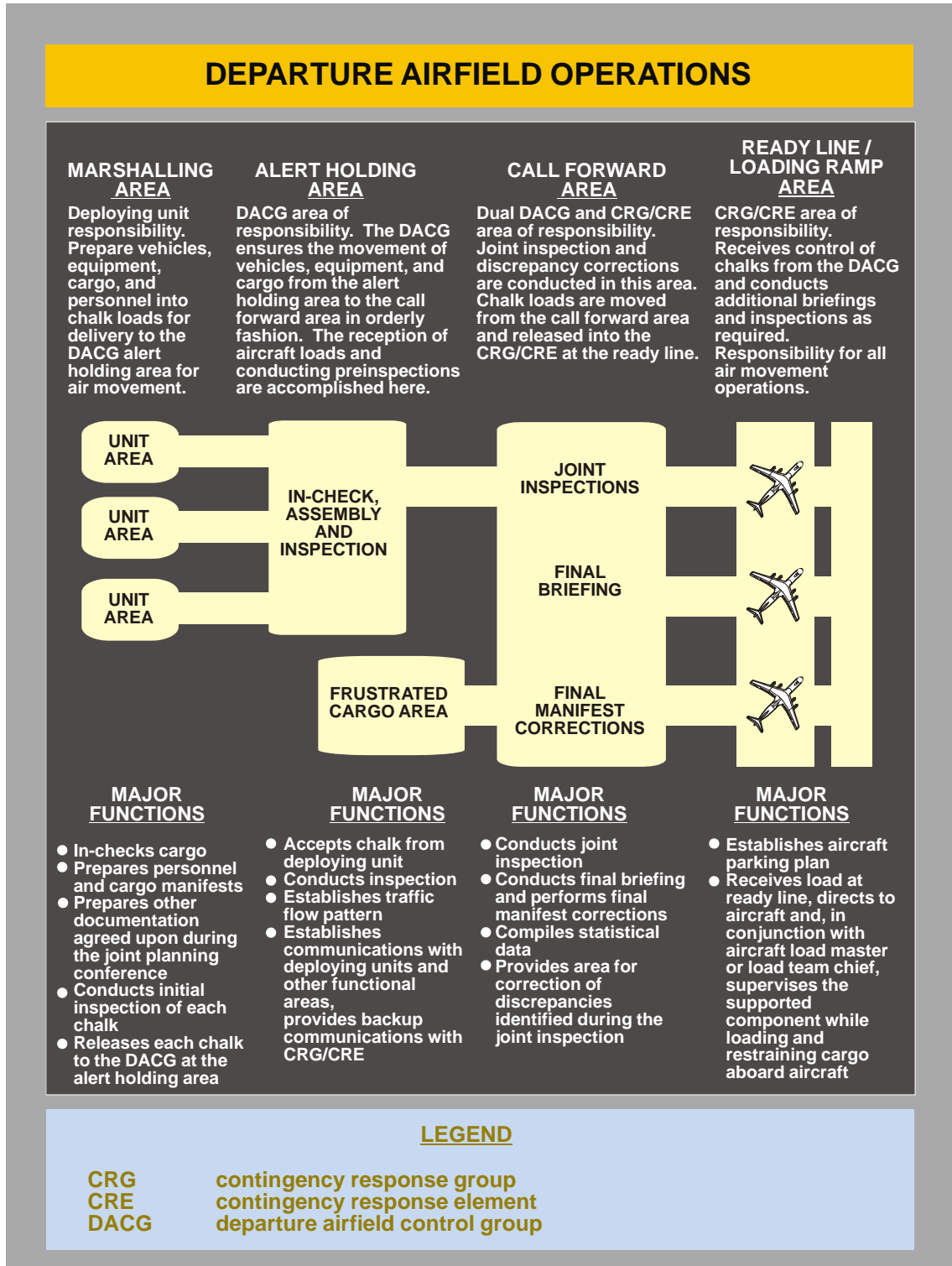


Figure III-2. Departure Airfield Operations

(3) **Preparation of Platform Loads.** If airdrop is part of the operation, platform loads are prepared during marshalling. When planning the preparation and marshalling of platform loads, the following factors should be anticipated:

- (a) Additional lead-time may be required;
- (b) Skilled rigging supervision is needed;
- (c) MHE required; and
- (d) Adequate facilities, to include a relatively clean and illuminated rigging area, should be provided if tactically feasible.

(4) **Cross-loading.** Whether administrative or combat-loaded, aircraft also may be cross-loaded. **Cross-loading distributes supplies and/or personnel among aircraft to ensure the entire supply of one item or unit is not lost by an abort or loss of one or a few aircraft.** Cross-loading does not alter the desirability of keeping ground force crews in the same aircraft as their vehicles, weapon systems, or other crew-served equipment.

(5) **Arrival Airfield Operations.** Although arrival operations are not part of the marshalling process, they are important in air movement. If not orderly, arrival operations could adversely affect the mission. Arrival operations take place in three main areas: the offloading ramp, the holding area, and unit area and begins the “reception” segment of the joint reception, staging, onward movement, and integration (JRSOI) phase of deployment operations. JRSOI is the essential process that transitions deploying forces, consisting of personnel, equipment, and materiel arriving in theater, into forces capable of meeting the CCDR’s operational requirements. Reception operations include all those functions required to receive and clear personnel, equipment, and materiel through the POD. This process may be modified or streamlined for combat offload operations. Figure III-3 shows a typical layout of arrival airfield operations.

For more information on the JRSOI phase of the deployment process, see JP 3-35, Deployment and Redeployment Operations.

(6) **Unit commanders or team chiefs coordinate** with the A/DACG for use of available facilities and areas at departure airfields for a command post, communications centers, briefing areas, and equipment and supply handling points.

3. Intelligence

Intelligence is fundamental to effective planning, security, and deception. The intelligence planning effort must be focused to ensure it is responsive to the commander’s requirements and the requirements of the subordinate units. To ensure the intelligence effort addresses the commander’s needs and is fully synchronized with operations, it is imperative the appropriate intelligence staff elements be fully involved in the operations planning process from the outset. All available information must be analyzed concerning the operational environment pertaining to potential threats, including the full range of possible adversary courses of action (COAs). Significant information shortfalls must be identified as early as possible, converted into intelligence requirements, and submitted for

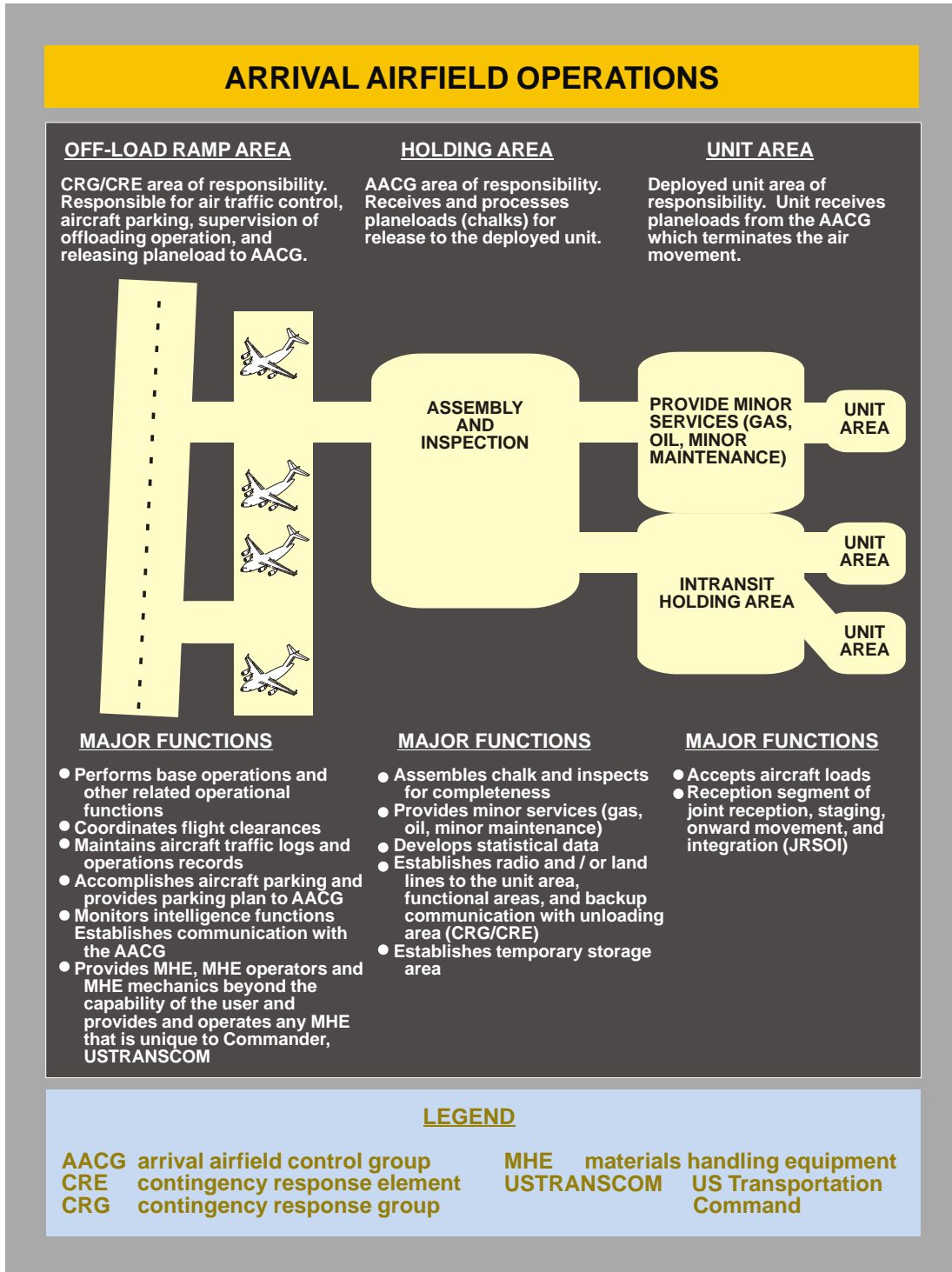


Figure III-3. Arrival Airfield Operations

collection or production as requests for information. A joint intelligence preparation of the operational environment effort should be initiated as early as possible to identify and assess possible adversary COAs that could threaten friendly air mobility operations. Effective intelligence planning provides commanders at all levels with the intelligence they need to apply their available forces wisely, efficiently, and effectively.

See JP 2-0, Joint Intelligence, for more information regarding the criticality of intelligence support.

4. Other Considerations

a. **Vulnerabilities.** Air mobility forces are vulnerable to attack during all phases of theater and international flight operations, at home station, APOEs, en route locations, APODs, and forward airfields. Mission planning must include a thorough analysis of vulnerabilities requirements throughout all phases of flight and ground operations. Military and CRAF flights into civilian airfields and off-base billeting of aircrews create unique vulnerabilities that must be addressed with local policy authorities. Force protection specialists will work to ensure that all air mobility vulnerabilities are considered.

See JP 3-10, Joint Security Operations in Theater, for additional information on force protection in a theater of operations.

b. **Threats. Air mobility planning must begin with threat analysis and threat avoidance.** Normally, mobility assets operate in a permissive to low-threat environment. If required to operate in a medium to high threat environment, significant integration must occur with joint/coalition air and ground combat forces to mitigate the threat and increase survivability. The unique aspects of airborne, ground, electronic warfare (EW), CBRN, and pandemic disease threats must be addressed.

(1) **Airborne Threats.** Air mobility aircraft are vulnerable to surface to surface, surface-to-air, and air-to-air threats. Large fixed-wing air mobility aircraft have significant radar signatures, lack maneuverability, fly slower speeds, and many have limited or no onboard defensive systems including a lack of protection against EMP, and are vulnerable to CBRN contamination. Small fixed wing airlift aircraft and helicopters have smaller radar signatures but still have limited or no onboard defensive systems and



Mobility air force aircraft dispensing flares.

are vulnerable to CBRN contamination. Air mobility's best tactic is threat avoidance when practical.

(2) **Ground Threats.** Air mobility aircraft, aircrews, and support personnel are particularly vulnerable during ground activities. On/offload operations offer large, stationary targets for adversary direct-fire and stand-off weapons. Commanders and their staffs should consider the employment of expedited ground operations (e.g., engine-running offload and combat offload/onload) to reduce vulnerability to ground threats. Perimeter and other security measures should be planned and coordinated with those responsible for the area outside the base/airfield compound (e.g., joint security area coordinator).

(3) **EW Threats.** Air mobility operations are increasingly threatened by emerging EW capabilities. Aircrews must plan to use alternative procedures to overcome communications and global positioning system (GPS) jamming capabilities. Adversaries may attempt to employ EW through cyberspace to disrupt airfield operations at APODs.

(4) **CBRN Threat.** Adversary use of CBRN weapons against air mobility forces represents a significant threat. Although aircrews are trained and equipped to operate in a contaminated environment, the contamination of airlift aircraft may limit options for the deployment, sustainment, and redeployment of forces. The JFC must take every precaution available to prevent the contamination of air mobility aircraft and develop plans to decontaminate aircraft which may become compromised.

(5) **Emergence of Pandemic Disease.** Regional endemic diseases, such as avian flu and severe acute respiratory syndrome commonly referred to as SARS, are characterized by high human-to-human transmissibility and rapid onset of severe morbidity. When an endemic disease becomes pandemic, it threatens military readiness and imposes significant constraints on global air mobility operations. Although the Department of State (DOS) has a shelter-in-place policy for infected overseas areas, civil disturbance or political instability may necessitate a noncombatant evacuation operation (NEO) of noninfected individuals from areas abroad experiencing outbreaks. DOD will support the NEO with USTRANSCOM assets when directed by SecDef to do so. DOD movement of contagious patients requires approval of the GCCs, CDRUSTRANSCOM, and SecDef in consultation with medical authorities. To prevent the spread of disease, the JFC will institute passenger screening measures. Patients with known or suspected highly contagious diseases should receive treatment in place.

c. **Threat Avoidance and Mitigation**

(1) Mobility aircraft avoid the threat by over-flight, diverting from or delaying landing at contaminated APODs or at APODs under CBRN attack, routing, operating at night or in adverse weather, or using exchange zone (EZ) operations to segregate clean aircraft from chemical, biological, or radiological (CBR) contaminated aircraft. Utilizing the most up to date intelligence from the JFC and taking into account counterintelligence threats to APODs to identify potential threat locations is key to mission planning.

(2) Mobility aircraft mitigate the threat by route and altitude selection, operating at night or in adverse weather, and reducing ground time. Other mitigating techniques include defensive measures including escort; intelligence, surveillance, and reconnaissance; SEAD; and deconfliction with friendly airbase defense. Some mobility aircraft employ self defense systems such as missile warning system receivers, radar warning receiver, and, large aircraft infrared counter measures. For CBRN threats it may not be possible to avoid aircraft contamination, especially if the mission is critical. Some measures to mitigate CBRN threats include limiting the retrograde of contaminated cargo to “mission critical” cargo, and identification of a theater decontamination strategy for air mobility aircraft. **Complete decontamination is currently not possible, therefore, once an aircraft is contaminated, its utility will be restricted.**

(3) **OPSEC.** Conduct mission planning to heighten uncertainty by potential threat elements concerning the location, timing and avenues of approach. This includes employing OPSEC procedures to deny knowledge of schedules, routes, departure points and arrival location and times. Planners should also consider employing deception when conducting operations in high or unknown threat environments to confuse potential adversaries about the route, timing and location of air mobility operations.

d. **Threat Countermeasures.** Active and passive countermeasures to threats against airlift aircraft and airfields may be required.

(1) **Active protective measures** include fighter escort, ground support forces employing measures that deny potential threats from interdicting air routes, antiaircraft defenses, ballistic missile defenses and tactical lasers for airfield defense, and SEAD. Self-defense systems may include use of devices such as onboard warning receivers, flare dispensers, chaff dispensers, and CBR detection devices.

(2) **Passive measures** include such things as air base defense, route and altitude selection, reduced ground times, dispersed aircraft basing, self-defense systems including use of devices such as onboard warning receivers, flare dispensers, chaff dispensers, CBR detection devices, and operating at night or in adverse weather. CBRN defense principles include:

(a) Contamination avoidance includes transloading cargo from clean to contaminated aircraft for onward transport into contaminated airfields, designating alternate APODs, and using airdrop or overland transportation into contaminated airfields; this measure is the most cost effective while preserving air mobility capabilities;

(b) Protection of personnel and equipment (use of individual and collective protection, sheltering/covering assets, use of detection devices, etc.); and

(c) Decontamination includes decontaminating air mobility assets and preventing the spread of contaminants; this measure consumes the most time and is manpower intensive.

5. Communications Systems

a. **Communication planning** integrates the communications capabilities of joint force components. These plans should include en route communications procedures and automated information systems to support movement reporting; call words or call signs, frequencies, communications equipment, and supplies to be delivered; the sequence of their delivery; and code words for significant events.

b. The staff can recommend which component should have responsibility for the following functions:

(1) **Communications-electronics during air movement/aerial refueling.**

(2) Develop and maintain a **communications net for early operations** in the objective area.

(3) Develop and maintain a **communications net between the departure airfield and LZ** (or arrival airfield) for airland operations.

(4) Establish **transition** criteria to determine when to shift from assault net operations to normal communications nets.

(5) **Secure rapid and reliable communications from the objective area** through the communications and computer systems of geographic combatant commands and other headquarters immediately upon the arrival of airlift personnel; **communications from the joint force headquarters to and between component commands**; and from DOS or other agencies in the objective area.

(6) Formulation, publication, and distribution of the **communications-electronics operating instructions** and **joint communications-electronics operating instructions**.

(7) **Relay-type communications** for disseminating intelligence or mission changes to the airborne force commanders while they are en route to the objective area.

(8) **Jamming operations** and coordination to prevent interference with friendly C2.

c. Various computer and communications systems along with their associated databases and peripheral equipment are included as elements of GAMSS and are used when planning and executing air mobility operations. Use of these systems for air mobility operations is highly encouraged to facilitate the flow of critical information between operational components. These include but are not limited to:

(1) **Joint Operation Planning and Execution System (JOPES)**. A system of joint policies, procedures, and reporting structures, supported by communications and computer systems, that is used by the joint planning and execution community to

monitor, plan, and execute mobilization, deployment, employment, sustainment, redeployment, and demobilization activities associated with joint operations.

(2) **Global Air Transportation Execution System (GATES).** GATES is the AMC's aerial port operations and management information system designed to support automated cargo and passenger processing, reporting of in transit visibility data to the GTN, and billing to AMC's financial management directorate.

(3) **Global Command and Control System.** Highly mobile, deployable C2 system supporting forces for joint and multinational operations across the range of military operations, any time and anywhere in the world with compatible, interoperable, and integrated command, control, communications, computers, and intelligence systems.

(4) **Consolidated Air Mobility Planning System (CAMPS).** CAMPS provides air mobility mission planners with an integrated view for airlift and air refueling requirements management, planning, and scheduling of AMC/MAF air mobility resources to support peacetime, contingency, humanitarian, and wartime operations. It also provides advanced user capabilities for operational planning and allocation management for AR missions, SAAMs, and GCC airlift requirements.

(5) **Global Decision Support System (GDSS).** As the primary C2 system for Air Mobility Command's airlift and air refueling missions, GDSS provides aircraft schedules, arrival and/or departure, and aircraft status data to support ITV of aircraft and aircrews.

(6) **High-Frequency Global Communications System.** A global, high power, communications system providing beyond line-of-sight connectivity to GAMSS forces world-wide. This includes ITV, tactical data links, weather information, threat warnings, nuclear C2 messaging, and other secure voice and data services.

Additional information concerning communication system planning can be found in JP 6-0, Joint Communications System.

6. Sustainment

Operations and logistics are most effectively integrated as part of a collaborative planning process that includes subordinate component commands, supporting commands and global providers. Equally important with planning is the active integration of sustainment movements from point of origin to point of need to ensure seamless delivery and retrograde of sustainment cargo. USTRANSCOM develops integrated distribution route structures based on the needs of the CCDRs to ensure timely performance through all segments of the joint distribution pipeline.

a. Historically, demand for items increases faster than the supply system can provide, and special management actions might become necessary. Anticipating the demand for sustainment movements requires a shared situational awareness and close

collaboration between staffs during development of future plans and future operations concepts. Sustainment movements are usually a combination of push and pull resupply that requires a flexible means of modulating airlift capacity to respond to varying demand patterns and time-definite delivery parameters.

b. A key consideration during sustainment planning is the modal balance between airlift and surface movements. USTRANSCOM supports routine sustainment operations through scheduled airlift operations such as channel service and scheduled sealift via commercial liner service. Levels of transportation service for sustainment movements are often predicated on rules and transportation priorities applied during requisition or acquisition of supplies, which includes air clearance authority processes established by each service. However, there is no substitute for active planning to ensure sustainment movements are supported with the appropriate transportation mode to efficiently meet the needs of the CCDRs, Service components, and other supported organizations.

c. Routine sustainment planning usually assumes that user requirements and general air and ground security situations allow some flexibility in the actual delivery times of specific loads.

d. 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 combat zone, 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 determine whether palletized cargo can be handled effectively. Operational effectiveness is the primary objective and the efficient use of aircraft and support resources is secondary.

e. Sustainment should be planned to utilize backhaul capacity. Depending on theater and user priorities, typical backhaul loads might include redeploying forces, friendly evacuees, detainees, and excess or repairable material. However, reset and reconstitution of military forces may drive scheduled retrograde movements with the same operational urgency and TDD objectives as other sustainment movements.

Additional information concerning sustainment can be found in JP 4-0, Joint Logistics and JP 4-09, Distribution Operations.

7. Assessment

Assessments must be conducted prior to and during air mobility operations.

a. Prior to executing air mobility operations, consideration must be given to the following planning factors:

(1) Airfields, to include capabilities and limitations and airland facilities available in the departure and arrival areas must be assessed, particularly those in underdeveloped countries where their status may be questionable. A mobility planner should consider runway characteristics as well as taxiway, parking, ramp and cargo handling areas for operational suitability, and determination of maximum aircraft on ground (MOG). Assessment of distribution capabilities and infrastructure for cargo throughput off the airfield is also an important consideration to preclude unnecessary backlogs. Delay in completing the airfield assessment directly impacts the flow of airlifted cargo and passengers into the region.

(2) An airfield's infrastructure also impacts the support GAMSS/JTF-PO forces can provide the air mobility flow. The hours of operation, climatology, weather services, flight planning support, airfield lighting systems, airfield navigational aids, communications, marshalling/storage areas, and road networks are all requirements that need consideration during planning phases.

(3) Host nation support capability and willingness is a critical consideration in the planning phase. Host nation support can include diplomatic clearances, airspace access, lodging, food services, water, communications, labor, local transportation, or other types of support.

(4) Availability of fuel at support locations may limit air mobility support. Petroleum, oils, and lubricants (POL) planning/requirements should include the amount needed for aircraft and ground equipment. 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.

b. Assessments must be conducted continuously during air mobility operations. Assessors must ensure that the user's requirement is being met in accordance with established priorities and air mobility forces are being used efficiently and adapting to changes in the operations tempo or focus. Evaluation tools must include metrics to determine on-time delivery amount of cargo/fueled on- or off-loaded and airdrop delivery precision.

c. Continuous operational assessment that links operational objectives to airlift tasks is the key to ensuring effective employment of air mobility assets. At the same time, economy of force in air mobility operations has a global impact. USTRANSCOM and the MAF in general support all Services' and government agencies' operational requirements simultaneously with a finite force to effectively meet the highest priority air mobility needs. Effectiveness is paramount, but economy of force in planning and execution is an essential consideration.

Additional information concerning assessment factors associated with air mobility operation planning can be found in JP 3-0, Joint Operations.

8. Multinational Planning Considerations

The joint planner should consider complementary multinational capabilities during COA development. However, this capability should be balanced against the potential for competition for US transportation assets to deliver those multinational units into the theater. Additionally, an integral part of the multinational planning efforts is the concept of air operations. The multinational force air component commander is responsible for air operations planning and develops a concept for integrating air operations capabilities. Both US component commanders and multinational force commanders must provide highly trained liaison staffs to ensure integration, coordination, and synchronization of air operations. Air planning should also include the use of logistic air assets and airfields. It is important to ensure that all planners understand the capabilities and limitations that each country brings to the fight. In the event that no established multinational guidance is available, planning considerations for multinational air operations should resemble those for joint operations.

For additional information, refer to JP 3-16, Multinational Operations.

9. Other Planning Factors

a. **Materiel Collection and Classification Planning.** Because much abandoned or captured materiel or contaminated equipment may be usable by friendly forces, ground and air commanders should develop plans for their retrograde, consistent with the urgency and length of the primary mission.

b. **Planning for Detainees.** Detainee collection points should be located near air terminal facilities to aid in air evacuation, but not so close that they are endangered by possible adversary targeting.

For additional information, see JP 3-63, Detainee Operations.

c. **Medical Support Planning.** A complete medical estimate is usually conducted for each phase of an operation. The respective Service component medical planners should conduct detailed medical supply planning and medical support operations. Plans should allow for probable losses of medical equipment and supplies during delivery into the objective area. Estimates should be made for replacement items to cover losses due to battle actions, evacuation of patients, and other causes. The evacuating medical activity usually provides litters, blankets, splints, and other medical items accompanying patients during evacuation. Planners responsible for aeromedical evacuation must ensure plans address the requirement to move CBR contaminated patients in accordance with DOD and USTRANSCOM policy.

Additional information regarding medical support planning can be found in JP 4-02, Health Service Support.

d. **Aeromedical Evacuation**

(1) **Responsibilities.** AE specifically refers to USAF provided fixed-wing movement of regulated casualties using organic and/or contracted mobility airframes with AE aircrew trained explicitly for this mission. Movement within and from forward resuscitative care is normally a Service component responsibility; however, operations that incorporate use of theater hospitalization capability may require casualty movement from forward locations to theater hospitalization capability by the joint AE common-user system.

Information on the AE mission, Service component and common-user systems, organizations, and C2 procedures is contained in JP 4-02, Health Service Support.

(2) **Common-user System.** USTRANSCOM and GCCs perform common-user AE with available air mobility assets. Patient movements are managed through the USTRANSCOM Regulating and Command and Control Evacuation System (TRAC2ES). Normally, patients are evacuated from theater hospitalization to OCONUS definitive care facilities and then on to CONUS definitive care facilities. Movement within and from forward resuscitative care capability is normally a Service component responsibility; however, operations that incorporate use of theater hospitalization capability medical treatment facilities may require casualty movement from forward resuscitative care capability and evacuation to theater hospitalization capability by the joint AE common-user system. However, in selected circumstances, common-user airlift can be apportioned to evacuate patients from as far forward in a theater as the aircraft can operate. Far forward intratheater and intertheater patient movement operations will be coordinated through the JAOC/AOC.

e. **Weather Planning.** The anticipation of weather effects on operations mitigated through planning provides invaluable dividends in efficiencies on strategic mobility. Incorporation of weather considerations into mission planning is essential to mitigate risk, identify opportunity, select ideal environmental conditions, and to optimize routing and DZ/LZ selection. Weather planning is accomplished in the AOC at the operational level.

f. **Withdrawal or Restaging Plan.** The withdrawal or restaging of forces by air should be done IAW the general guidelines for redeployment and extraction airlift operations.

(1) Other specific considerations that may be important to the success of these operations include the local air superiority situation and the possible need for friendly deception. Such operations should mask these withdrawal movements for as long as possible. Clearly, **the likelihood of success will be increased by conducting these operations early enough to allow for comprehensive planning and organized execution.** Once the appropriate ground force commander orders an operation and establishes movement priorities, load plans, and departure points, **the COMAFFOR or**

JFACC (if designated) should control the air movement. GAMSS units should be placed at the departure points, if possible.

(2) **The ground force commander should provide trained loading teams at the departure points to assist airfield support units** in loading and securing equipment, with technical assistance and supervision from Air Force personnel. Specific withdrawal and equipment destruction procedures are contained in appropriate Service manuals.

g. **Space Support Planning.** Friendly space-based capabilities can greatly enhance any air mobility operation. In general, space-based capabilities such as global positioning system (GPS) signals and satellite communications (SATCOM) are readily available for use by friendly forces without needing to be requested. However, planners should be aware of possible constraints on space-based capabilities and should also assess their need for tailored space capabilities which must be requested prior to mission execution.

(1) **Constraints.** Availability of space-based capabilities can be constrained by many factors including the space environment and enemy activity. Planners should consult their weather office for environmental factors which could cause signal interference or anomalies. Additionally, planners should request intelligence assessments of enemy capability to disrupt friendly space capabilities and plan accordingly. This includes enemy jamming of GPS and SATCOM signals.

(2) **Tailored capabilities.** Tailored space capabilities can provide additional resources toward mission success. Often times these capabilities require intensive planning prior to mission execution and should be requested as early in the mission planning process as possible.

h. **Information Operations Planning.** Information operations (IO) are integral to the successful planning and execution of air mobility operations. IO planning in support of global air mobility operations is conducted by the AFTRANS staff in support of the 618th TACC. IO can support both offensive and defensive operations simultaneously, but mobility operations focus is primarily on defensive operations while deconflicting theater offensive operations planning. IO planning requires early and detailed joint intelligence preparation of the operational environment and must be an integral part of, not an addition to, the overall planning effort.

(1) **EW.** EW threat planning is critical to airlift operations. The threat of lasers, radio frequency weapons, particle beams, infrared, and directed energy to MAF operations is increasing in sophistication and effectiveness at an accelerating rate. Mobility forces also require enhanced situational awareness, force protection, reduced radar cross section, and defensive systems to survive in the electromagnetic environment. Effective countermeasures such as flare based defensive systems and large aircraft infrared countermeasures reduce the lethality of threats encountered when avoidance is not possible or unknown. The MAF generally accepts aircraft arrivals and departures to be in the “public domain” and are concerned with probable/likely threat in the vicinity of airfields.

(2) **Computer Network Operations (CNO).** Based on mission classification, the MAF conducts mission planning on both classified and unclassified C2 systems using the SECRET Internet Protocol Router Network (SIPRNET) and Non-Secure Internet Protocol Router Network (NIPRNET). Because adversaries attack our knowledge sources and information systems at multiple locations simultaneously, computer network defense actions are essential. The MAF must plan well-defined boundaries with protection mechanisms (e.g. firewalls, cross domain solutions, Data Management Zones, and intrusion detection and protection systems) that monitor, analyze, detect, and respond to unauthorized internal and external activity. As CNO broadens due to more networked computers and supporting information technology infrastructure, new vulnerabilities and opportunities for exploitation develop. While there are both opportunities to attack and exploit an adversary's computer system weaknesses, there are also new requirements to protect our own network, computers, and infrastructure from similar attack or exploitation.

(3) **Military Deception (MILDEC).** MILDEC planning and execution is used to deliberately mislead adversary decision makers as to air mobility capabilities, intentions, and operations, thereby causing the adversary to take specific actions (or inactions) that will contribute to the accomplishment of the mission.

(4) **Operations Security (OPSEC).** OPSEC denies the adversary information required to correctly assess friendly capabilities and intentions. AMC's OPSEC planning identifies critical information to determine if air mobility plans can be observed by adversary intelligence systems. Once critical information has been identified, (such as for protection reasons, such force composition, movement and refueling schedules, troop and equipment), then security measures and procedures are executed to eliminate or reduce adversary exploitation. Unlike other security programs that seek to protect classified information, OPSEC measures identify, control, and protect generally unclassified mobility operations mission profiles and signatures associated with sensitive operations and activities.

(5) **MILDEC and OPSEC.** Working in tandem, MILDEC and OPSEC complement each other. Controlling the adversary's access to information by denying or permitting access to specific information can shape adversaries' perceptions. Through the vulnerabilities identified by OPSEC, MILDEC seeks to encourage incorrect analysis, causing the adversary to arrive at specific false deductions, while OPSEC seeks to deny real information to an adversary, and prevent correct deduction of friendly plans. OPSEC planning in support of the deception plan is just as important as OPSEC of the real plan, since compromise of the deception may expose the real plan. MILDEC can directly support the OPSEC plan by creating numerous false signatures and indicators. The intent is to manipulate indicators which give insight into operations. Signatures should be managed and adjusted to produce the planned effect. Air mobility operations must protect mission critical information identified by the supported commander for both airlift and air refueling operations. Appropriate deception or misinformation plans, developed early in the planning stages, may help conceal or divert attention from aircraft and troop

movements. However, these plans should not jeopardize alternate plans or other operations within the area.

See JP 3-13, Information Operations, for more detail regarding information operations support of air mobility operations.

i. **Public Affairs (PA).** For air mobility operations, PA planners predict the level of public and media interest and develop PA guidance that best meets the information needs of the public and supports strategic communication (SC) and operational objectives without compromising OPSEC or information security. PA and other SC primary supporting capabilities (IO, psychological operations [PSYOP], and visual information) can shape and influence theater HN/indigenous population perceptions within the AO. For air mobility operations, SC supporting capabilities can help minimize the adverse effects of inaccurate information and analysis, violations of OPSEC, and the spread of disinformation and misinformation that could otherwise threaten US and allied/coalition efforts.

j. **Special Technical Operations (STO) Planning.** The STO cell is responsible for integrating STO capabilities in direct support of mobility operations during deployment and redeployment. The JAOC STO cell relies on expertise from the various JAOC divisions and teams to develop the necessary classified supplemental documents for operations. Effective support for the JFC's mobility requirements demands air mobility experts are integrated into the STO and that STO cell representatives understand and develop support plans to enhance mobility operations.

Intentionally Blank

CHAPTER IV

AIRLIFT

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

Carl Builder, The Icarus Syndrome

1. General

a. **Airlift operations transport and deliver forces and materiel through the air in support of strategic, operational, and/or tactical objectives.** Airlift offers its customers a high degree of speed, range, and flexibility. Airlift enables commanders to respond and operate in a wide variety of circumstances and time frames that would be impractical through other modes of transportation.

b. **Airlift supports the US National Military Strategy** by rapidly transporting personnel and materiel to and from or within a theater. **Airlift is a cornerstone of global force projection.** It provides the means to rapidly deploy and redeploy forces, on short notice, to any location worldwide. Within a theater, airlift employment missions can be used to transport forces directly into combat. To maintain a force’s level of effectiveness, airlift sustainment missions provide resupply of equipment, personnel, and supplies. Finally, airlift supports the movement of patients to treatment facilities and noncombatants to safe havens. Airlift’s characteristics — **speed, flexibility, range, and responsiveness** — complement other US mobility assets.

2. Airlift Operations

Airlift operations are defined by the nature of the mission rather than the airframe used. Most aircraft are not exclusively assigned to one operational classification. In fact, the vast majority of the air mobility force is capable of accomplishing any classification of airlift. Intertheater and intratheater capabilities are available to all users of Air Force airlift.

a. **Intertheater Airlift.** Intertheater airlift provides the critical link between theaters.

(1) During deployment operations, intertheater airlift requirements, while significant, are to a large degree predictable. Such requirements normally are identified in the TPFDD associated with a particular operation plan (OPLAN) or OPORD. A TPFDD can be tailored to meet specific requirements when the mission is not aligned with an OPLAN or modified to meet the requirements associated with a particular COA. Time-definite resupply via airlift from CONUS to the theaters is critical in maintaining the flow of materiel necessary to sustain operations. This concept uses both military and

commercial aircraft to support the sustainment flow that must begin as soon as deployment operations begin.

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

(3) Diplomatic overflight and landing clearances are key to establishing an efficient air bridge for deployment of TPFDD forces and sustainment. En route aircraft clearances may be denied to aircraft suspected of having been contaminated. The JFC must anticipate that formerly contaminated aircraft may be removed from intertheater airlift operations.

HUMANITARIAN RELIEF OPERATION: TSUNAMI SUPPORT

On 26 December 2004 an undersea earthquake struck the Indian Ocean, triggering a series of devastating tsunamis along the coasts of most bordering landmasses. With waves up to 100 feet, the tsunami killed more than 225,000 people in eleven countries, and inundated coastal communities. It was one of the deadliest natural disasters in history.

The plight of the many affected people and countries prompted a widespread humanitarian response. In all, the worldwide community donated more than \$7 billion (2004 US dollars) in humanitarian aid, which was needed because of widespread damage of the infrastructure, shortages of food and water, and economic damage. Epidemics were of special concern due to the high population density and tropical climate of the affected areas. The main focus of humanitarian and government agencies was to provide sanitation facilities and fresh drinking water to contain the spread of diseases such as cholera, diphtheria, dysentery, typhoid and hepatitis. There was also a great concern that the death toll could increase as disease and hunger spread. However, because of the initial quick response, this was minimized.

Operation UNIFIED ASSISTANCE, controlled by Combined Support Force (CSF) 536, delivered 6,685 passengers, 5,444 cargo tons of relief supplies and medical aid. With a focus on air mobility as opposed to combat operations, CSF 536 showcased how Air Mobility contributes to humanitarian relief operations as part of a multinational effort that included nongovernmental organizations.

**Brigadier General Jouas, US Air Force,
Director, Air Component Coordination Element,
Operation UNIFIED ASSISTANCE**

b. Intratheater Airlift. Intratheater airlift provides air movement of forces, personnel, and materiel within a GCC's AOR. Typically, aircraft capable of accomplishing a wide range of operational and tactical level missions conduct these operations. Intratheater operations provide both general support, usually through common-user airlift in response to the JFC's movement priorities, and direct support, normally using Service-organic airlift assets to responsively satisfy Service component commander's priorities. Intratheater airlift requirements include TPFDD force movements and the continuation of sustainment movements arriving in the theater, as well as on-demand movements and routinely scheduled airlift missions for the movement of non-unit related cargo and personnel.

(1) Unit movements within the theater are in response to the JFC's operation or campaign plan. Once combat units are deployed to a theater, the JFC may use intratheater airlift to maneuver forces to exploit weaknesses in the adversary's position. In this capacity, airlift allows the JFC to reposition forces expeditiously, achieve surprise, and control the timing and tempo of operations.

(2) Movements within a theater also permit the continuing resupply of forward units. These requirements normally are predictable, regular, and quantifiable when the forces are not engaged in combat operations. During pre- or post-hostilities, these requirements can usually be fulfilled through a fixed resupply schedule. However, once forces are engaged, resupply requirements increase dramatically and become more unpredictable and variable. The ability of airlift to rapidly and flexibly accommodate the critical resupply requirements of units engaged and operating in such a dynamic environment provides commanders with an essential warfighting capability.

c. CBRN Threats. The CBRN threat environment poses significant, but not insurmountable, challenges to air mobility operations. Used in either an "access denial" or a "deterrence" strategy, adversaries may use CBRN weapons against APODs to disrupt or delay deployment and sustainment of US forces. Commanders must be prepared to continue the transport of critical cargo to and from the warfighter in a contaminated environment. However, they should consider all measures possible consistent with mission priorities and operational risks to debark uncontaminated or decontaminated cargo, equipment, and personnel at uncontaminated airbases. Critical mission requirements may necessitate risk-taking. To minimize the risks, air mobility aircrews and ground support personnel are trained and equipped to operate in a CBRN-contaminated environment. Aircraft decontamination capabilities may not be able to achieve "clearance" standards, however, given the current state of science and technology. Therefore, once an aircraft is contaminated its utility may be restricted. One reason for this is that many countries transited during global operations may not be willing to grant overflight or landing privileges to contaminated aircraft. Operational commanders will risk aircraft contamination if they must, but understand the consequences. Operational commanders do have some tactics at their disposal to minimize the risks of aircraft contamination during air mobility operations, including debarking uncontaminated or decontaminated cargo, equipment, and personnel at

uncontaminated airbases. A number of factors necessitate use of “contamination avoidance” measures by the JFC to preserve air mobility capability.

(1) **Operational constraints.** To prevent the spread of CBRN contamination, the JFC will establish an in-theater location (as far forward as possible) for air mobility aircraft and cargo decontamination. To the maximum extent possible, contaminated airfields will only be serviced by contaminated, or formerly contaminated, airlift aircraft. Current technologies can reduce, but not completely remove, CBRN contaminants. Therefore, “formerly contaminated” aircraft and cargo may still retain residual contamination, posing a hazard to aircrew, passengers, and ground support personnel. Risks increase as residually contaminated equipment is consolidated for shipment and personnel work around this equipment for prolonged periods, particularly in areas with limited air circulation. Use of individual protective equipment is essential.

(2) **Denial of Diplomatic Clearances.** Due to the absence of international agreements regarding maximum levels of acceptable contamination, it is anticipated that “formerly contaminated” aircraft (and those carrying formerly contaminated cargo) may be denied overflight and landing clearances essential to intertheater airlift operations. Denial or loss of clearances can significantly constrain the intertheater airflow. Therefore, contamination avoidance measures must be rigorously enforced to preclude loss of mobility aircraft.

Further information regarding joint operations under CBRN-threat conditions is available in JP 3-11, Operations in Chemical, Biological, Radiological and Nuclear (CBRN) Environments and the Air Mobility Command Counter-Chemical, Biological, Radiological, and Nuclear Concept of Operations.

3. Airlift Missions

The basic mission of airlift is passenger and cargo movement. This includes combat employment and sustainment, AE, special operations support, and OSA (see Figure IV-1). Air Force airlift forces perform these missions to achieve strategic-, operational-, and tactical-level objectives across the range of military operations. Normally, movement requirements are fulfilled through regularly scheduled channel missions over fixed route structures with personnel and cargo capacity available to all customers. These regularly scheduled requirements are validated through the appropriate Service organization to USTRANSCOM or GCC, and then tasked by the 618th TACC, an AMD, or another appropriate C2 node. Depending on user requirements, requests not supportable through the channel structure can be fulfilled through use of other mission categories such as SAAM, exercise, and contingency missions. Requests that cannot be satisfied by any of the above missions may be referred to other transportation modes of the DTS. The airlift system has the flexibility to surge and meet requirements that exceed routine, peacetime demands for passenger and cargo movement. For example, during Operation ENDURING FREEDOM (OEF) and OIF, new channel routes and structures were established to support the significantly increased airlift demands.

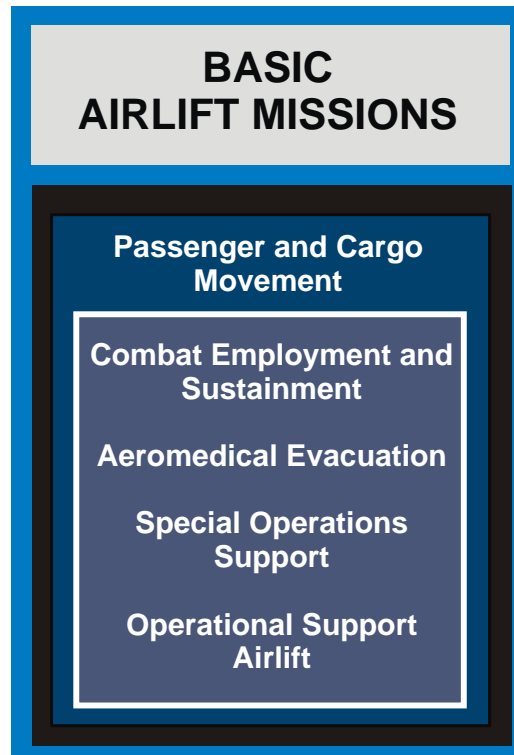


Figure IV-1. Basic Airlift Missions

a. **Combat Employment and Sustainment.** Combat employment missions allow a commander to insert surface forces directly and quickly into battle and to sustain combat operations. For example, combat missions may involve airdropping paratroopers behind adversary lines. Combat sustainment missions may consist of reinforcement of front-line forces engaged with the adversary. Airlift affords commanders a high degree of combat maneuverability permitting adversary troop strongholds to be bypassed. This provides friendly forces a potent offensive advantage and complicates the adversary's defensive preparations. **The combat employment and sustainment mission usually accounts for a small percentage of total airlift sorties; nevertheless, its importance is far greater than the number of sorties indicates. This is a capability which, in most circumstances, cannot be accomplished by other means.**

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

(2) Another important aspect of combat employment and sustainment is the concept of **forcible entry**. In performing this mission, airlift forces are usually matched with airborne, air assault, light infantry, or special forces specifically designed for delivery by air. This mission normally involves inserting airborne forces via airdrop; however, carefully planned airland assault operations can be equally effective. An

example of intertheater forcible entry operations is the airdrop capability that the Air Force provides for the Army. For more information, see JP 3-18, *Joint Forcible Entry Operations*.

Flexibility is the Key to Air Power

When Princess Patricia's Light Infantry Regiment, a Canadian unit with 850 troops and 1500 tons of equipment, redeployed from Kandahar following their tour supporting Operation ENDURING FREEDOM in 2002, US Transportation Command (USTRANSCOM) determined airlift was the best mode available. The Air Mobility Command (AMC) had several options, including what type of aircraft to use and the route they would fly. In the end, C-5s were used in a stage operation out of Diego Garcia in the Indian Ocean. Five C-5s, six complete aircrews, 50 maintainers and aerial porters, and a staff were prepositioned at Diego Garcia. Because of the fuel requirement, the C-5s could not carry their maximum cargo loads and fly nonstop from Afghanistan to Diego, so an air refueling was planned en route. This allowed the C-5s to max out their cargo weight, which cut the number of aircraft and required sorties into Kandahar by half.

This operation highlights two key points: first, it shows the importance of the warfighter giving Commander, USTRANSCOM his requirements without insisting on a specific platform. Had C-17s been used, it would have required 45 sorties, as opposed to 28 C-5 sorties. The aircrews flew tactical arrivals and departures, and ground personnel conducted engine running onloads to minimize ground time in Kandahar- ground times were cut to as little as 25 minutes, vice the normal 3 hours, 15 minutes. Most of this time savings was due to eliminating the ground refueling requirement. Minimizing the number of aircraft and sorties maximizes safety in all cases, but it is especially important in combat zones.

The second point this operation highlighted was the fact that often it is better to use a supported/supporting command relationship. There are times when it's best to change operational control of aircraft to the warfighter, but many times it is best for him to pass his requirements to USTRANSCOM and let "Big AMC" draw from its entire air mobility fleet and utilize its vast command and control and planning resources to conduct the operation.

VARIOUS SOURCES

(3) **Deployment and Sustainment in Nonlinear Operations.** In nonlinear operations, forces orient on objectives without geographic reference to adjacent forces.. These operations require significant airlift/aerial delivery support for each deployment and continued sustainment. 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.

b. **Aeromedical Evacuation.** AE specifically refers to USAF provided fixed-wing movement of regulated casualties using organic and/or contracted mobility airframes with AE aircrew trained explicitly for this mission. Movement of patients requires special air traffic control considerations to comply with patient-driven altitude and pressurization restrictions as well as medical equipment approved for use with aircraft systems. There are processes that occur once patient movement requirements (PMRs) have been identified.

(1) Patient movement requirements centers (PMRCs) are responsible for collaboration of a recommended lift-bed plan, PMR definition and management, and patient ITV. These PMRCs provide connectivity to offer a global view of patient movement. PMRCs are responsible for medical regulating, validation, and coordination, as well as related activities supporting PMR identification and data collection. Patient regulating includes accounting for bed availability and patient ITV. PMRCs assume the responsibilities formerly performed by Armed Services (or joint) medical regulating offices and USAF AE control centers.



Aeromedical evacuation missions require use of medical equipment approved for use with aircraft systems.

(2) An aeromedical evacuation control team (AECT) within each theater's JAOC/AOC performs AE operational mission planning, tasking, and scheduling of airlift and AE assets to support patient movement in coordination with the PMRC for intratheater missions.

(3) For contingency or wartime operations, the AECT provides AE C2 for assigned AE forces. The AECT is the source of AE operational expertise within the AMD. The AECT will coordinate AE operational mission planning, tasking, and scheduling of airlift and AE assets to support patient movement in coordination with the PMRC. The AECT will work closely with other AOC divisions and teams to ensure AE missions are completely integrated into the ATO.

AEROMEDICAL EVACUATION (AE) SUCCESS STORY

The ability to use virtually any aircraft on-site or in-system (vice the old system of dedicated AE aircraft) provided a quick response to casualty movement requirements. Air Mobility Command AE forces supported approximately 7,847 patient movements between 1 January and 20 May 2004. "Some of the guys are hurt pretty bad (sic). I wish that I could help them somehow, but the most I can do is make sure the aircraft are configured right before every launch, make sure that there is always a crew that is ready to fly, and that the aircraft launches on time. You will never know how much it means to me that I have had the opportunity to participate." – Deployed AE support troop, in email home.

Air Mobility By The Numbers

(4) Intertheater AE is normally accomplished using designated or retrograde organic AE aircraft until such time that dedicated CRAF AE assets are activated for patient movement. When CRAF AE capability is exceeded or on an urgent or priority basis, retrograde or dedicated AE aircraft may be used. Alternatives to CRAF AE or military aircraft may be pursued when competing airlift or evacuee requirements reduce airframe availability. These alternatives could include use of other organic military airlift, CRAF passenger aircraft, or authorization for commercial travel for ambulatory patients who do not require in-flight supportive medical care.

(5) Use of CRAF aircraft for AE will be dependent on the threat in the region. As civilian aircrews are neither trained nor equipped to fly in contaminated conditions, CRAF AE aircraft will not be used to move contaminated or contagious patients.

(6) Intratheater AE involves movement of casualties and/or patients within and/or out of the operational area by fixed wing aircraft to theater hospitalization capability or definitive capability. The movement of casualties and/or patients within and/or out of the joint area of operations by fixed wing aircraft to theater hospitalization capability or definitive capability is generally accomplished using dedicated, designated, opportune, or scheduled aircraft.

Further information on AE patient movement can be found in JP 4-02, Health Service Support; AFTTP 3-3.AOC; and Air Force Doctrine Document (AFDD) 2-6, Air Mobility Operations.

c. **Special Operations Support.** Specified airlift forces provide unique airland and airdrop support to SOF. Since there are a limited number of airlift assets dedicated to this mission, the principle of economy of force is particularly applicable. When performing special operations missions, highly trained airlift crews normally act as an integral member of a larger joint package. Because these airlift missions routinely operate under adverse conditions in a hostile environment, extensive planning, coordination, and training are required to enhance mission success. Airlift used in a special operations role provides commanders the capability to achieve specific campaign objectives, which may not be attainable through more conventional airlift practices.

d. **Operational Support Airlift.** OSA is a special classification of airlift operations that moves high-priority passengers and cargo with time, place, or time-sensitive/mission-capable requirements. OSA operations are normally conducted in direct support of the supported organization's requirements. USTRANSCOM is responsible for the scheduling and tasking of OSA operations regarding CONUS-based assets while the Services validate OSA requests. Theaters with their own OSA fleets are responsible for scheduling and execution tasking of OSA operations within their AORs. Within a theater, OSA assets and their scheduling should reside with their respective Service component, and may be made available for tasking at the CCDRs direction.



A variety of operational support airlift aircraft illustrate the variety of airlift missions.

(1) In theory, almost any aircraft could contribute to the intratheater effort. In practice, however, the bulk of intratheater missions are normally done by fixed-wing aircraft provided by the Air Force component, while some limited or specialized missions may be accomplished by fixed- and rotary-wing aircraft provided by other Services. It is important to consider that aircraft performance characteristics will be directly affected by such factors as gross weight, atmospheric conditions, runway length and condition, and flight obstacles as outlined in Service publications. Additionally, the Services operate more specialized fixed-wing transports capable of performing time sensitive, mission critical requirements for forward deployed units.

(2) It is often difficult to view the relative contributions of the components of the joint force in isolation. Each is **critical to the success of a joint force operation** and each has **unique capabilities** that cannot be duplicated. **Common-user airlift achieves an economy of force.** Rather than each Service and non-DOD agency providing its own airlift, **airlift is consolidated and tasked to support all organizations.** While different types of operations will have varying requirements, the following highlights some of the airlift requirements of the various organizations that use common-user airlift.

(a) **USTRANSCOM.** GAMSS forces normally **deploy early in an operation** to establish en route and destination support. This may consume a large portion of the first airlift missions.

(b) **Army.** **Even though the Army has significant organic airlift assets, it often has the largest requirement for common-user airlift.** Army forces rely heavily on intertheater and intratheater airlift for deployment, airborne operations, and redeployment of personnel and early arriving or departing unit equipment. Sustainment is also moved during deployment, but its delivery must frequently be balanced against force deployment or redeployment requirements because these operations share the same deployment and distribution infrastructure and other resources. The Army's prepositioning program also requires significant airlift to move troops to designated locations to link up with prepositioned equipment.

(c) **Navy.** Sustainment and combat readiness of deployed naval forces depends on flexible and highly responsive intertheater airlift support. Afloat naval forces normally serve as a force enabler and consequently require the least amount of common-user airlift support. However, the Navy depends on common-user airlift to sustain forward-deployed operations with personnel, materiel, and mail from CONUS to overseas bases. The Navy depends on organic, land-based, fleet-essential airlift assets to transport passengers and cargo intratheater from the APOD to forward logistics sites for further transfer to fleet units. Naval organic airlift, known as Navy-unique fleet essential aircraft, then transports passengers, mail, and critical materiel from forward sites to underway forces. Although naval organic airlift satisfies most intratheater requirements, the Navy requires some common-user airlift to augment this capability.

(d) **Marine Corps.** Marine Corps forces require common-user airlift when deploying into a theater as part of either a maritime pre-positioning force Marine air-



Limited or specialized missions may be accomplished by fixed- and rotary-wing aircraft provided by Services other than the Air Force.

ground task force (MAGTF) or as an air contingency MAGTF. During maritime pre-positioning force operations, Marine forces are airlifted to join maritime pre-positioned equipment and supplies at the arrival and assembly area. Additional fly-in echelons of personnel, equipment, and supplies are airlifted into the theater to complete and sustain the force. The air contingency MAGTF requires intertheater airlift of both personnel and equipment. Depending on the mission, amphibious MAGTF operations ashore may require intertheater and intratheater common-user airlift support to sustain and/or support the force.

(e) **Air Force.** Most Air Force unit aircraft self-deploy; however, unit support personnel and equipment require airlift to the destination with or before the deploying unit aircraft. Dedication of significant airlift assets to Air Force units may be required early in deployment operations. Air Force units normally begin air operations shortly after arrival. Therefore, airlift must be able to **rapidly deploy full squadron support packages**, to include combat support elements, their equipment, and both initial and sustainment supplies.

(f) **Coast Guard.** Coast Guard operates a mixed fleet of fixed- and rotary-wing aircraft for organic airlift. It is able to provide flexible and responsive common-user airlift but is limited by statutory priorities and a lack of strategic support facilities. **Its organic airlift is normally sufficient to satisfy Coast Guard airlift requirements.** Coast Guard common-user airlift is available to naval forces for wartime tasking. Non-wartime airlift may be requested from the Commander, Atlantic Area or the Commander, Pacific Area, under Title 31, USC ,Sections 1535 and 1536.

(g) **Special Operations Forces.** SOF have specially configured aircraft dedicated to special operations air mobility tasks of employment, sustainment, and force extraction of SOF. These aircraft are not part of the common-user system and have limited capability to perform large-scale deployment, sustainment, and redeployment operations. Due to their unique capabilities, special operations aircrew and aircraft may be requested to support other specific specialized air mobility missions, but must be deconflicted from higher priority special operations requirements. **SOF are augmented by common-user airlift support.** Additionally, selected conventional airlift forces with specially trained aircrews and modified aircraft may augment SOF airlift capability.

1. Commander, USSOCOM obtains airlift and provides an STT to support airlift operations by following the procedures in this publication and in JP 3-05, *Doctrine for Joint Special Operations*. **Intratheater airlift forces provide valuable support for the SOF in the joint force.** For routine logistics requirements, SOF request intratheater airlift support through their respective supporting Service component. When SOF units require airlift to perform special operations-specific missions that require specially trained and equipped airlift forces, they transmit their request through their SOF command channels. **Airlift personnel** (particularly aircrews) expected to provide employment airlift support to SOF **should be fully incorporated into the SOF operation planning process and, if necessary, entered into isolation for tactical rehearsals.**

2. On the other hand, airlift aircraft and crews should not be taken out of the airlift system any longer than necessary to prepare them for the anticipated operation. Standing down aircraft for longer periods could waste valuable lift capacity and increase the signature of the SOF's preparation phase. Although it is possible for SOF to provide some common-user airlift to the theater if directed by the JFC, this would only be done in exceptional cases.

(h) **Contract Airlift.** There are times when airlift is contracted to commercial carriers. Frequently, military airlift cannot be used because of excessively high demand and sometimes political sensitivities make nonmilitary airlift a better option.

(i) **Other Non-DOD Agencies.** US Government (USG) agencies, such as the Department of State and the Drug Enforcement Administration, use DOD airlift for activities such as NEO, counterdrug operations, foreign humanitarian assistance, and domestic support operations. **Non-DOD agencies may use common-user airlift, providing the DOD mission is not impaired.** The movement must be of an emergency, lifesaving nature, specifically authorized by statute, in direct support of the DOD mission, or requested by the head of an agency of the government under the Economy Act (Title 31 USC Sections 1535 and 1536) and / or the Stafford Act. The Economy Act permits one federal agency to request the support of another, provided that, the requested services cannot be obtained more cheaply or conveniently by contract. Under this act, a lead federal agency may request the support of the DOD without a presidential declaration of an emergency as required by the Stafford Act. The Stafford Disaster



Humanitarian relief takes many forms.

Relief and Emergency Assistance Act sets the policy of the USG to provide an orderly and continuing means of supplemental assistance to state and local governments in their responsibilities to alleviate the suffering and damage that result from major disasters or emergencies. It is the primary legal authority for federal participation in domestic disaster relief. Under the Stafford Act, the President may direct federal agencies, including DOD, to support disaster relief. DOD may be directed to provide assistance in one of three different scenarios: a Presidential declaration of a major disaster, a Presidential order to perform emergency work for the preservation of life and property, or a Presidential declaration of emergency. To obtain common-user airlift, non-DOD agencies submit requests IAW *Defense Transportation Regulation (DTR) 4500.9R*.

4. Airland Delivery

a. **Airland is the preferred method of delivery.** Planners should view airland delivery as the primary means for most air movements. In the airland delivery method, airlifted personnel and materiel are disembarked, unloaded, or unslung from an aircraft after it has landed or, in the case of vertical takeoff and landing aircraft, after it has entered a hover.

b. Airland delivery is usually the most efficient delivery method for moving equipment, personnel, and supplies for the following reasons.

(1) It allows a greater degree of unit integrity and the capability to rapidly employ units after landing.

(2) It carries the least risk of injuring personnel and damaging loads.

(3) It requires minimal specialized training and equipment for transported personnel.

(4) It seldom requires special rigging of materiel.

(5) It permits the maximum utilization of ACL by eliminating the volume and weight penalties of preparing loads for airdrop deliveries.

(6) It maximizes the opportunity to backhaul or evacuate cargo, patients, and personnel.

c. The principal disadvantages of airland operations are:

(1) It requires airfields or LZs that are moderately level or unobstructed and adequate for the anticipated operation.

(2) It may increase mission intervals depending on airfield size, offload equipment availability, and airfield support capability.

(3) It requires more time for delivery of a given size force than airdrop delivery.

(4) It normally requires airlift mission support such as ground-handling and transportation assets.

(5) It prolongs exposure to air or ground attacks.

(6) It reduces available airlift flexibility when using uncontaminated aircraft to land in a contaminated environment. Once an aircraft is contaminated it will not be allowed to be operated in an uncontaminated environment.

d. When planning airland operations, consideration should be given, but not limited, to the following.

(1) **The Tactical Situation**

(a) The expected conventional and nonconventional threat throughout the mission.

(b) The location of countries granting overflight rights and any conditions placed upon them.

(c) The duration and location of the operation.

(d) The location, landing clearances to, and capabilities of suitable airfields, supply bases, APODs, and forward operating bases (FOBs).

(e) Airspace considerations, to include the ability to control airspace in the absence of ATC facilities.

For further information on TTP for terminal airfield ATC, see FM 3-52.3, MCRP 3-25A, NTTP 3-56.3, and AFTTP (1) 3-2.23, Multi-Service Procedures for Joint Air Traffic Control.

(f) The type and amount of cargo or personnel for delivery.

(g) The desired phasing of forces into the operation.

(h) The weather conditions.

(i) Night operation/night vision device requirements.

(2) **The Mission Requirements**

(a) Airlift assets available, including the number and type of aircraft and crews.

(b) Protection of aircraft.

(c) Aircrew survival measures, including escape and evasion points, routes, corridors, and safe haven locations.

(d) Aircraft servicing, maintenance, and damage repair capabilities.

(e) Airfield capabilities, including pavement strength and clearance requirements.

(f) Airfield onload and offload capabilities.

(g) Transportation capabilities to distribute cargo or personnel to the final destination.

(h) MHE support.

(i) POL storage and dispensing capability.

e. Airland operations generally fall within the following four concepts:

(1) **Hub and Spoke Operations.** 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.

Units should consider the required MHE and transportation assets needed to transfer personnel, equipment, and cargo from one aircraft to another.

(2) **Direct Delivery.** Another employment concept, **direct delivery**, involves airlifting personnel and materiel from ports of embarkation to forward-operating locations in the theater, bypassing intermediary operating bases and the transshipment of payloads typically associated with hub and spoke operations (see Figure IV-2). Direct delivery uses airland or airdrop delivery methods. For example, personnel can be airlifted from CONUS and delivered directly to the theater by airlanding them at a forward operating location or airdropping them as part of a strategic brigade airdrop operation. Direct delivery shortens in-transit time, reduces congestion at main operating bases, and enhances the sustainment of forward bases. One challenge for aircrews conducting direct delivery is obtaining up-to-date information during the lengthy flight.

(3) **Lily Pad Operations.** Aircraft ranges, crew requirements, and mission limitations may dictate the need for intermediate stops, which is referred to as “lily pad” operations (see Figure IV-3). The final leg into the AOR or JOA may terminate at the

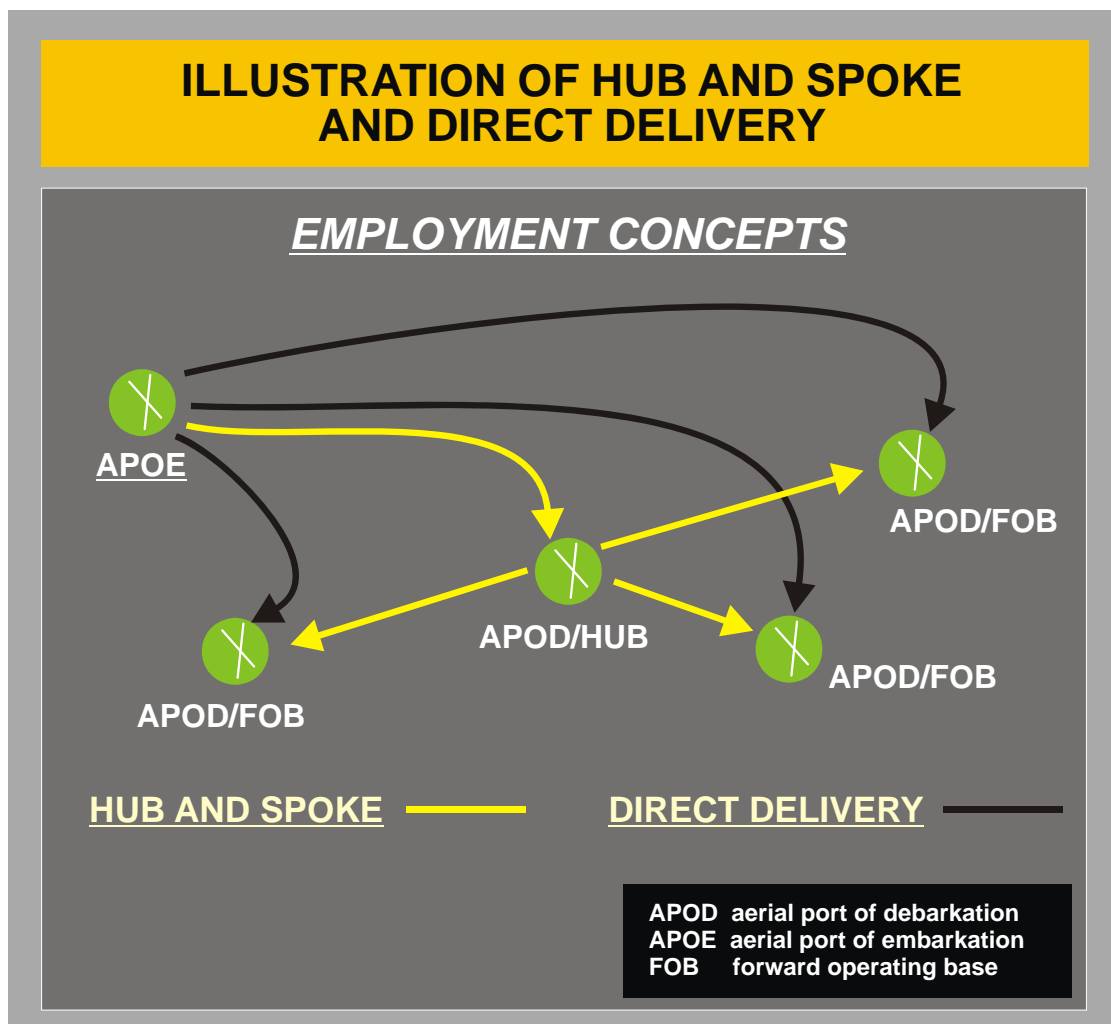


Figure IV-2. Illustration of Hub and Spoke and Direct Delivery

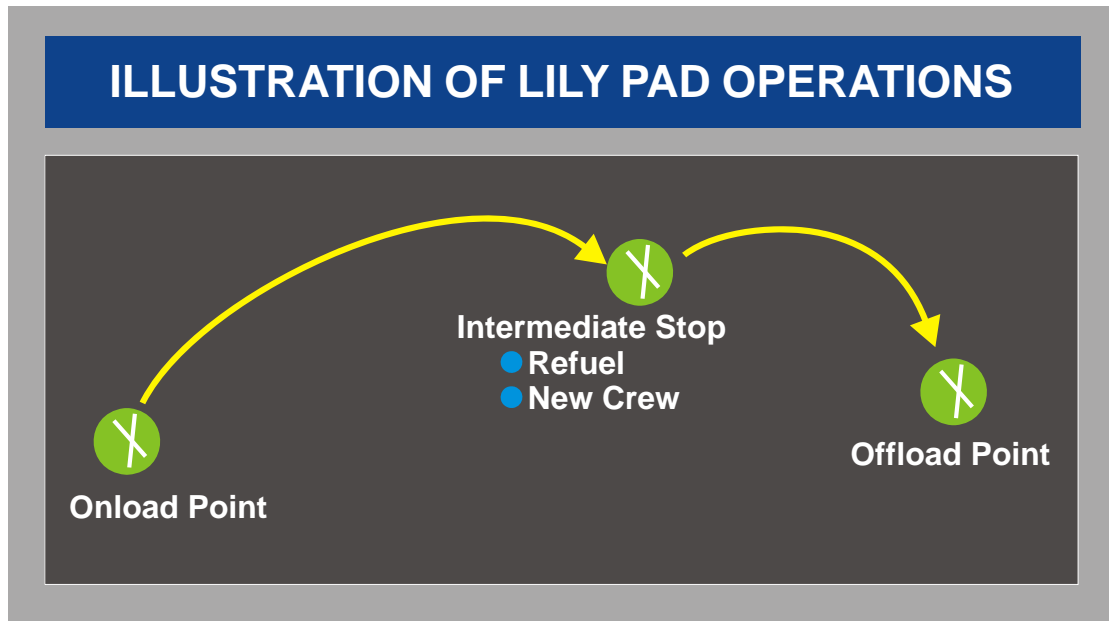


Figure IV-3. Illustration of Lily Pad Operations

final destination or at a theater hub. These operations require en route support locations and may place a heavier burden on GAMSS.

(4) **Air Bridge.** Air bridge operations are defined as flights between CONUS and OCONUS terminals where the receiver aircraft's range is augmented by an in-flight refueling on designated AR tracks (see Figure IV-4).

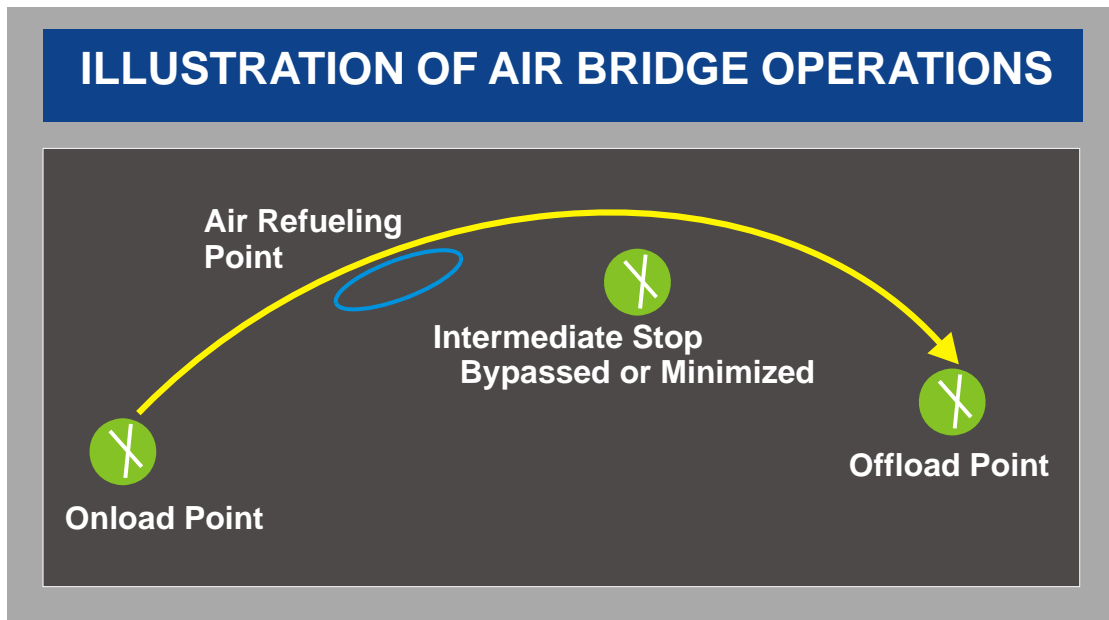


Figure IV-4. Illustration of Air Bridge Operations

f. When considering airland operations, use of hub and spoke operations, direct delivery, lily pad, or air bridge operations must be weighed and scheduled judiciously.

(1) **Direct delivery is the best method for time-sensitive cargo.** Direct delivery reduces transshipping procedures and shortens delivery time for small loads. Direct delivery is not, however, the best solution for large movements or when there are multiple FOBs that must be serviced. Most direct delivery operations will require an air bridge and air refueling support. While these operations are more complex, they can significantly reduce the GAMSS footprint by eliminating transshipping operations, reducing the number of diplomatic clearances required and, in most cases, decreasing closure time. However, air bridge operations do rely on air refueling, which increases the number of aircraft required to accomplish the mission. Hub and spoke operations allow planners to maximize the capabilities of each aircraft type. Many of the CRAF partners who fly the contract airlift mission cannot (for insurance purposes) or will not fly into many of the FOBs. Hub and spoke operations allow a safe APOD for loading operations. Hub and spoke operations also allow for the flexible dispersion (to include last minute changes in requirements) between the various FOBs.

(2) Airfield and aerial port capabilities: mission delays and backlog cargo at intermediate or theater offload terminals may result. AR and airlift forces have finite maintenance and regeneration cycles, which may quickly be exceeded.

(3) GAMSS forces have limited organic resources and can only operate “barebase” terminals for limited time periods.

g. For movement planning purposes, airlift aircraft load planning considerations are either administrative-loading or combat-loading.

(1) **Administrative-loading** gives primary consideration to using airlift assets most efficiently. Administrative-loading maximizes use of volumes and weight capacities of airlift aircraft and their ACL without regard to ground force tactical considerations. Routine air movement is usually unopposed and uses secure airfields or well established landing zones; the majority of these missions involve the administrative loading of troops and equipment.

(2) **Combat-loading** arranges personnel and materiel to arrive at their intended destination in an order and condition so they are ready for immediate use. Combat-loading maximizes the combat readiness of the organizations and equipment being moved and stresses effectiveness. Airlift forces can move combat-loaded units to maximize their readiness for immediate combat operations. Given the assumption of immediate combat, user requirements should dictate scheduling and load planning.

h. The following are considerations when selecting a landing zone.

(1) **The JFC determines the most suitable LZ locations.** The selected sites must meet aircraft operational requirements, ground component requirements, and construction considerations.

(a) If an airfield is to be constructed, the supported component engineer, the JFC-designated representative, and the Air Force staff engineer must agree on its specific site. The supported component engineer controls the selected site until the designated airlift representative accepts use of the LZ.

(b) **Aircraft may have to use LZ facilities before construction is completed.** In addition to emergency landing situations, delivery of additional construction equipment, emergency supplies, or reinforcing units may be necessary. The supported component construction engineer and the designated airlift representative should jointly agree to such use.

(c) **When established construction requirements have been met** and the designated airlift representative accepts the LZ, **control of the LZ passes to the airlift mission commander.** The construction engineer assigns a minimal force to repair and maintain the critical landing surfaces, taxiway, and hardstands. The composition and size of the unit will depend on the threat situation, type and location of the LZ, availability of engineering forces, expected LZ use, and weather.

(2) Although the senior planning headquarters assigns the general landing area, **subordinate units usually designate specific LZs.** Desirable characteristics of LZs are ease of identification from the air; suitable airfield capabilities; a straight, unobstructed, and secure approach for aircraft; and close proximity to ground objectives. Depending upon mission requirements, some LZs may be developed into more sophisticated facilities. Figure IV-5 shows some of the additional characteristics that might become important. This list is not all-inclusive, or all-exclusive. For a longer-term operation, additional security, general engineering, public health, sanitation, and other requirements might need to be considered.

For additional information, see JP 3-34, Joint Engineer Operations.

(3) **LZs should be classified** according to the applicable aircraft and airfield criteria furnished by the construction engineer. **Essential airland facilities should be identified before the operation begins.** Minimum facilities are provided initially to permit early occupancy and for safe and efficient landing operations. Plans and orders should provide for later improvements to increase the efficiency of operations and safety factors of the facility.

(4) **LZ dimensions vary** according to the types of aircraft involved. Factors considered include aircraft ground roll, temperature, field elevation, and nature and conditions of the landing surface. Expected maximum takeoff and landing gross weights, obstructions, and terrain on approach and departure should also be considered.

POTENTIAL LANDING ZONE CONSIDERATIONS

- Area of sufficient size to accommodate the number and type of aircraft to be landed
- Parking and dispersal area for optimal use
- A road net to handle ground vehicular traffic
- Minimum construction and maintenance needs
- Clearance and strength criteria met
- Areas and facilities for air terminal operations
- Facilities for holding patients awaiting evacuation
- Sufficient aerial port capacity to handle incoming personnel and supplies
- Personnel, facilities, and vehicles to support crash and rescue mission capabilities

Figure IV-5. Potential Landing Zone Considerations

(5) **Existing facilities**, such as roads and open areas, **should be used** to reduce the time and effort for new construction. Furthermore, **airland facilities should be dispersed** to avoid becoming lucrative targets. Host-nation support (HNS) agencies may be used to identify emergency or contingency runways.

5. Airdrop Delivery

In the various airdrop methods, airlifted personnel and materiel are disembarked or unloaded from aircraft still in flight.

a. Airdrop is often militarily advantageous.

(1) It permits sustainment deliveries to units operating away from airfields and LZs.

(2) It permits the delivery of combat forces and materiel, concentrated and in mass, in minimum space and time (often with the element of surprise).

(3) Airlift aircraft can accurately airdrop personnel and materiel in conditions of poor visibility that would otherwise preclude airland operations.

(4) Medium/high altitude airdrop methods enable aircraft to remain above some low altitude threats.

(5) When critical cargo must be delivered by an uncontaminated aircraft into a contaminated LZ or airfield.

b. In relation to airland delivery, airdrop delivery has several disadvantages.

(1) It carries an increased risk of injury to personnel or damage to cargo.

(2) It requires special training for the riggers, transported personnel, and the aircrews.

(3) It can limit ACL utilization substantially because of the special rigging required for airdropped materiel.

(4) It has surface wind limitations.

(5) If employed by a large formation, it represents an operational level risk. Detection and successful attack by the adversary could rob the theater campaign of two critical assets: the airlift force and the unit and/or materiel being carried. Accordingly, the decision to use the airdrop method is predicated on determining if a user's requirements justify the risk to, and expenditure of, scarce and costly airdrop resources.

c. This section provides appropriate guidelines and considerations that may be useful in developing exercise and combat airdrop operations. This information describes the capabilities and minimum standards that airlift and airborne forces are trained to execute.

(1) **Responsibilities.** The airborne force commander and airlift mission commander should coordinate with each other throughout the aerial delivery planning and mission execution on matters such as:

(a) The suitability of flight routes and DZ size.

(b) DZ geographic relationship to the initial objective.

(c) Terrain conditions on the DZ that could cause an unacceptable number of injuries, excessive equipment damage or loss, or other deployment delays.

(d) Routes to the DZ, terrain obstructions, ease of zone identification, and adversary defenses.

(e) Earliest possible collaboration on intelligence matters, to include requirements for intelligence data and imagery products.

(f) Identification of mission-critical cargo and a "go or no-go" decision point.

(2) The airlift mission commander should also coordinate with the supported force commander before determining the tactics to employ. Many factors influence this decision, including the size of DZs, surrounding terrain features, tactical scheme of maneuver, enemy air defenses, and en route and objective area weather.

(3) The JFC makes the decision to continue, cancel, or postpone the operation based on the recommendations of the supported commander and AFCC.

d. **C2 Channels. Clear C2 channels** should be established in the theater of operations. The airdrop system should be designed to be responsive in supporting requirements. Airdrop resupply is a joint action between the Air Force component and the component being supported. Supported components are responsible for providing required supplies, rigging them for airdrop, and delivering them to the departure airfield. The supported component is also responsible for loading the supplies onto the airdrop aircraft under supervision of Air Force personnel.

(1) Units requesting airdrop resupply have responsibilities to accomplish both before and after submission of airdrop requests. Before submitting requests, units should determine:

- (a) Supplies and equipment needed;
- (b) Location of drop zone; and
- (c) Time and date airdrop is desired.

(2) After airdrop requests are submitted, units:

- (a) Prepare and secure the drop zone;
- (b) Control the drop zone in the absence of a USAF STT. DZST personnel may operate DZs under visual meteorological conditions and instrument meteorological conditions (peacetime training based upon equipment availability) for single-ship aircraft and formations up to and including three aircraft);
- (c) Recover airdropped supplies and equipment; and
- (d) Recover, retrograde, or destroy airdrop equipment.

e. **Airdrop Methods.** Airdrop is an alternate to airland for delivering personnel, equipment and supplies. The type of airdrop, (low or medium-high altitude, low velocity, high velocity, free drop, single ship or multi-ship) depends on the threat, the required payload, the accuracy required, and whether mass is required on the drop zone. Units requesting airdrop should request a capability. The supporting command should task the appropriate asset and tacticians should determine the appropriate method of airdrop.

(1) **Personnel Airdrop.** Personnel airdrops use static line or free fall procedures. In general, static line airdrops occur from fixed wing/rotary wing aircraft at altitudes below 1,500 feet above ground level (AGL) and are often used to minimize paratroopers' exposure to ground threats while under the canopy. Conversely, free fall airdrops normally occur above 5000 feet AGL. Specialized free fall procedures (high altitude low-opening/ high-altitude high-opening) may be used to insert personnel as part of a clandestine operation.

For additional information, see applicable Service manuals and directives (i.e., FM 3-21.220, Static Line Parachuting Techniques and Training, and FM 3-19, Military Free-Fall Parachuting Tactics, Techniques, and Procedures).

(2) **Heavy Equipment Airdrop.** Heavy equipment loads consist of vehicles, equipment or supplies rigged for airdrop on Type V platforms which are extracted singularly or sequentially by extraction parachutes.

(3) **Container Delivery System (CDS) Airdrop.** A CDS airdrop is a gravity assisted airdrop utilizing A-22 containers rigged to different parachutes. The loads are cushioned with energy absorbing material and contain supplies that can withstand high velocity impact.

(4) **Improved CDS (ICDS) Airdrop.** An ICDS airdrop uses standard A-22 containers (up to 10,000 pounds in weight) rigged with various types of parachutes. The "improved" aspect is achieved by using joint precision airdrop system (JPADS) software to leverage Air Force Weather Agency wind data and dropsonde GPS telemetry data to calculate a more accurate ballistic wind and a more refined release point. The resultant effect is potential increased drop accuracy from low and high altitude airdrops (chute-type dependent) operations, in day/night/instrument meteorological conditions/visual meteorological conditions.



Container delivery system bundles departing a C-17 during an airdrop mission.

(5) **JPADS.** JPADS is a family of GPS-guided, self-maneuvering systems. The overall basic system consists of a common mission planner, an airborne guidance unit and multiple steerable parachute/parafoil systems. Certain systems require dropsonde employment. Flight profiles can vary significantly with system type utilized. Airspace deconfliction is a critical JPADS employment operations planning factor.

(6) **Free Fall Airdrop.** Free fall airdrop involves dropping small items such as packaged meals or unbreakable objects like hay bales without the use of a parachute.

(a) **Leaflet Airdrop.** Leaflets are used in support of PSYOP. The required leaflet dispersion pattern is based on leaflet size, paper weight utilized, target/coverage area size, and wind speed. These factors impact drop altitude and possible run-in headings. An accurate weather forecast is the single most important requirement.

(b) **Tri-wall Aerial Distribution System (TRIADS) Airdrop.** TRIADS is used to airdrop containers of humanitarian daily rations during humanitarian airdrop operations. It uses standard CDS procedures with boxes rigged to destruct at the end of a static line as they exit the aircraft, causing their contents to be dispersed into the air. Like leaflet drops, target/coverage area size is a factor when determining drop altitude.

f. **DZ Types.** A DZ is a specified area used for the aerial delivery of personnel, equipment, or supplies through the use of airdrop. There are several different types of DZs, tailored to specific operations and locations. DZ size and selection are the shared responsibility of the supporting and supported force commander and depend on the load being dropped, method of delivery, dispersal pattern, and the level of risk the commander is willing to accept. The supported force is responsible for DZ establishment, operation, safety, and elimination or acceptance of ground hazards associated with the DZ. The airlift mission commander is responsible for the safety-of-flight review.

(1) **Standard DZ.** A physical survey is accomplished by a qualified surveyor, followed by a safety-of-flight in order to create a drop zone. After these are accomplished, the survey is reviewed and approved. DZs can be rectangular, an area, circular, random approach, or a JPADS DZ.

(a) **Rectangular.** DZs are normally rectangular due to the longer length requirements. These drops zone can have one axis of flight or also allow flight axis from the opposite direction.

(b) **Area.** An area DZ, illustrated in Figure IV-6, consists of a start point (point A), an end point (point B), and a prearranged flight path (line of flight) over a series of acceptable drop sites between these points. The distance between points A and B generally should not exceed 15 nautical miles or 28 kilometers, and changes in ground elevation along the line of flight should not exceed 300 feet or 90 meters. The user may want the drop to occur at any location between point A and point B within ½ nautical mile of centerline. Aircrew use pre-briefed signals to identify the drop location.

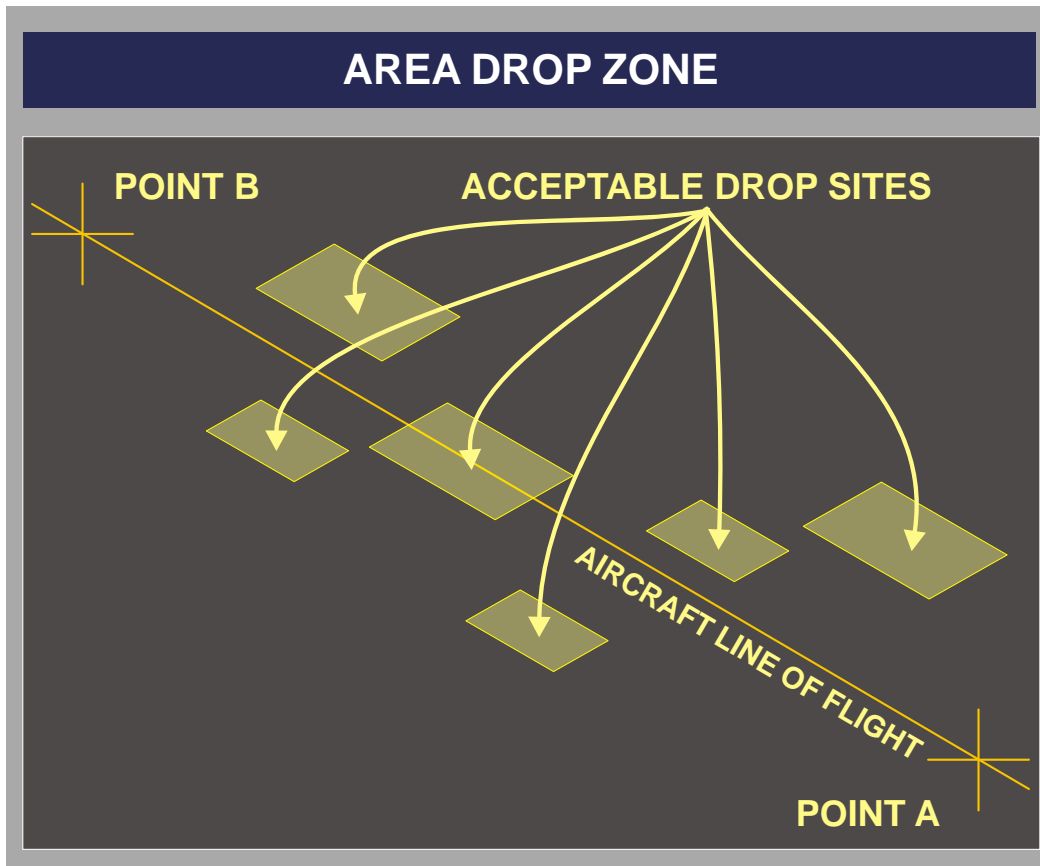


Figure IV-6. Area Drop Zone

(c) **Circular.** A circular DZ, shown in Figure IV-7, has multiple run-in headings and is inherently random. Mission requirements and usable terrain govern its size. The radius of a circular DZ corresponds to the minimum required distance from the point of impact (PI) to one of the trailing edge corners of a rectangular DZ for the same type and number of loads being dropped. In other words, the entire DZ box fits inside the circle. Water DZs are normally circular in shape. The PI of a circular DZ is normally at the DZ center.

(d) **Random Approach.** Random approach DZs are circular, square, or rectangular and large enough to permit multiple run-in headings. Any axis of approach may be used as long as the resulting DZ meets minimum criteria for the load being airdropped. The PI is normally placed at the DZ center point.

(e) **JPADS.** JPADS (guided systems) DZs are typically circular. The PI is located at the center point. Some JPADS multi-platform loads/capabilities may drive elliptical DZs, approximated by rectangular surveyed boundaries. **For JPADS/improvised container delivery system airdrops, a collateral damage estimation (CDE) is required.** This is necessary to mitigate the risk to people, buildings, and equipment near or on the DZ if a chute or guidance unit fails. It is critical that the CDE be coordinated between the supporting and supported force commander.

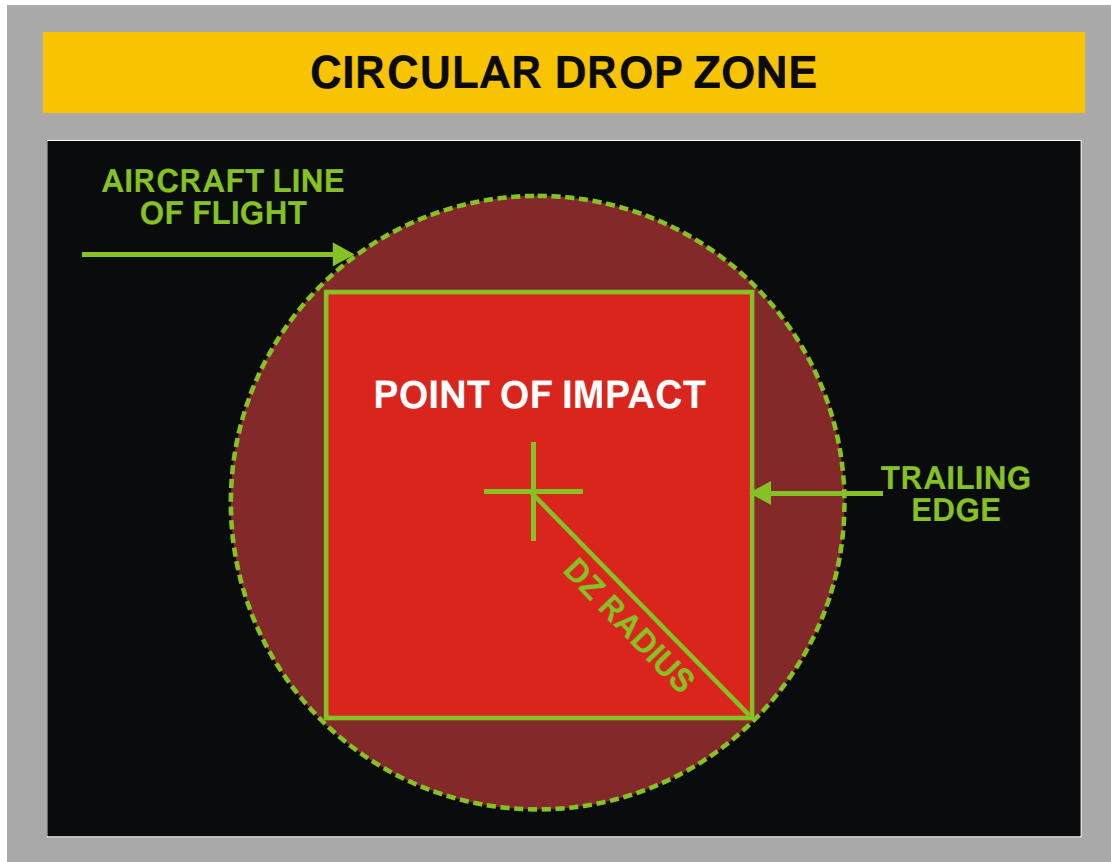


Figure IV-7. Circular Drop Zone

(2) **Tactical DZ.** During exercises and operations, tactical DZs (DZs that have not been formally surveyed) are sometimes selected to support highly mobile ground forces. These DZs are evaluated and approved for use using tactical survey procedures. When using a tactical DZ, the airlift unit assumes responsibility for aircraft safety of flight while the receiving unit assumes responsibility for load condition. The DZ size should be determined by method of delivery, load dispersal statistics, **CDE**, discussion with the receiving unit, and professional judgment. Other considerations are recoverability of airdrop equipment and survivability or recoverability of the load. For example, small trees covering the entire DZ might limit the recovery of airdrop parachutes, but still allow complete recovery of the loads. Tactical DZs may be created within the boundaries of an existing surveyed DZ if needed to accomplish a particular mission. In this case, the tactical DZ need not use the existing dimensions or axis of approach as long as minimum DZ requirements are still met.

g. **Drop Zone Considerations.** A wide variety of factors determine the actual airdrops.

(1) **Drop Airspeeds.** Specific airdrop airspeeds for each type aircraft are published in appropriate Service manuals or technical orders. Except in emergencies, aircraft should not deviate from these established airspeeds. Deceleration to prescribed drop airspeed and attainment of level flight altitude are required to provide a stable platform for the actual airdrop of personnel, supplies, or equipment.

(2) **Drop Zone Wind.** **DZ wind information is critical to airdrop accuracy** and aircrews must consider wind data from all available sources when determining the computed air release point. In addition to inflight wind data, aircrews are normally provided with DZ wind information from ground sources (such as STTs or DZSTs) which includes **surface winds** and the **computed mean effective winds**. Additionally, ground sources can relay indications of possible wind shears or local phenomena that could affect wind direction or speed and, ultimately, impact upon airdrop or mission success. **Airdrop operations may not be feasible during conditions of strong or gusty surface winds.** The JFC, based on recommendations by the supported commander and the AFCC, may accept the high risk, cancel, or postpone the operation because of excessive wind velocity on the DZ.

(3) **Drop Altitudes.** **The airborne force commander and airlift mission commander establish minimum altitudes for airdropping personnel and materiel IAW established criteria.** Minimum altitudes for airdrop operations are based on the operational requirements of the personnel and cargo airdrop systems used. In a high-risk, high-threat environment, survivability of airlift aircraft may require dropping parachutists and equipment at the lowest possible altitude. However, if the threat situation permits, aircraft performing normal low-altitude, low-velocity airdrop operations should drop above the minimum altitude to increase load survivability. Higher altitudes increase load time under canopy and allow more time for stabilization of parachute malfunctions.

(4) **Drop Zone Size and Selection.** **The JFC determines the general area for the airborne operation. Factors influencing DZ selection are:**

- (a) Physical characteristics of available DZs and surrounding areas;
- (b) Threat assessment;
- (c) Method of air delivery;
- (d) Number of airdrop loads or personnel; and
- (e) Length of the desirable dispersion pattern.

(5) **Subordinate ground commanders determine specific grid coordinates and grid reference** being used and pass these to the appropriate C2 node. During exercises and operations, DZ size and selection criteria are the joint responsibility of the supporting and supported commanders. **The supported ground commander makes the final decision** to accept use of the DZ. For other than Air Force unilateral airdrops, the ground commander may waive normal minimum training DZ sizes on a “by exception” basis. For the most efficient use of the DZ, separate or multiple points of impact should be used for equipment and personnel. **If the DZ is too small for the delivery** of a full aircraft load of parachutists, the **number of parachutists may be reduced, multiple DZs may be used** for one aircraft load, or aircraft may employ **multiple run-in procedures,**



Mass airdrop of forces requires large, unobstructed drop zone areas from which the forces can affect a rapid assembly and reorganization.

commonly referred to as “racetracks.” Use of the latter tactic, however, increases risk of adversary action.

(6) **Drop Zone Run-in Heading.** The ground force commander must evaluate the risk to personnel and property when selecting the run-in heading.

(7) **Drop Zone Markings.** DZ markings should be consistent with the threat situation. **Clear markings facilitate successful visual acquisition and authentication of the DZ**, increasing the probability of success. DZs are normally marked with a raised angle marker, marker panels, omnidirectional visible lighting systems, or electronic navigational aids. Virtually any type of overt or covert lighting or visual marking system is acceptable if all participating units are briefed and concur in its use. Other **day markings** or visual acquisition devices include, but are not limited to, colored smoke, mirrors, or any reflective or contrasting marker panel, such as a space blanket. In some cases geographical points may be used. **Night markings** or acquisition aids may include a light gun, flares, fire or fire pots, railroad fuses, flashlights, and chemical lights. STTs or drop zone controllers (DZCs) may also use specialized clandestine infrared lighting systems. **Electronic markings** may be used for either day or night operations. A verbal initiated release system may be used with **no markings**. Airlift crews may be called upon to conduct airdrop operations on an unmarked, blind DZ.

h. **Drop Zone Command and Control.** The Air Force DZC represents the appropriate commander as provided in the mission directive. The DZC observes and evaluates all factors that may adversely affect the safety of the operation and ensures transmission of weather information when required. The DZC is normally a USAF special tactics (ST) CCT. ST controllers are authorized to control all airdrops for any US

or allied military force. Qualified AMLOs may perform DZC duties during joint and unilateral airdrops.

i. **Supported Service Drop Zone Safety Officer (DZSO) and DZST Functions.** During training operations, the airdropped force furnishes a DZSO. During operations when the STT is not present, the supported Service provides a DZST. DZST-controlled missions must have a qualified drop zone support team leader (DZSTL) in charge of DZ operations. DZSTLs are qualified and operate IAW *Memorandum of Agreement (MOA) Airdrop Operations Without Air Force Special Operations Command Special Tactics Team Personnel* and unit standard operating procedures implementing this MOA.

j. **Drop Zone Sequencing and Separation of Personnel and Equipment.** Separation times between personnel and equipment and the sequence of the drop are important considerations in an airdrop mission. Terrain and threat assessment dictate whether personnel or equipment are airdropped first. Combination drops occur when parachutists exit from the cargo ramp immediately after release of equipment. Equipment and personnel can also be dropped from separate aircraft on the same DZ simultaneously if equipment loads are sufficiently separated to provide adequate clearance for personnel. However, such a COA requires the concurrence of the supporting and supported commanders.

6. Planning Considerations for Airborne Assaults and Follow-on Airland Operations

a. **Planning airlift operations is a complicated process involving a few basic principles and numerous interdependent considerations. Service components must facilitate their airlift movement process.** This responsibility includes performing and arranging to:

- (1) Bring units and materiel to departure terminals;
- (2) Prepare those resources for air movement;
- (3) Provide support services (meals, medical, billeting, and other appropriate services) to transient and arriving units;
- (4) Receive and transport units and materiel from arrival terminals; and
- (5) Prepare all manifests, movement documents, and reports related to the actual movement.

b. **The purpose of these actions is to move component resources expeditiously, with minimum expenditure of resources and minimum exposure to hostile actions. Responsibility for controlling movements does not equate to command authority over airlift forces.** Studies, concepts, and OPLANs for employment of forces are prepared to cover possible missions and locations. Detailed planning for specific operations is performed by the participating component commands and subordinate

commands; to enhance efficiency, all participants should make maximum use of existing plans.

c. Principles for Airlift Planning. Consider these principles when planning for airlift movements:

(1) Minimize movement congestion and vulnerability by reducing the time units and materiel spend en masse at forward terminals and synchronize the positioning of units and material with airlift capability.

(2) Maximize the productivity and survivability of the airlift fleet by minimizing aircraft ground times at forward locations.

(3) Minimize sortie requirements by repackaging all materiel for air shipment; ensuring combat personnel travel with their maximum authorized individual loads of rations, ammunition, or other personal protective equipment; and splitting units into air-essential and surface movement echelons (whenever possible).

(4) Ensure personnel are adequately fed, rested, and protected at en route stops.

(5) Deploy personnel and communications equipment necessary to track and report on all air movements.

d. Different missions will require the use of different airlift assets. The Services possess a variety of fixed- and rotary-wing platforms capable of performing the air mobility role.

(1) The main advantage of fixed-wing aircraft over ground surface transportation modes is that they combine speed (250 to 500 knots, depending on aircraft type) and the ability to carry substantial to very large cargo capacities (7 to over 100 tons, also depending on aircraft type). This provides the capability to quickly move large amounts of personnel and materiel over greater distances. Airlift can also be employed to reduce the need for ground convoy operations that are vulnerable to enemy attack. The combination of their speed and tactics also enhances their survivability, while their range generally allows them to be based in relatively secure and logistically easier-to-support rear areas. The main disadvantages are their terminal requirements, which can limit their flexibility, and their size and limited maneuverability, which increases their vulnerability to ground and air attack. These disadvantages are particularly pronounced for the larger transports. Under most circumstances smaller transports, such as the C-130, are usually suited to a sustained intratheater airlift role, and the larger transports are best suited for the intertheater airlift role.

(2) In a CBRN-threat environment, plan to avoid contaminating air mobility aircraft, thus preserving limited assets for future use. Avoid airland operations into contaminated airfields by airdropping critical supplies and equipment or shifting

deliveries to uncontaminated airfields (consider use of austere LZs such as highway landing strips and dirt and/or gravel LZ construction).

(3) The Services and USSOCOM also operate rotary-wing and tiltrotor aircraft, such as the UH-1, H-3, H-60, V-22, CH-46, CH-47, and CH-53, which possess intrinsic intratheater airlift capabilities. Rotary-wing and tiltrotor aircraft can be useful for intratheater purposes for the following reasons:

(a) Their ability to operate at smaller undeveloped LZs increases their flexibility and often reduces ground-transit times for their loads;

(b) Their ability to transport personnel and materiel to and from forward-deployed ships increases expeditionary flexibility;

(c) Their terrain-hugging flight capabilities enhance their survivability in certain threat situations; and

(d) Their ability to sling-load some types of materiel allows them to pick up and deliver loads with minimal ground-handling delays.

(4) However, in relation to fixed-wing aircraft, the inherent aerodynamic inefficiencies of rotary-wing aircraft sharply restrict payload and range capabilities. In addition, their mechanical characteristics give them a high ratio of support-man-hours to flight-hours. Consequently, rotary-winged assets:

(a) Usually are not suited to sustained airlift operations beyond about 50-100 nautical miles from a refueling point;

(b) Usually require more maintenance hours per hour of flight time; and

(c) Are usually based at LZs not well suited to large-scale, sustained fixed-wing airlift operations.

(5) For these reasons, airlift-capable rotary-wing assets are normally assigned as organic combat and combat support elements to surface combat organizations. Thus, in deciding to use the capabilities of any organic rotary-wing assets to support the intratheater airlift effort, the JFC should consider their vital importance to their assigned organizations, as well as their utility to specific airlift missions. Intratheater airlift requirements that might best be filled by rotary-wing aircraft could include large requirement, short-distance operations, such as resupplying ships at sea and unloading ships at undeveloped water terminals, or routine small-payload operations to sites not collocated with LZs, such as daily courier flights to deployed air defense units.

Additional information on air assault operations can be found in JP 3-18, Joint Forcible Entry Operations.

Intentionally Blank

CHAPTER V AIR REFUELING

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

Lt John Richter, US Army Air Service Pilot in WWI

1. General

a. AR allows air assets to rapidly reach any trouble spot around the world with less dependence on forward staging bases. Furthermore, AR significantly expands the force options available to a commander by increasing the range, payload, loiter time, and flexibility of other aircraft.

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

c. **Although other Services and nations maintain some organic AR capability, the Air Force possesses the overwhelming preponderance of common-user AR assets.** With boom and drogue capability, these assets are capable of refueling most Air Force, Navy, and Marine Corps aircraft, and can accommodate most foreign aircraft.

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

e. AR permits aircraft to operate beyond their unrefueled ranges and permits larger takeoff payloads and added endurance. By enabling their payload to be maximized, the combat potential of receiver aircraft is significantly increased.

f. **Force Extension.** Force extension is the AR of one tanker by another and is the most efficient means to provide deployment support, given a limited number of tanker aircraft. 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, dual-role tankers may require force extension.

Not all tankers are refuelable. All KC-10s are refuelable and a small number of KC-135s are equipped as receivers and therefore can be force extended. Whenever possible, force extension missions should be planned along air bridge routes to use tankers supporting air bridge movements. This capability can be used whenever the fuel requirements of the escorting tanker and its receivers exceed the tanker's takeoff fuel capacity.



Force extension significantly increases a tanker's range.

g. Components of the AR Force. The majority of the Air Force's AR assets are assigned to Air Force Reserve and Air National Guard units.

(1) **Active Duty Forces.** Similar to airlift forces, CDRUSTRANSCOM has COCOM of most CONUS-based active duty AR forces and delegates OPCON to AMC. Similarly, theater-assigned AR forces come under COCOM of their GCC (e.g., Commander, USEUCOM or Commander, US Pacific Command) and under OPCON of the theater COMAFFOR (e.g., United States Air Forces Europe [USAFE] or Pacific Air Forces [PACAF]). These forces perform core and specialized AR missions and are readily available for tasking and deployment. In addition to the Air Force, the Navy, and Marine Corps possess some organic AR resources, which may also augment joint AR operations.

(2) **Air Force Reserve and Air National Guard Forces.** During crises, volunteers or activated AFRC and/or ANG units augment the active duty AR force, providing substantial increases in AR capacity. AFRC and ANG personnel train to the same standards as the active duty AR force. Peacetime access to AFRC and ANG forces is provided through a system of volunteerism. Major contingencies, however, normally require activation of AFRC and/or ANG units.



Air refueling missions in US Central Command's area of responsibility refuel almost 74,000 aircraft per year.

2. Air Refueling Operations

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

a. **Intertheater AR.** Intertheater AR supports the long-range movement of combat and combat support aircraft between theaters, or between theaters and JOAs. Intertheater AR operations also support global strike missions and airlift assets in an air bridge. AR enables deploying aircraft to fly nonstop to their destination, reducing closure time.

b. **Intratheater AR.** Intratheater AR supports operations within a CCDR's AOR by extending the range, payload, and endurance of combat and combat support assets. Both theater-assigned and CDRUSTRANSCOM-assigned AR aircraft can perform these operations. When CDRUSTRANSCOM-assigned AR forces participate in these operations, they are typically attached to the GCC who exercises OPCON over these forces through the COMAFFOR. Although the primary purpose is to refuel combat air forces operating within the theater, consideration should be given to the best utilization of the tanker fleet to meet the President's and SecDef's objectives.

c. **Anchor Areas and AR Tracks.** AR is normally conducted in one of two ways: in an anchor area or along an AR track. While AR is normally conducted in friendly airspace, missions may require operations over hostile territory and in contested airspace. Anchor areas and tracks may place tankers in an extremely vulnerable position and should be limited to friendly airspace when possible. AR missions over hostile territory should be conducted only after careful risk considerations and when at least regional air superiority is achieved.

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

(2) An **AR track** is a published track or precoordinated series of navigation points which can be located anywhere throughout the world. To maximize effectiveness, AR tracks will normally be placed along the receiver's route of flight. However, AR track location(s) must sometimes be balanced with tanker availability and basing to develop an integrated AR plan making the best use of limited receiver and tanker assets overall. AR along an AR track is the preferred method for intertheater operations.

(3) The tanker rendezvous (RV) can be accomplished in multiple ways. For more information about RV procedures, see Allied Tactical Publication (ATP)-56, *Air to Air Refueling*.

d. **Tanker Formation Refueling.** Many missions require tankers to refuel their receivers while in a multiple-ship formation. Mission requirements may dictate several different types of tankers (boom and/or drogue equipped) and multiple receiver types (from a variety of nations) in the same formation. Formation refueling is one of the most demanding operations due to the number of aircraft in a confined block of airspace and because receiver aircraft may be constantly joining and leaving the formation. It also brings in additional planning factors and requires a significant amount of coordination to ensure smooth, safe execution of the mission.

e. **Joint and Multinational Operations.** Joint and multinational operations require teamwork, unity of effort, and principles that are fundamental to AR. When working with other Services and nations, there is a potential for differences in capabilities, procedures, and terminology, which may cause misunderstandings and confusion. Such operations therefore require a standard set of tactics, terminology, and procedures.

(1) For example, ATP-56, *Air to Air Refueling*, was published to standardize operating procedures and enhance interoperability among North Atlantic Treaty Organization member nations possessing AR assets. While the detailed procedures will depend on aircraft type, mode of employment, and national requirements, many allies should be able to achieve sufficient commonality so that a combined set of procedures can be developed. Commanders of a multinational force should agree as soon as possible on a common set of doctrine, tactics, and procedures for particular operations.

(2) In addition, airspace may be a primary limitation to AR operations. Standardizing multinational cell formation procedures allows a variety of air refueling assets to operate in compressed airspace. This is particularly important when large numbers of tankers may be refueling multiple receivers or formations of receivers. To generate the maximum combat airpower in multinational operations, all military

capabilities must be integrated to the fullest extent. Multinational exercises are a key component to common doctrine and interoperability. These exercises should be used as often as feasible to foster a common understanding. The doctrine and procedures established by the multinational commander will provide additional flexibility, deployability, and sustainability in multinational air operations.

3. Air Refueling Missions

The basic missions of AR. AR is a critical force multiplier across the full range of global and theater employment scenarios. Tankers directly enhance the operational flexibility of US and allied/coalition strike, support, and surveillance aircraft. AR missions depicted in Figure V-1 represent the broad, fundamental, and continuing activities of the AR system. In the same manner, **the nearly unlimited flight endurance provided by tanker assets is an indispensable component of the US strategic airborne command post concept.** It provides the President and SecDef the ability to continue to direct military action from an airborne platform-regardless of the situation.

a. **Global Strike Support.** AR assets are a critical enabler for global strike operations (conventional or nuclear). For example, AR significantly increases the range and endurance of bomber aircraft, directly enhancing their flexibility to strike at distant targets and maximizing their operational utility for warfighter mission requirements. Tanker availability can also be critical to overall mission success through support of a wide variety of support package aircraft refueling requirements. In addition, AR can mitigate operational risk for strike or support aircraft by decreasing reliance on OCONUS/forward basing locations. AR is key to US ability to rapidly strike targets in distant locations and recover to safe areas. The ability to perform long-range strike missions from CONUS is particularly crucial.



Figure V-1. Basic Air Refueling Missions

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

c. **Aircraft Deployment Support.** AR assets can extend the range of deploying combat and combat support aircraft, allowing them to fly nonstop to an AOR or JOA. This capability increases the deterrent effect of CONUS-based forces and allows a rapid response to regional crises. The capability of air assets to fly nonstop to a theater may eliminate the need to obtain landing or overflight rights from foreign countries that may want to remain neutral in a given conflict. Successful execution of the Air Force's aerospace expeditionary force concept, for example, is heavily dependent on the capabilities rendered through deployment support. Peacetime deployments of forces in support of rotations, exercises, or aircraft movements for logistic purposes are called CORONETs. CORONETs normally have long lead times for planning, tasking, and execution. Planners should use this time to maximize the overall efficiency of the movement for both receivers and tankers, while remembering their purpose is safe and effective movement of the receivers.

d. **Theater Support to Combat Air Forces.** Intratheater AR enables fighter aircraft to increase their range, endurance, and flexibility. During a combat operation, the highest priority for intratheater AR forces is normally supporting combat and combat support aircraft executing air operations. This is especially true during the initial phases of a conflict. Theater-based AR assets bolster the security of combat and combat support air assets by allowing them to be based beyond the range of adversary threats. AR increases the endurance of air combat support assets. Extending endurance reduces the number of sorties required, decreases ground support requirements at forward locations, and may reduce the number of aircraft deployed to an AOR.

(1) **AR allows combat aircraft to carry a larger payload on initial takeoff** by decreasing the amount of fuel carried in its tanks. Fuel necessary for mission range requirements is unloaded after takeoff on either pre-strike or post-strike refuelings. The ability to increase an aircraft's weapons load multiplies the combat force and combat efficiency of that aircraft.

(2) Operations ALLIED FORCE, OEF, and OIF have highlighted the importance of airspace required for AR, especially during combat support missions. A lack of AR airspace can limit the amount of combat and combat support sorties the JFACC is able to schedule and execute. Airspace planning for these operations include sufficient allowances for ingress/egress of both receivers and tankers and allow deconflicting aircraft operating at significantly different speeds. Experience in OEF and OIF shows that without sufficient airspace deconfliction, the greatest threat to friendly forces can be from mid-air collisions with our own forces.

(3) Tankers allocated for theater support may be called upon to provide AR support to air bridge operations. The DIRMOBFOR must judge the capabilities of, and requirements for, tankers assigned or attached to the theater to determine their ability to provide air bridge support. When air bridge support operations will adversely impact theater support operations, the COMAFFOR must consider the JFC's overall operation or campaign objectives (such as defeating an adversary force or compelling an adversary to surrender), not just operational objectives (such as air superiority or shutting down the adversary's C2 system) when deciding how to allocate tanker missions.

e. **Special Operations Support.** AR enables SOF to maintain a long-range operating capability. The Air Force maintains AR crews who are trained to air refuel fixed- and rotary-wing special operations aircraft. Successful mission completion requires special equipment, specialized crew training, and modified operational procedures.

f. **Other Associated AR Missions.** Additional taskings for AR aircraft include: emergency AR; airlift; AE; and combat search and rescue (CSAR).

(1) **Emergency AR.** Some AR aircraft may be kept on ground or airborne alert to provide short-notice support for airborne fuel emergencies. Fuel emergencies can result from missed refuelings, en route winds greater than planned, battle damage, or excessive time engaged with adversary aircraft or targets. While dedicated ground alert aircraft sometimes meet emergency AR requirements, excess fuel capacity of airborne tankers is another method of providing emergency AR capability. Putting more fuel in a tanker than is required to complete the mission, known as "tankering fuel," gives that aircraft an automatic, though limited, emergency refueling capability.

(a) **Intertheater Operations.** Whenever possible, intertheater missions should be planned either over, or in close proximity to, existing air bridge routes. This allows tankers positioned for air bridge support to also provide emergency AR support. When intertheater missions cannot be planned along air bridge routes and the mission is deemed important enough to provide emergency AR support, planners should use a combination of ground and airborne spare aircraft. Ground spare aircraft are maintained in various stages of readiness depending on mission requirements. Airborne spare aircraft consist of one or more tankers that accompany the AR formation, but do not participate in any ARs unless required to do so. No matter which option is used, the concepts must be adequately delineated in mission directives so tankers, receivers, and participating C2 elements are thoroughly familiar with procedures to be used in a fuel emergency.

(b) **Intratheater Operations.** The dynamic environment and quick tempo of intratheater operations provide a greater need for emergency AR support. The shorter distances involved and the larger number of available assets makes providing emergency AR support much easier to accomplish. The preferred method of providing emergency support is through a combination of ground and airborne aircraft.

1. Ground alert aircraft and crews primarily provide units with the capability to meet mission requirements when fuel emergencies occur due to battle damage or excessive time engaged with adversary aircraft or targets. 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. Ideally, ground spare aircraft should be capable of refueling drogue and boom type refueling on the same mission. Otherwise, units must maintain separate aircraft on ground alert, configured for each type of refueling. Ground alert tankers and crews can be dedicated solely to that function.

2. 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 AR reliability tankers should be used when assets are available. If a reliability tanker can also accept fuel, the capability is leveraged through extended endurance.

(2) **Airlift.** Refueling platforms act as augmentation to the airlift fleet. This capability is most important during deployment operations when airlift requirements are highest and requirements for theater support refuelings are the lowest. During contingencies, commanders should continually evaluate tanker allocations to airlift missions, weighing the loss of assets from traditional tanker missions against the benefits gained by a larger, augmented airlift fleet. This evaluation must consider the objectives of the entire joint operation or campaign and not just those of the Air Force component.

(a) Another key application of tanker aircraft in an airlift role occurs during tanker unit movements. Tanker units deploying to a theater or en route location will typically airlift their own support requirements under the integral tanker unit deployment concept. This allows tanker units to have key supplies and personnel on hand as soon as they arrive at their deployed location, and it relieves the air transportation system of at least a portion of their requirements.

(b) **Dual-Role Tanker.** Tankers perform the dual-role function when they accomplish airlift and AR on the same mission. A dual-role mission may be as simple as carrying opportune cargo or passengers on a routine intertheater AR mission, or it may be as complex as a fighter unit move. Dual-role operations maximize the full capabilities of tanker aircraft. Tankers forward position to a deploying unit's location to upload cargo, personnel, and equipment needed to ensure that the ferried unit can begin immediate operations once at its destination. Once airborne, tankers escort deploying fighters to their final destination, refueling them along the way. Upon arrival, the tankers download their cargo and passengers who may immediately reconstitute and launch the deployed fighters. This allows arriving aircraft to be ready for follow-on missions quickly, simplifying required coordination for airlift support of deployments and reducing the number of dedicated airlift aircraft required to support an operation.

(3) **Aeromedical Evacuation.** KC-135 tankers can be used for AE when crewed by a fully qualified and current AE crew using AE equipment tested/modified for use on the KC-135.

(4) **Combat Search and Rescue.** Tanker aircraft provide a limited capability to assist CSAR operations as a communications and coordination link between airborne and ground-based elements. This capability derives from the tanker's long endurance characteristics and organic communications equipment. In the case of a downed fighter, the wingman will attempt to remain on scene to ascertain the downed crewmen's status and provide protection until CSAR forces arrive. During this process, the tanker will normally remain at altitude, relaying information where communications connectivity is easiest, and will refuel on scene forces as required. During Operation ALLIED FORCE, KC-135s were diverted to the scene of a downed airman. Once on the scene tankers refueled two A-10 aircraft that were providing close air support for the rescue effort, AWACS aircraft providing C2 for the operation, and CSAR aircraft affecting the rescue.

4. Planning Air Refueling Operations

a. While many considerations for air mobility forces are the same for airlift and AR assets, there are some specific considerations unique to tanker operations. These include the following:

(1) **Boom Versus Drogue.** If planned operations will include a significant number of receivers requiring drogue type refueling intermixed with receivers requiring boom-type refueling, planners should consider using tankers capable of both types of refueling on the same mission.

(2) **Total Offload Versus Booms in the Air.** Planners must consider whether planned operations will emphasize total offload capability for only a few receivers or a rapid refueling capability for multiple receivers. If total offload capability is more important (such as for large aircraft), fewer numbers of tankers with larger fuel loads should be planned. **If the mission emphasis is on frequent, rapid refuelings to multiple receivers (such as multiple fighter strike packages), it is more effective to use a larger number of tankers maximizing the number of available "booms in the air."**

b. **Daily Allocation.** At the operational level, force allocation consists of translating the JFC's air apportionment decisions into total number of AR sorties, by aircraft type, available for each operation or task. AR assets are matched against receivers in the ATO based on the JFC's air apportionment guidance but tempered by changing conditions. At this level, the most important decisions are those that place tanker aircraft types against receiver requirements, while optimizing the use of those assets.

c. **AR capability can be increased without increasing the number or size of tanker aircraft by carefully matching tanker aircraft types against receiver mission**

requirements. This involves greater use of refuelable reliability tankers, assigning individual tankers to multiple receivers or receiver packages, and ensuring receiver AR requests accurately reflect their mission requirements. The considerations for daily allocation decisions are much the same as for contingency allocations as discussed above. When developing daily AR allocations, planners must consider boom versus drogue requirements, emphasis on total offload versus booms in the air, and SOF requirements.

d. Airspace and Air Traffic Control. Many countries have specific restrictions on AR operations conducted within their sovereign airspace. Planners need to be aware of potential restrictions.

e. Altitude Reservation (ALTRV). Most intertheater AR operations require an ALTRV to reserve AR airspace. ALTRVs must be submitted IAW rules of the International Civil Aviation Organization (ICAO) in international airspace and with the ICAO and the HN rules when conducted over territorial airspace. Planners must ensure ALTRV approval is received prior to conducting AR operations. ALTRVs do not relieve aircrews of the requirement to obtain diplomatic clearances or to file flight plans.

f. AR Airspace. Most intratheater AR is conducted in airspace specifically designated for AR. For peacetime operations, AR airspace is published in flight information publications with boundaries, altitudes, and communications frequencies agreed to by the ATC authorities. During a contingency, AR airspace close to the adversary will change frequently, and its altitudes and communications frequencies will be classified to avoid predictability. Routing to and from the AR airspace will also change in response to changes in air operations and adversary threats to friendly forces.

g. Communications Capabilities and Emissions Control. AR operations are highly dependent on both air-to-air and air-to-ground communications. Throughout AR operations, tankers must be able to communicate with their receivers, AWACS controllers, local air traffic control, and other tankers in formation and maintain at least a listening watch on designated high frequency channels. Mission requirements normally dictate that tankers maintain positive contact on most all of these frequencies simultaneously. Combat or politically sensitive missions may require both the tanker and receiver to exercise emission control (EMCON) procedures. These procedures minimize an aircraft's transmission of electronic signals (communication and navigation) to reduce the amount of information other forces can gather. Use of EMCON entails bringing two aircraft together, in the same airspace with an intentionally degraded communication and navigation capability. To be successful in refueling under EMCON conditions, standardized procedures must be developed between tanker and receiver(s). The procedures must be regularly exercised by both tanker and receiver aircrews and they must be thoroughly briefed on the procedures to be used prior to each mission.

h. Conditions. AR forces and their receivers must be capable of conducting AR operations at night and under adverse weather conditions. Depending on the operation, this may require precision navigation equipment and night-vision capability.

CHAPTER VI AIR MOBILITY SUPPORT

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

**General Henry “Hap” Arnold
General of the Air Force (1949)**

1. General

The MAF’s three core functions are airlift, AR, and air mobility support/GAMSS. Successful employment of the airlift and AR force is contingent upon establishing and maintaining a GAMSS force that enables aerial deployment, employment, sustainment, and redeployment of US forces throughout the range of military operations. Specifically, air mobility support forces provide the responsive, worldwide foundation for airlift and AR operations. This force is divided between USTRANSCOM, 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 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 exist. 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 pre-positioning 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 deployment.

a. 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 GAMSS to provide rapid global air mobility. The mobile forces of 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.

b. 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.

2. Air Mobility Command Affiliated Contingency Load Planning Program

a. The AMC Affiliated Contingency Load Planning (ACLP) program assists in fostering an informed, professional, and cooperative management environment for users of military airlift. The AMC ACLP is designed to develop a mutual understanding of air

mobility requirements and capabilities for AMC aligned units. This program provides affiliation classroom training, airlift load planner certification, and aligned unit driven contingency load planning.

b. Limited airlift capability combined with the rapid response required for global mobility, puts increased responsibilities on the airlift user. In order to assist in becoming more self-sufficient when preparing for air movement, the AMC ACLP program was devised to increase management awareness and involvement, provide technical information, quality assistance, and feedback to airlift customers.

c. This relationship, once aligned and established at all working levels, promotes this concept through staff visits, formal classroom training, staff planning validation, and joint participation in mobility operations. If assistance is required for rapid global mobility purposes, this aligned relationship provides the AMC airlift customer timely mobility expertise through the contingency load planning team. This two man planning team consists of highly qualified load planning specialists who have first hand knowledge of an aligned unit's specific mobility requirements.

d. Preplanning, early identification of air mobility requirements and identification of potential problem areas help to ensure a smooth flow of cargo, personnel, and aircraft. Program objectives are directed toward one goal: improving deployment readiness for affiliated units. This is accomplished by teaching airlift users how to plan, prepare, and quickly deploy by air in an efficient and safe manner with minimal Air Force assistance. **NOTE: This program does not provide for hazardous cargo certification training, automated load planning system, or training in AMC C2 procedures.**

e. The objective of ACLP is to establish a relationship between airlift managers and using agencies to optimize airlift planning, utilization, and mission capabilities and requirements by:

(1) Providing a joint training program to enhance planning and execution, ensuring rapid and efficient movement by air.

(2) Reducing user reliance on air mobility mission support.

(3) Providing a contingency load planning team for AMC aligned units to assist in rapid global mobility requirements.

3. Core Functions of Air Mobility Support

The core functions provided by GAMSS are C2, aerial port, and maintenance. While the fixed GAMSS functions are robust, the deployable assets are designed to be temporary in nature with a planned redeployment or replacement. En route locations are normally tasked to provide these services; however, 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.

a. **C2.** Air mobility support operations encompass both global/functional support as well as focused regional support. In meeting the requirements of both USTRANSCOM and the GCCs, air mobility forces performing intratheater and intertheater missions coordinate with one another to provide seamless service to the supported commander. USTRANSCOM coordinates and synchronizes the JDDE to achieve unity of effort across all movement segments. Normally USTRANSCOM forces operate under a support relationship, with OPCON remaining with USTRANSCOM. SecDef must approve transfer of forces. When GAMSS forces deploy to a GCC's AOR, command relationships are 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.

(1) Whether OPCON is maintained by Commander, AMC or a GCC's COMAFFOR, GAMSS forces usually provide initial C2 to higher headquarters for deploying forces through organic, deployable C2 systems. In addition, they set up stand-alone C2 operations for airlift operations. GAMSS forces provide their own unique C2 to accurately plan, flow, and track air movements and provide ITV of equipment and passengers. It is imperative GAMSS personnel be trained in setting up and operating all C2 systems supporting operations since base opening and deployed operations rely upon it. C2 requirements may include 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 618th TACC, while theater assigned support forces normally report to their theater AOC.

(2) Timely exchange of information within, between, and among GAMSS components is critical to mobility operations. **This includes the following:**

(a) Geospatial information (formerly mapping, charting, and geodesy) and imagery requirements.

(b) Airspace coordination and management requirements.

(c) Restrictions imposed at airfields.

(d) CRG, CRE, CRT, STT, AMLO, and ground force assault team requirements.

(e) Unique requirements such as security and command, control, and communications for nuclear weapons.

- (f) Asset ITV.
- (g) Cargo, hazardous materials, passengers, and patient information.
- (h) Weather information.
- (i) JIPOE products and exchange of current and early warning intelligence.

(3) One of the most important features of 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 GAMSS relies significantly on integration of ITV data into a comprehensive picture. Without such integration, the ability to achieve rapid global mobility is compromised. NOTE: In selected cases, Air Force Special Operations Command special tactics teams can provide a limited initial C2 capability, both traffic control and aircraft reporting.

(4) Various computer and communications systems along with their associated databases and peripheral equipment are included as elements of GAMSS.

b. **Aerial Port.** 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 movement manifests and ITV data provided electronically by the moving unit. 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.

c. **Maintenance**

(1) GAMSS maintenance support is based on resources of people, parts, and equipment leveraged from CONUS and OCONUS units. Planners and units receiving maintenance augmentation from GAMSS forces should consider supplementing maintenance capability as soon as practical to ensure sustained operations. Designed primarily to support mobility aircraft operations, deployable GAMSS maintenance units are not intended to provide sustained maintenance.



Deployed aerial port operations.

(2) Deployable units consist of maintenance contingency support elements (CSEs) and maintenance recovery teams (MRTs). Maintenance CSE packages are tasked to established locations for a specified amount of time to provide limited support for specific mission(s) flow. CSEs are normally deployed as part of a CRG/CRE to set up or work from an austere location. Their capability is essentially limited to basic ground handling and routine servicing operations. MRTs are small teams consisting of specific maintenance specialties tasked to provide aircraft troubleshooting and repair for a specific aircraft requirement.

4. 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.

a. **Expeditionary Mobility Task Force.** Expeditionary mobility task force (EMTF) encompasses fixed and deployable capabilities and are sized, manned, and equipped to support common-user air mobility operations. The EMTF fixed and deployable elements are listed below.

(1) **EMTF fixed assets** are sized, manned, and equipped to support peacetime common-user air mobility operation. Fixed assets consist of the following:

(a) **Air Mobility Operations Wings (AMOWs).** AMOWs are located overseas and provide a single commander distinct mission capability with the appropriate level of authority to ensure response time and agility to meet changing theater requirements and support the CCDR.

(b) **Air Mobility Operations Groups (AMOGs).** AMOGs are located overseas and composed of air mobility squadrons (AMSs). AMOGs formulate plans, establish procedures, and direct the administration of their subordinate AMS, operating locations, and detached units in support of operations. The AMOG provides logistics, intelligence, and air transportation planning to meet operational requirements.

(c) **Air Mobility Squadrons (AMSs).** AMSs are situated at key overseas en route locations to operate air terminal facilities in support of the 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, which serves as the C2 conduit to the 618th TACC for air mobility mission tracking.

(d) **Contingency Response Wings (CRWs).** AMC has two CRWs. Each is organized, trained, and equipped to produce three deployable CRGs. 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 contingency support elements of the GAMSS providing C2, aircraft maintenance, and aerial port personnel. Additionally, AMLOs 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. The C2 of GAMSS elements follows the normal C2 pattern of air mobility forces. GAMSS forces either remain under their own CCDR's air component or, if they cross-theater boundaries, are presented either in support or are attached, at the discretion of the SecDef.

(2) **EMTF deployable assets** are designed for a decreased transportation and logistics footprint and are not designed as long-term assets. Training for members of these deployable assets consists of in-depth CBRN and weapons training. These assets are equipped and manned to support the contingency and/or wartime air mobility operation. The deployable assets consist of the:

(a) **Contingency Response Group.** CRGs deploy in order to assess, open, and initially operate airfields. The groups consist of a standardized force module dedicated to the airfield opening task. This module includes a tailored selection of all forces needed after seizure, or handoff from seizure forces, to assess 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. To ensure continuity of operations, CRGs should coordinate planning and agreements through the theater COMAFFOR with the JFACC staff.

(b) **Contingency Response Elements.** CREs are mobile organizations that are comprised of portions of a CRG. CREs are responsible for providing continuous onsite air mobility operations management. Commanded by a commissioned officer, CREs deploy to provide air mobility mission support when C2, mission reporting, and/or other support functions at the destination do not meet operational requirements. In addition to providing C2 and communications capability, CREs provide aerial port and quick-turn maintenance services capable of supporting a maximum (aircraft) on ground

(MOG) of two for 24 hours. Additional CSEs, such as weather, medical, and intelligence services, can be added as necessary. CREs' size is based on projected operations flow and local conditions.

(c) **Contingency Support Team (CST).** A CST, which is also part of a CRG, performs the same functions as a CRE -- aerial port, maintenance, and C2, but on a smaller scale. CSTs are normally led by a noncommissioned officer and provide a level of C2, aerial port, and maintenance services capable of supporting a MOG of one for 12 hours.

(d) **Air Mobility Operations Squadron (AMOS).** 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.

(e) **US Navy Expeditionary Air Cargo Companies.** Navy's expeditionary air cargo companies are elements embedded in both active duty and reserve component Navy cargo handling battalions. They may augment the US Air Force's aerial port operators or conduct independent aerial port operations. They interface with Navy fleet logistics and AMC's air operations.

b. GAMSS capabilities include:

- (1) **C2**
- (2) **Aerial port**
- (3) **Maintenance**
- (4) **Other contingency support elements**

(a) **Airfield Survey Team.** 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.

(b) **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 airlift officers with experience in combat tactics and assigned duties supporting US Army and Marine Corps units.

(c) **Airlift Control Flight (ALCF).** ALCFs are part of the GAMSS that are gained by AMC. Personnel deployed from the ALCFs perform the core C2 functions of a CRE. Additional capability beyond C2 are sourced and tasked elsewhere (typically from the CRWs or various mobility wings).

(d) **Mobile Aeromedical Staging Facility (MASF).** A MASF is a deployable asset for temporary staging, casualty care, and administration support during contingency operations. It is located near runways or taxiways of forward airhead, operating base used by tactical airlift or designated transportation hubs. This mission is to support the tactical interface between service military treatment facilities and medical evacuation. MASF holding capability is 2-6 hours for patients entering the patient movement system. The MASF requires logistical and administrative support from the supporting base. 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. MASFs do not have physicians.

(e) **Security Forces.** Air mobility missions operate in areas where a threat may exist. To mitigate these threats and provide limited aircraft security, AMC maintains deployable security forces. PR teams are comprised of individuals trained and equipped to provide protection of the aircraft when transiting high-risk areas. These forces may be augmented by CDR-controlled fly-away security teams, who are trained to meet requirements to detect, deter, and counter threats to personnel and aircraft at deployed locations by performing close-in aircraft security and advising aircrew on dealing with detainee personnel. These forces may be part of an airfield opening effort, but do not provide sustained primary airfield security.

5. Airfield Opening and Global Air Mobility Support System

a. GAMSS forces will likely be the first Air Force presence on an expeditionary airfield regardless of how the airfield is gained (e.g., seizure or acceptance from a host nation) or which follow-on US or multinational entity will operate the airfield. When opening an airfield, 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 situation dependent but follow normal guidance for OPCON, TACON, and administrative control. 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/airfield 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.

b. Air Mobility Support Planning

(1) Successful deployment and employment of forces and materiel depend upon timely and accurate planning of all US and coalition supported and supporting components. 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 successful accomplishment of air mobility operations hinges on this support.

(2) These forward-deployed forces may augment the JDDOC in managing the deployment of intertheater and intratheater assets for the supported CCDRs and, when a contingency is complete, the redeployment of 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 GCC'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.

c. **Fundamental Considerations.** Within the overall mobility support-planning framework, there are four fundamental considerations: task, threat, core capabilities, and timing.

(1) **Task.** Although specific circumstances and deployed locations may vary and the GAMSS composition will change, the operational task and purpose of the GAMSS remains 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 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, GAMSS forces are the backbone of this power projection.

(2) **Threat.** CCDRs should always be alert to the possible threats facing GAMSS forces. This includes noncombat 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, medical planners, interagency partners, and in-country diplomatic and defense liaison personnel. A provision for force protection is required for any operation. The threat assessment will determine the level of force protection required. It 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 objectives of the JFC. Although GAMSS forces are trained to protect themselves against both conventional and CBRN weapons, they should be augmented by a dedicated force protection element whenever the assessed threat affects operational success.

(3) **Core capabilities.** The capabilities of the trained GAMSS forces are a 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 C2, aerial port, and maintenance capability.

(4) **Timing.** The timing of force movements is a critical consideration. GAMSS forces usually preposition upon receipt of the CJCS warning/alert order. This early positioning enables effective airlift and aerial refueling operations. GAMSS forces are sequenced early in the TPFDD or DEPORD planning. For large-scale mobility operations, this early integration in the deployment flow ensures APODs are prepared to receive cargo and passengers.

d. **Planning Considerations.** There are additional planning considerations impacting throughput and affecting operation or campaign objectives.

(1) **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 footprint 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 HN may limit the number of foreign personnel on its soil, making the need for reachback support even more crucial. Paring and tailoring of forces based on the in-place infrastructure can also reduce the footprint. This reduction allows airlift assets to be reassigned for other priority taskings.

(2) **Base Operating Support (BOS) also known as Expeditionary Combat Support (ECS).** When GAMSS forces are deployed, BOS/ECS must be considered. Because GAMSS forces deploy with limited or no BOS/ECS assets, the supported commander must meet additional requirements. If tasked to augment theater-assigned BOS/ECS personnel, the GAMSS force commander can plan for and deploy with additional support personnel.

(3) **Host-Nation Support.** 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 finite transportation capacity will be wasted on cargo already available at the deployed location. 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.

(4) **Diplomatic Clearances.** Diplomatic clearances are crucial planning considerations. These types of clearances include aircraft overflight and landing rights, communications connection approval, personnel visas, and other entry requirements. No TPFDD, DEPORD flow, or sustainment channel mission 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.

Intentionally Blank

APPENDIX A REFERENCES

The development of JP 3-17 is based upon the following primary references.

1. General

- a. National Security Decision Directive Number 280, 24 June 1987, *National Airlift Policy*.
- b. Executive Order 12148, 20 July 1979, *Federal Emergency Management* as amended.

2. Department of Defense Publications

- a. DOD Directive 4500.09E, *Transportation and Traffic Management*.
- b. DOD Directive 4500.43, *Operational Support Airlift*.
- c. DOD Directive 5100.1, *Functions of the Department of Defense and Its Major Components*.
- d. DOD Directive 5154.06, *Armed Service Medical Regulating*.
- e. DOD Directive 5158.04, *United States Transportation Command*.
- f. *Defense Transportation Regulation (DTR) 4500.9-R*.
- g. DOD 4515.13-R, *Air Transportation Eligibility*.
- h. *Unified Command Plan*.

3. Chairman of the Joint Chiefs of Staff Publications

- a. CJCS Instruction 5120.02A, *Joint Doctrine Development System*.
- b. CJCS Manual (CJCSM) 3122.01A, *Joint Operation Planning and Execution System Volume I: (Planning Policies and Procedures)*.
- c. CJCSM 3122.03C, *Joint Operation Planning and Execution System Volume II: (Planning Formats)*.
- d. CJCSM 3122.04, *Joint Operation Planning and Execution System Volume II: (Supplemental Planning and Execution Formats and Guidance)*. (SECRET)
- e. CJCSM 3122.02 C, *Joint Operation Planning and Execution System (JOPES) Volume III (Crisis Action Time-Phased Force and Deployment Data Development and Deployment Execution)*.

- f. JP 1, *Doctrine for the Armed Forces of the United States.*
- g. JP 1-02, *Department of Defense Dictionary of Military and Associated Terms.*
- h. JP 2-0, *Joint Intelligence.*
- i. JP 3-0, *Joint Operations.*
- j. JP 3-02, *Amphibious Operations.*
- k. JP 3-05, *Doctrine for Joint Special Operations.*
- l. JP 3-10, *Joint Security Operations in Theater.*
- m. JP 3-11, *Operations in Chemical, Biological, Radiological, and Nuclear (CBRN) Environments.*
- n. JP 3-13, *Information Operations.*
- o. JP 3-30, *Command and Control for Joint Air Operations.*
- p. JP 3-35, *Deployment and Redeployment Operations.*
- q. JP 3-41, *Chemical, Biological, Radiological, Nuclear, and High-Yield Explosives Consequence Management.*
- r. JP 3-52, *Joint Airspace Control in the Combat Zone.*
- s. JP 3-61, *Public Affairs.*
- t. JP 4-0, *Joint Logistics.*
- u. JP 4-01, *Joint Doctrine for the Defense Transportation System.*
- v. JP 4-01.2, *Sealift Support to Joint Operations.*
- w. JP 4-01.5, *Joint Tactics Terminal Operations.*
- x. JP 4-02, *Health Service Support.*
- y. JP 4-05, *Joint Mobilization Planning.*
- z. JP 4-09, *Distribution Operations.*
- aa. JP 6-0, *Joint Communications System.*

4. Multi-Service Publications

FM 3-52.3, MCRP 3-25A, NTTP 3-56.3. AFTTP (I) 3-2.23, *Multi-Service Procedures for Joint Air Traffic Control*.

5. US Army Publications

FM 3-0, *Operations*.

6. United States Air Force Publications

- a. AFDD 2, *Operations and Organization*.
- b. AFDD 2-6, *Air Mobility Operations*.
- c. AFDD 2-7, *Special Operations*.

7. NATO Publications

ATP-56(B), *Air to Air Refueling*.

Intentionally Blank

**APPENDIX B
ADMINISTRATIVE INSTRUCTIONS**

1. User Comments

Users in the field are highly encouraged to submit comments on this publication to: Commander, United States Joint Forces Command, Joint Warfighting Center, ATTN: Joint Doctrine Group, 116 Lake View Parkway, Suffolk, VA 23435-2697. These comments should address content (accuracy, usefulness, consistency, and organization), writing, and appearance.

2. Authorship

The lead agent for this publication is the US Transportation Command. The Joint Staff doctrine sponsor for this publication is the Director for Operations (J-3).

3. Supersession

This publication supersedes JP 3-17 CH1, 14 April 2006, Joint Tactics, Techniques, and Procedures for Theater Airlift Operations.

4. Change Recommendations

a. Recommendations for urgent changes to this publication should be submitted:

TO: USTRANSCOM SCOTT AFB IL//TCJ5J4-P
INFO: JOINT STAFF WASHINGTON DC//J7-JDETD//

Routine changes should be submitted to the Director for Operational Plans and Joint Force Development (J-7), JDETD, 7000 Joint Staff Pentagon, Washington, DC 20318-7000, with info copies to the USJFCOM JWFC.

b. When a Joint Staff directorate submits a proposal to the Chairman of the Joint Chiefs of Staff that would change source document information reflected in this publication, that directorate will include a proposed change to this publication as an enclosure to its proposal. The Military Services and other organizations are requested to notify the Director, J-7, Joint Staff, when changes to source documents reflected in this publication are initiated.

c. Record of Changes:

CHANGE NUMBER	COPY NUMBER	DATE OF CHANGE	DATE ENTERED	POSTED BY	REMARKS

5. Distribution of Publications

Local reproduction is authorized and access to unclassified publications is unrestricted. However, access to and reproduction authorization for classified joint publications must be in accordance with DOD 5200.1-R, *Information Security Program*.

6. Distribution of Electronic Publications

a. Joint Staff J-7 will not print copies of JPs for distribution. Electronic versions are available on JDEIS at <https://jdeis.js.mil> (NIPRNET), and <http://jdeis.js.smil.mil> (SIPRNET) and on the JEL at <http://www.dtic.mil/doctrine> (NIPRNET).

b. Only approved joint publications and joint test publications are releasable outside the combatant commands, Services, and Joint Staff. Release of any classified joint publication to foreign governments or foreign nationals must be requested through the local embassy (Defense Attaché Office) to DIA Foreign Liaison Office, PO-FL, Room 1E811, 7400 Defense Pentagon, Washington, D.C. 20301-7400.

c. CD-ROM. Upon request of a JDDC member, the Joint Staff J-7 will produce and deliver one CD-ROM with current joint publications.

GLOSSARY

PART I – ABBREVIATIONS AND ACRONYMS

ACL	allowable cabin load
ACLP	affiliated contingency load planning
A/DACG	arrival/departure airfield control group
AE	aeromedical evacuation
AECT	aeromedical evacuation control team
AFCC	Air Force Component Commander
AFDD	Air Force doctrine document
AFRC	Air Force Reserve Command
AFTRANS	Air Force Transportation Component
AFTTP(I)	Air Force tactics, techniques, and procedures (instruction)
AGL	above ground level
ALCF	airlift control flight
ALOC	air line of communications
ALTRV	altitude reservation
AMC	Air Mobility Command
AMD	air mobility division
AMLO	air mobility liaison officer
AMOG	air mobility operations group
AMOW	air mobility operations wing
AMOS	air mobility operations squadron
AMS	air mobility squadron
ANG	Air National Guard
AOC	air and space operations center (USAF)
AOR	area of responsibility
APOD	aerial port of debarkation
APOE	aerial port of embarkation
AR	air refueling
ARFOR	Army forces
ATC	air traffic control
ATO	air tasking order
ATP	allied tactical publication
AV	asset visibility
AWACS	Airborne Warning and Control System
BCD	battlefield coordination detachment
BDOC	base defense operations center
BOS	base operating support
C2	command and control
CAMPS	Consolidated Air Mobility Planning System
CBR	chemical, biological, and radiological
CBRN	chemical, biological, radiological, and nuclear
CCDR	combatant commander
CCT	combat control team
CDE	collateral damage estimation
CDS	container delivery system

CDRUSTRANSCOM	Commander, United States Transportation Command
CJCS	Chairman of the Joint Chiefs of Staff
CJCSM	Chairman of the Joint Chiefs of Staff manual
CJTF	commander, joint task force
CLPT	contingency load planning team
CNO	computer network operations
COA	course of action
COCOM	combatant command (command authority)
COMAFFOR	commander, Air Force forces
CONOPS	concept of operations
CONUS	continental United States
CRAF	Civil Reserve Air Fleet
CRC	control and reporting center
CRE	contingency response element
CRG	contingency response group
CRT	contingency response team
CRW	contingency response wing
CSAR	combat search and rescue
CSE	contingency support element
CST	contingency support team
DACG	departure airfield control group
DDOC	Deployment and Distribution Operations Center
DEPOD	deployment order
DIRMOBFOR	director of mobility forces
DOD	Department of Defense
DOS	Department of State
DTS	Defense Transportation System
DZ	drop zone
DZC	drop zone controller
DZSO	drop zone safety officer
DZST	drop zone support team
DZSTL	drop zone support team leader
ECS	expeditionary combat support
EMCON	emission control
EMP	electromagnetic pulse
EMTF	expeditionary mobility task force
EOC	emergency operating center
EW	electronic warfare
EZ	exchange zone
FM	field manual (Army)
FOB	forward operating base

GAMSS	Global Air Mobility Support System
GATES	Global Air Transportation Execution System
GCC	geographic combatant commander
GDSS	Global Decision Support System
GLO	ground liaison officer
GPS	Global Positioning System
GTN	Global Transportation Network
HN	host nation
HNS	host-nation support
IAW	in accordance with
ICAO	International Civil Aviation Organization
ICDS	improved container delivery system
IO	information operations
ITV	in-transit visibility
J-3	operations directorate of a joint staff
J-4	logistics directorate of a joint staff
JA/ATT	joint airborne and air transportability training
JAOC	joint air operations center
JCS	Joint Chiefs of Staff
JDDE	Joint Deployment and Distribution Enterprise
JDDOC	joint deployment and distribution operations center
JFACC	joint force air component commander
JFC	joint force commander
JFSOCC	joint force special operations component commander
JMC	joint movement center
JOA	joint operations area
JOPEs	Joint Operation Planning and Execution System
JP	joint publication
JPADS	joint precision airdrop system
JPEC	joint planning and execution community
JRSOI	joint reception, staging, onward movement, and integration
JTF	joint task force
JTF-PO	joint task force-port opening
LNO	liaison officer
LRST	long-range surveillance team
LZ	landing zone
MAF	mobility air forces
MAGTF	Marine air-ground task force
MAJCOM	major command
MASF	mobile aeromedical staging facility
MCRP	Marine Corps reference publication

MCT	movement control team
MHE	materials handling equipment
MILDEC	military deception
MOA	memorandum of agreement
MOG	maximum (aircraft) on ground
MOPP	mission-oriented protective posture
MRT	maintenance recovery team
NAMS	National Air Mobility System
NEO	noncombatant evacuation operation
NIPRNET	Non-Secure Internet Protocol Router Network
NTTP	Navy tactics, techniques, and procedures
O&M	operation and maintenance
OCONUS	outside the continental United States
OEF	Operation ENDURING FREEDOM
OIF	Operation IRAQI FREEDOM
OPCON	operational control
OPLAN	operation plan
OPORD	operation order
OPSEC	operations security
OSA	operational support airlift
PA	public affairs
PACAF	Pacific Air Forces
PI	point of impact
PMR	patient movement requirement
PMRC	patient movement requirements center
POL	petroleum, oils, and lubricants
PR	Phoenix Raven
PSYOP	psychological operations
RV	rendezvous
618th TACC	618th Tanker Airlift Control Center
SAA	senior airfield authority
SAAM	special assignment airlift mission
SATCOM	satellite communications
SC	strategic communication
SEAD	suppression of enemy air defenses
SecDef	Secretary of Defense
SIPRNET	SECRET Internet Protocol Router Network
SOF	special operations forces
SPM	single port manager
ST	special tactics
STO	special technical operations

STT	special tactics team
TACON	tactical control
TACP	tactical air control party
TACS	theater air control system
TACT	tactical aviation control team
TDD	time definite delivery
TOC	tactical operations center
TPFDD	time-phased force and deployment data
TRIADS	Tri-Wall Aerial Distribution System
TTP	tactics, techniques, and procedures
TWCF	Transportation Working Capital Fund
USAF	United States Air Force
USAFE	United States Air Forces in Europe
USC	United States Code
USEUCOM	United States European Command
USG	United States Government
USJFCOM	United States Joint Forces Command
USMC	United States Marine Corps
USN	United States Navy
USSOCOM	United States Special Operations Command
USTRANSCOM	United States Transportation Command

PART II – TERMS AND DEFINITIONS

Unless otherwise annotated, this publication is the proponent for all terms and definitions found in the glossary. Upon approval, JP 1-02, *Department of Defense Dictionary of Military and Associated Terms*, will reflect this publication as the source document for these terms and definitions.

adverse weather aerial delivery system. None. (Approved for removal from JP 1-02.)

aerial port. An airfield that has been designated for the sustained air movement of personnel and materiel as well as an authorized port for entrance into or departure from the country where located. Also called APORT. (JP 1-02. SOURCE: JP 3-17)

aerial port control center. None. (Approved for removal from JP 1-02.)

aeromedical evacuation. The movement of patients under medical supervision to and between medical treatment facilities by air transportation. Also called AE. (JP 1-02. SOURCE: JP 3-17)

aeromedical evacuation cell. None. (Approved for removal from JP 1-02.)

aeromedical evacuation control officer. None. (Approved for removal from JP 1-02.)

aeromedical evacuation control team. A core team assigned to a component-numbered air force, Air Force air and space operations center, or air mobility division that provides command and control of assigned aeromedical evacuation forces. Also called AECT. (This term and its definition modify the existing term and its definition and are approved for inclusion in JP 1-02.)

airborne. 1. In relation to personnel, troops especially trained to effect, following transport by air, an assault debarkation, either by parachuting or touchdown. 2. In relation to equipment, pieces of equipment that have been especially designed for use by airborne troops during or after an assault debarkation. It also designates some aeronautical equipment used to accomplish a particular mission. 3. When applied to materiel, items that form an integral part of the aircraft. 4. The state of an aircraft, from the instant it becomes entirely sustained by air until it ceases to be so sustained. A lighter-than-air aircraft is not considered to be airborne when it is attached to the ground, except that moored balloons are airborne whenever sent aloft. Also called ABN. (JP 1-02. SOURCE: JP 3-17)

airborne operation. An operation involving the air movement into an objective area of combat forces and their logistic support for execution of a tactical, operational, or strategic mission. The means employed may be any combination of airborne units, air transportable units, and types of transport aircraft, depending on the mission and the overall situation. (JP 1-02. SOURCE: JP 3-18)

air delivery. See airdrop; airland; air movement. (This term and its definition modify the existing term and its definition and are approved for inclusion in JP 1-02.)

air delivery container. None. (Approved for removal from JP 1-02.)

air delivery equipment. None. (Approved for removal from JP 1-02.)

air direct delivery. None. (Approved for removal from JP 1-02.)

airdrop. The unloading of personnel or materiel from aircraft in flight. See also free drop; free fall; high velocity drop; low velocity drop. (JP 1-02. SOURCE: JP 3-17)

airfield. An area prepared for the accommodation (including any buildings, installations, and equipment), landing, and takeoff of aircraft. (JP 1-02. SOURCE: JP 3-17)

airhead. 1. A designated area in a hostile or potentially hostile operational area that, when seized and held, ensures the continuous air landing of troops and materiel and provides the maneuver space necessary for projected operations. Normally it is the area seized in the assault phase of an airborne operation. (JP 3-18) 2. A designated location in an operational area used as a base for supply and evacuation by air. (This term and its definition modify the existing term and its definition and are approved for inclusion in JP 1-02.)

airland. Move by air and disembark, or unload, after the aircraft has landed or while an aircraft is hovering. (This term and its definition modify the existing term “air landed” and its definition and are approved for inclusion in JP 1-02.)

air land operation. An operation involving movement by air with a designated destination for further ground deployment of units and personnel and/or further ground distribution of supplies. (This term and its definition modify the existing term “air landed operation” and its definition and are approved for inclusion in JP 1-02.)

airlift capability. The total capacity expressed in terms of number of passengers and/or weight/cubic displacement of cargo that can be carried at any one time to a given destination by available airlift. See also airlift requirement. (JP 1-02. SOURCE JP 3-17)

airlift control team. A cell within the joint air operations center and one of the core teams in the air mobility division. The airlift control team brings intratheater airlift functional expertise from the theater organizations to plan, coordinate, manage, and execute intratheater airlift operations in the area of responsibility and joint operations area for the joint force air component commander. United States Transportation Command and Air Mobility Command may augment the airlift control team with intratheater airlift expertise. These two sources of airlift expertise integrate into a single airlift control team within the air mobility division. Also called ALCT. (This term and its definition modify the existing term and its definition and are approved for inclusion in JP 1-02.)

airlift coordination cell. None. (Approved for removal from JP 1-02.)

airlift mission commander. A commander designated when airlift aircraft are participating in airlift operations specified in the implementing directive. The airlift mission commander is usually designated by the commander of the deployed airlift unit, but may be selected by the Air Force component commander or joint force air component commander depending on the nature of the mission. (JP 1-02. SOURCE: JP 3-17)

airlift requirement. The total number of passengers and/or weight/cubic displacement of cargo required to be carried by air for a specific task. See also airlift capability. (JP 1-02. SOURCE: JP 3-17)

airlift service. None. (Approved for removal from JP 1-02.)

air logistic support operation. None. (Approved for removal from JP 1-02.)

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. SOURCE: JP 3-17)

Air Mobility Command. The Air Force component command of the US Transportation Command. Also called AMC. (JP 1-02. SOURCE: JP 3-17)

air mobility control team. A cell within the joint 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 joint air operations center's combat operations division, subordinate air mobility units, and mission forces. Also called AMCT. (This term and its definition modify the existing term and its definition and are approved for inclusion in 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, air 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. See also air mobility; joint air operations center. (This term and its definition modify the existing term and its definition and are approved for inclusion in JP 1-02.)

air mobility element. None. (Approved for removal from JP 1-02.)

air mobility express. None. (Approved for removal from JP 1-02.)

air mobility liaison officer. An officer specially trained to implement the theater air control system and to advise on control of airlift assets. Also called AMLO. (This term and its definition modify the existing term and its definition and are approved for inclusion in JP 1-02.)

air movement. Air transport of units, personnel, supplies, and equipment including airdrops and air landings. See also airdrop. (JP 1-02. SOURCE: JP 3-17)

air refueling. The refueling of an aircraft in flight by another aircraft. Also called AR. (This term and its definition modify the existing term and its definition and are approved for inclusion in JP 1-02.)

air refueling control team. A cell within the joint air operations center and one of the core teams in the air mobility division. Part of the air operations center that coordinates aerial refueling planning, tasking, and scheduling to support combat air operations or to support a strategic airbridge within the area of responsibility or joint area of operations. Also called ARCT. (This term and its definition modify the existing term and its definition and are approved for inclusion in JP 1-02.)

air supply. None. (Approved for removal from JP 1-02.)

air terminal. A facility on an airfield that functions as an air transportation hub and accommodates the loading and unloading of airlift aircraft and the intransit processing of traffic. The airfield may or may not be designated an aerial port. (JP 1-02. SOURCE: JP 3-17)

allocation (air). None. (Approved for removal from JP 1-02.)

allocation (transportation). None. (Approved for removal from JP 1-02.)

allowable cabin load. The maximum payload that can be carried on an individual sortie. Also called ACL. (JP 1-02. SOURCE: JP 3-17)

allowable load. None. (Approved for removal from JP 1-02.)

back-haul airlift. None. (Approved for removal from JP 1-02.)

chalk number. The number given to a complete load and to the transporting carrier. (JP 1-02. SOURCE: JP 3-17)

channel airlift. Provides regularly scheduled airlift for movement of sustainment cargo, depending upon volume of workload, between designated aerial ports of embarkation and seaports of debarkation over validated contingency or distribution channel routes. (This term and its definition modify the existing term and its definition and are approved for inclusion in JP 1-02.)

Civil Reserve Air Fleet. A program in which the Department of Defense contracts for the services of specific aircraft, owned by a US entity or citizen, during national emergencies and defense-oriented situations when expanded civil augmentation of military airlift activity is required. These aircraft are allocated, in accordance with Department of Defense requirements, to segments, according to their capabilities, such as international long range and short range cargo and passenger sections, national (domestic and Alaskan sections) and aeromedical evacuation and other segments as may be mutually agreed upon by the Department of Defense and the Department of Transportation. Also called CRAF. (This term and its definition modify the existing term “civil reserve air fleet” and its definition and are approved for inclusion in JP 1-02.)

combat control team. A small task organized team of Air Force parachute and combat diver qualified personnel trained and equipped to rapidly establish and control drop, landing, and extraction zone air traffic in austere or hostile conditions. They survey and establish terminal airheads as well as provide guidance to aircraft for airlift operations. They provide command and control, and conduct reconnaissance, surveillance, and survey assessments of potential objective airfields or assault zones. They also can perform limited weather observations and removal of obstacles or unexploded ordinance with demolitions. Also called CCT. (JP 1-02. SOURCE: JP 3-17)

combat loading. The arrangement of personnel and the stowage of equipment and supplies in a manner designed to conform to the anticipated tactical operation of the organization embarked. Each individual item is stowed so that it can be unloaded at the required time. (JP 1-02. SOURCE: JP 3-02)

common-user airlift service. The airlift service provided on a common basis for all Department of Defense agencies and, as authorized, for other agencies of the US Government. (JP 1-02. SOURCE: JP 3-17)

CORONET. A peacetime movement of air forces in support of rotations, exercises, or aircraft movements for logistic purposes. (This term and its definition are applicable only in the context of this publication and cannot be referenced outside this publication.)

course of action. 1. Any sequence of activities that an individual or unit may follow. 2. A possible plan open to an individual or commander that would accomplish, or is related to the accomplishment of the mission. 3. The scheme adopted to accomplish a job or mission. 4. A line of conduct in an engagement. 5. A product of the Joint

Operation Planning and Execution System concept development phase and the course-of-action determination steps of the joint operation planning process. Also called COA. (JP 1-02. SOURCE: JP 5-0)

departure airfield. An airfield on which troops and/or materiel are enplaned for flight. See also airfield. (JP 1-02. SOURCE: JP 3-17)

departure area. None. (Approved for removal from JP 1-02.)

director of mobility forces. Normally a senior officer who is familiar with the area of responsibility or joint operations area and possesses an extensive background in air mobility operations. When established, the director of mobility forces serves as the designated agent for all air mobility issues in the area of responsibility or joint operations area, and for other duties as directed. The director of mobility forces exercises coordinating authority between the air operations center (or appropriate theater command and control node), the tanker airlift control center, the air mobility operations control center (when established and when supporting subordinate command objectives), and the joint movement center, in order to expedite the resolution of air mobility issues. The director of mobility forces may be sourced from the theater's organizations or US Transportation Command. Additionally, the director of mobility forces, when designated, will ensure the effective integration of intertheater and intratheater air mobility operations and facilitate the conduct of intratheater air mobility operations. Also called DIRMOBFOR. (JP 1-02. SOURCE: JP 3-17)

drop altitude. The altitude above mean sea level at which airdrop is executed. (JP 1-02. SOURCE: JP 3-17)

dropmaster. None. (Approved for removal from JP 1-02.)

drop zone. A specific area upon which airborne troops, equipment, or supplies are airdropped. Also called DZ. (JP 1-02. SOURCE: JP 3-17)

dual-role tanker. Dual-role tankers carry support personnel, supplies, and equipment for the deploying force while escorting and/or refueling combat aircraft to the area of responsibility. Dual-role tankers can minimize the total lift requirement while providing critical cargo and personnel at the combat aircraft's time of arrival. (JP 1-02. SOURCE: JP 3-17)

embarkation. The process of putting personnel and/or vehicles and their associated stores and equipment into ships and/or aircraft. (JP 1-02. SOURCE: JP 3-02)

extraction zone. None. (Approved for removal from JP 1-02.)

follow-up supplies. None. (Approved for removal from JP 1-02.)

force enablement. None. (Approved for removal from JP 1-02.)

force extension. None. (Approved for removal from JP 1-02.)

forward operating base. An airfield used to support tactical operations without establishing full support facilities. The base may be used for an extended time period. Support by a main operating base will be required to provide backup support for a forward operating base. Also called FOB. (JP 1-02. SOURCE: JP 3-09.3)

free drop. The dropping of equipment or supplies from an aircraft without the use of parachutes. See also airdrop; air movement; free fall; high velocity drop; low velocity drop. (JP 1-02. SOURCE: JP 3-17)

free fall. A parachute maneuver in which the parachute is manually activated at the discretion of the jumper or automatically at a preset altitude. See also airdrop; air movement; free drop; high velocity drop; low velocity drop. (JP 1-02. SOURCE: JP 3-17)

Global Air Transportation Execution System. The Air Mobility Command's aerial port operations and management information system designed to support automated cargo and passenger processing, the reporting of in-transit visibility data to the Global Transportation Network, and billing to Air Mobility Command's financial management directorate. Also called GATES. (JP 1-02. SOURCE: JP 3-17)

Global Command and Control System. A deployable command and control system supporting forces for joint and multinational operations across the range of military operations with compatible, interoperable, and integrated communications systems. Also called GCCS. (JP 1-02. SOURCE: JP 6-0)

Global Decision Support System. Command and control system for Air Mobility Command's mobility airlift and air refueling assets. Provides aircraft schedules, arrival and/or departure, and aircraft status data to support in-transit visibility of aircraft and aircrews. Also called GDSS. (JP 1-02. SOURCE: JP 3-17)

Global Transportation Network. The automated support necessary to enable US Transportation Command and its components to provide global transportation management. The Global Transportation Network provides the integrated transportation data and systems necessary to accomplish global transportation planning, command and control, and in-transit visibility across the range of military operations. The designated Department of Defense in-transit visibility system provides customers with the ability to track the identity, status, and location of Department of Defense units and non-unit cargo, passengers, patients, forces, and military and commercial airlift, sealift, and surface assets from origin to destination across the range of military operations. The Global Transportation Network collects, integrates, and distributes transportation information to combatant commanders, Services, and other Department of Defense customers. Global Transportation Network provides US Transportation Command with the ability to perform command and control operations, planning and

analysis, and business operations in tailoring customer requirements throughout the requirements process. Also called GTN. (This term and its definition modify the existing term and its definition and are approved for inclusion in JP 1-02 and sourced to JP 4-01.)

high-altitude low-opening parachute technique. A method of delivering personnel, equipment, or supplies from airlift aircraft which must fly at altitudes above the threat umbrella. Also called HALO. (JP 1-02. SOURCE: JP 3-17)

high velocity drop. A drop procedure in which the drop velocity is greater than 30 feet per second (low velocity drop) and lower than free drop velocity. See also airdrop. (JP 1-02. SOURCE: JP 3-17)

immediate airlift requests. None. (Approved for removal from JP 1-02.)

intertheater. Between theaters or between the continental United States and theaters. (JP 1-02)

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.” (JP 1-02. SOURCE: JP 3-17)

in-transit visibility. The ability to track the identity, status, and location of Department of Defense units, and non-unit cargo (excluding bulk petroleum, oils, and lubricants) and passengers; patients; and personal property from origin to consignee or destination across the range of military operations. Also called ITV. See also Global Transportation Network. (JP 1-02. SOURCE: JP 4-01.2)

intratheater. Within a theater. (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. (JP 1-02. SOURCE: JP 3-17)

joint airborne advance party. None. (Approved for removal from JP 1-02.)

joint air operations center. A jointly staffed facility established for planning, directing, and executing joint air operations in support of the joint force commander's operation or campaign objectives. Also called JAOC. (JP 1-02. SOURCE: JP 3-30)

Joint Mobility Control Group. None. (Approved for removal from JP 1-02.)

jumpmaster. The assigned airborne qualified individual who controls paratroops from the time they enter the aircraft until they exit. (JP 1-02. SOURCE: JP 3-17)

jump speed. None. (Approved for removal from JP 1-02.)

landing zone. Any specified zone used for the landing of aircraft. Also called LZ. (JP 1-02. SOURCE: JP 3-17)

loading time. None. (Approved for removal from JP 1-02.)

loadmaster. An Air Force technician qualified to plan loads, to operate auxiliary materials handling equipment, and to supervise loading and unloading of aircraft. (JP 1-02. SOURCE: JP 3-17)

low-altitude parachute extraction system. None. (Approved for removal from JP 1-02.)

low velocity drop. A drop procedure in which the drop velocity does not exceed 30 feet per second. (JP 1-02. SOURCE: JP 3-17)

marshalling. 1. The process by which units participating in an amphibious or airborne operation group together or assemble when feasible or move to temporary camps in the vicinity of embarkation points, complete preparations for combat, or prepare for loading. 2. The process of assembling, holding, and organizing supplies and/or equipment, especially vehicles of transportation, for onward movement. (JP 1-02. SOURCE: JP 3-17)

mobility. A quality or capability of military forces which permits them to move from place to place while retaining the ability to fulfill their primary mission. (JP 1-02. SOURCE: JP 3-17)

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. (This term and its definition modify the existing term "Mobility Air Forces" and its definition and are approved for inclusion in 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 known as MPRS. (JP 1-02. SOURCE: JP 3-17)

National Air Mobility System. A broad and comprehensive system of civilian and military capabilities and organizations that provides the President and Secretary of Defense and combatant commanders with rapid global mobility. This system effectively integrates the management of airlift, air refueling, and air mobility support assets, processes, and procedures into an integrated whole. Also called NAMS (JP 1-02. SOURCE: JP 3-17)

Navy-unique fleet essential aircraft. Combatant commander-controlled airlift assets deemed essential for providing air transportation in support of naval operations' transportation requirements. This capability is intended to provide a balance and supplement to other airlift assets to ensure the Navy's ability to respond to emergency and wartime requirements. Also called NUFEA. (JP 1-02. SOURCE: JP 3-17)

operational support airlift. Operational support airlift missions are movements of high-priority passengers and cargo with time, place, or mission-sensitive requirements. Operational support airlift aircraft are those fixed-wing aircraft acquired and/or retained exclusively for operational support airlift missions, as well as any other Department of Defense-owned or controlled aircraft, fixed- or rotary-wing, used for operational support airlift purposes. Also called OSA. (This term and its definition modify the existing term and its definition and are approved for inclusion in JP 1-02.)

oversized cargo. 1. Large items of specific equipment such as a barge, side loadable warping tug, causeway section, powered, or causeway section, nonpowered. Requires transport by sea. 2. Air cargo exceeding the usable dimension of a 463L pallet loaded to the design height of 96 inches, but equal to or less than 1,000 inches in length, 117 inches in width, and 105 inches in height. This cargo is air transportable on the C-5, C-17, C-130, KC-10 and most civilian contract cargo carriers. (This term and its definition modify the existing term and its definition and are approved for inclusion in JP 1-02.)

planned airlift requests. None. (Approved for removal from JP 1-02.)

rapid global mobility. The timely movement, positioning, and sustainment of military forces and capabilities across the range of military operations. (JP 1-02. SOURCE: JP 3-17)

routine supplies. None. (Approved for removal from JP 1-02.)

senior airfield authority. An individual designated by the joint force commander to be responsible for the control, operation, and maintenance of an airfield to include the runways, associated taxiways, parking ramps, land, and facilities whose proximity

directly affects airfield operations. Also called SAA. (Approved for inclusion in JP 1-02.)

Service-organic transportation assets. Transportation assets that are: a. Assigned to a Military Department for functions of the Secretaries of the Military Departments set forth in Title 10 of the United States Code, Sections 3013(b), 5013(b), and 8013(b), including administrative functions (such as motor pools), intelligence functions, training functions, and maintenance functions; b. Assigned to the Department of the Army for the execution of the missions of the Army Corps of Engineers; c. Assigned to the Department of the Navy as the special mission support force of missile range instrumentation ships, ocean survey ships, cable ships, oceanographic research ships, acoustic research ships, and naval test support ships; the naval fleet auxiliary force of fleet ammunition ships, fleet stores ships, fleet ocean tugs, and fleet oilers; hospital ships; and Navy-unique fleet essential aircraft to provide delivery of passengers and/or cargo from forward Air Mobility Command channel hubs to mobile fleet units; Marine Corps intermediate maintenance activity ships, Marine Corps helicopter support to senior federal officials; and, prior to the complete discharge of cargo, maritime prepositioning ships; d. Assigned to the Department of the Air Force for search and rescue, weather reconnaissance, audiovisual services, and aeromedical evacuation functions, and transportation of senior federal officials. (This term and its definition modify the existing term and its definition and are approved for inclusion in JP 1-02 and sourced to JP 4-01.)

single port manager. Through its transportation component commands, the US Transportation Command is the Department of Defense-designated single port manager for all common-user aerial and sea ports worldwide. The single port manager performs those functions necessary to support the strategic flow of the deploying forces' equipment and sustainment from the aerial and seaport of embarkation and hand-off to the combatant commander in the aerial and seaport of debarkation. The single port manager is responsible for providing strategic deployment status information to the combatant commander and to manage workload of the aerial port of debarkation and seaport of debarkation operator based on the commander's priorities and guidance. The single port manager is responsible through all phases of the theater aerial and seaport operations continuum, from an unimproved airfield and bare beach deployment to a commercial contract supported deployment. Also called SPM. (JP 1-02. SOURCE: JP 4-01.2)

618th 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 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, and weather. Also called 618th TACC. (This term and its definition modify the existing term "Tanker Airlift Control Center" and its definition and are approved for inclusion in JP 1-02.)

small austere airfield. None. (Approved for removal from JP 1-02.)

special tactics team. A task-organized element of special tactics that may include combat control, pararescue, and combat weather personnel. Functions include austere airfield and assault zone reconnaissance, surveillance, establishment, and terminal control; terminal attack control; combat search and rescue; combat casualty care and evacuation staging; and tactical weather observations and forecasting. Also called STT. (JP 1-02. SOURCE: JP 3-05)

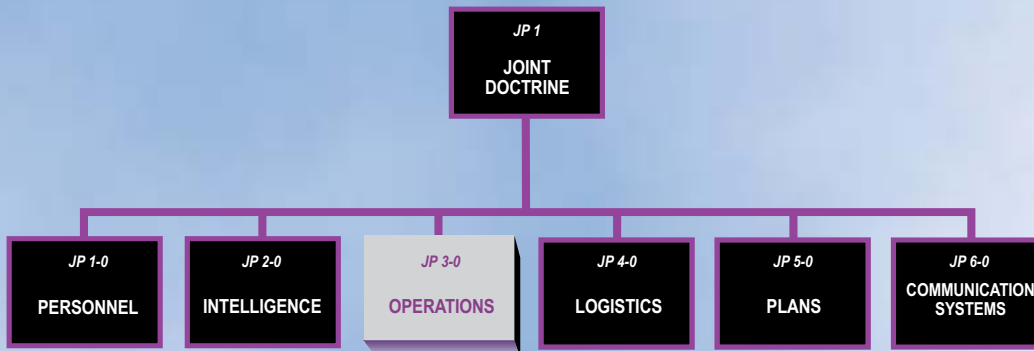
station time. In air transport operations, the time at which crews, passengers, and cargo are to be on board and ready for the flight. (JP 1-02. SOURCE: JP 3-17)

stick (air transport). None. (Approved for removal from JP 1-02.)

tanker airlift control element. None. (Approved for removal from JP 1-02.)

Intentionally Blank

JOINT DOCTRINE PUBLICATIONS HIERARCHY



All joint publications are organized into a comprehensive hierarchy as shown in the chart above. **Joint Publication (JP) 3-17** is in the **Operations** series of joint doctrine publications. The diagram below illustrates an overview of the development process:

