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ANNEX 3-17 AIR MOBILITY OPERATIONS

INTRODUCTION TO AIR MOBILITY OPERATIONS

Last Reviewed: 5 April 2016

Air mobility operations doctrine represents an accumulation of best practices and lessons learned, from World War II to the most recent conflicts and humanitarian assistance/disaster relief operations. Air mobility operations support all of the geographic combatant commanders and functional combatant commanders. The foundational components of air mobility operations—airlift, air refueling, air mobility support, and aeromedical evacuation—work with other combat forces to achieve national and joint force commander objectives.

Joint doctrine defines air mobility as "the rapid movement of personnel, materiel, and forces to and from or within a theater by air."[1] The Department of Defense (DOD) transportation mission involves many transportation communities and assets, services, and systems owned by, contracted for, or controlled by the DOD. US Transportation Command serves as the manager of the transportation community and is supported by the Air Force's Air Mobility Command, the Army's Surface Deployment and Distribution Command, and the US Navy's Military Sealift Command.

Mobility air forces (MAF) provide rapid global mobility and conduct air mobility operations.[2] These forces deliver the global reach and global power necessary to achieve US national objectives. The US military is called upon by national leaders to perform their functions around the globe either directly accomplishing national objectives or supporting other agencies. All Services and US government agencies rely upon Air Force MAF to rapidly move personnel and resources.

"Mobility forces are more than 'enablers' and 'enhancers' in that they quickly project forces and take the fight to the enemy. As the United States moves into a realm of uncertain adversaries, it is the capability of our mobility forces that will ensure the force projection necessary to protect US national interests."[3] To properly discuss air mobility operations, the Air Force builds on the joint definition to include the support required to conduct air mobility operations.

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[1] Joint Publication (JP) 3-17, *Air Mobility Operations*.
[2] JP 3-17.
[3] *USAF 2010 Rapid Global Mobility Core Function Master Plan*, Version 6, Air Mobility Command, Scott AFB, IL, 2010.

GLOBAL MOBILITY ENTERPRISE

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The global mobility enterprise is an integrated series of nodes that support air mobility operations. The four components of the enterprise consist of Airmen, equipment, infrastructure, and command and control (C2). In a dynamic, complex, or contested environment, the enterprise requires global situational awareness through collaboration, coordinated operations, and adherence to processes and support disciplines.

Specifically, the airfields or nodes that are part of this enterprise have the four components (Airmen, equipment, infrastructure, and C2). When contingencies arise, planners identify key nodes and components. Mobility Airmen label these nodes as aerial ports of embarkation, aerial ports of debarkation/hubs, intermediate staging bases, and forward operating bases. Through mission analysis, planners adjust the nodes to drive greater velocity and thus effectiveness throughout the global mobility enterprise. Most importantly, restricting any component or failing to protect all lines of communication from physical or cyberspace attacks within the enterprise can jeopardize its ability to support air mobility operations.

Airmen are the first critical component of the global mobility enterprise. Due to their unique skill sets, Airmen should be positioned quickly to key nodes to ensure the success of the transportation flow throughout the system.

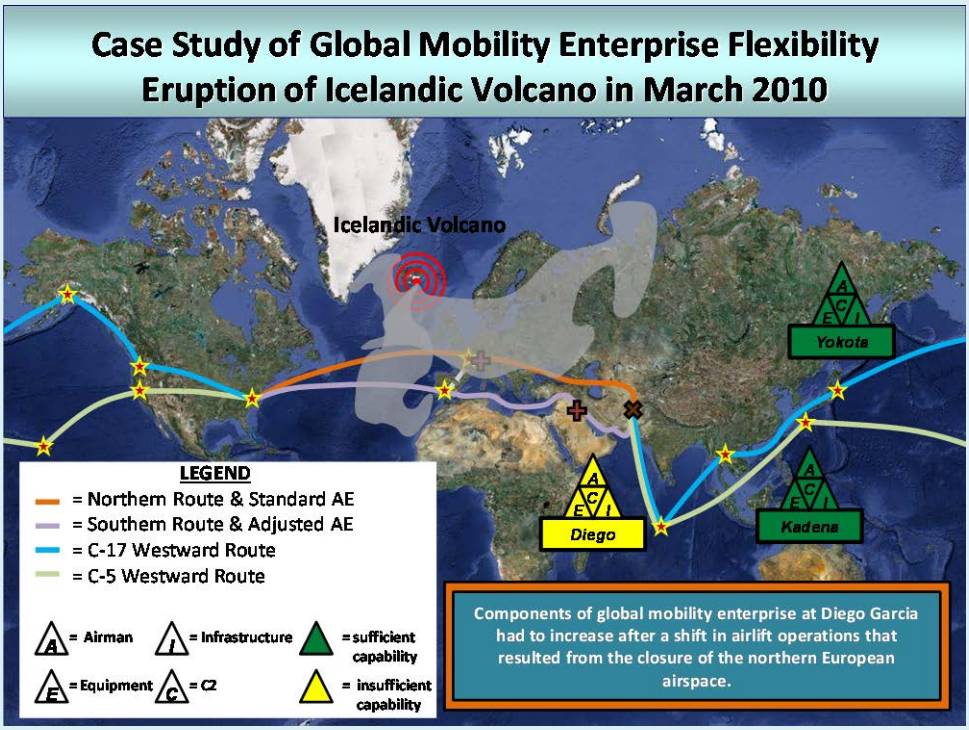
As the enterprise repositions Airmen, planners ensure each node has the right equipment. Tanker aircraft are pivotal to the United States' ability to influence and project power around the globe while airlift aircraft deliver the intended effects to warfighters worldwide. To ensure the precise operations required for mission effectiveness, all MAF aircraft require the most capable equipment. Although airborne assets represent a very visible aspect of the enterprise, equal importance lies in possessing the right equipment for ground support operations such as material handling equipment.

Without sufficient infrastructure to support the global mobility enterprise, there would be a considerable decline in operations. Once departing the continental United States, mobility aircraft typically pass through a fixed en route node. Presently, two air mobility operations wings have multiple geographically separated subordinate units that establish the fixed en route structure. These units are strategically placed across the globe and provide C2, aerial port, and aircraft maintenance services. When requirements drive the use of a location that is not established, mobility planners use

contingency response units to open airfields and provide the same core competencies as fixed en route locations, but for a limited time, until the event has concluded or longer term forces are properly tasked and deployed.

Global Mobility Enterprise Adjustment during Icelandic Volcano Eruption

In 2010, a volcanic eruption in Iceland severely disrupted the airways connecting North America and Europe. AMC aircraft were delivering mine-resistant, ambush-protected vehicles, transporting warfighters and providing humanitarian aid in the wake of disaster. Despite the eruption of Iceland's Eyjafjallajokull volcano on April 16th, nearly 400 airlift, tanker, and AE missions controlled by the 618 AOC (TACC) were rerouted around the ash cloud that closed much of Europe's airspace. In the first days of the eruption, the global mobility enterprise diverted its northern European destinations further south. Airmen and equipment were moved from the fixed en route structures at Ramstein and Spangdahlem Air Bases to staging locations in Spain. Planners mitigated the extra distance with air refueling assets, preventing the disruption of troop, patient, and cargo movements for surge operations in Afghanistan and Iraq. When the volcano sent more ash towards the southern Europe routes, the mobility enterprise flexed again and diverted the cargo flow westward through mobility units in the Pacific. In the end, the command rerouted over 600 missions and moved over 17,000 short tons and over 47,000 people.



C2 synchronizes Airmen, equipment, and infrastructure. Users submit movement or air refueling requirements to US Transportation Command (USTRANSCOM) where the fusion center validates the requirement and tasks its air component, Air Mobility

Command, through the 618th Air Operations Center (AOC) (Tanker Airlift Control Center [TACC]). The 618 AOC (TACC) also conducts comprehensive C2 of intertheater airlift, air refueling, and aeromedical evacuation missions. TACC communicates directly with air mobility wing command posts, aircrews, en route C2 locations.

Geographic combatant commands play a vital role in the C2 functions of monitoring, assessing, planning, and executing the assets in the global mobility enterprise for their respective areas of responsibility while seeking opportunities to maximize capacity and velocity. Normally, USTRANSCOM is the supporting command while the geographic combatant commands are supported commands. Effective coordination across all commands is a requirement to enable the consistent delivery of capabilities to the warfighter.

TYPES OF AIR MOBILITY OPERATIONS

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Air mobility allows forces to reach destinations quickly, thereby opening opportunities for seizing the initiative via speed and surprise, and by providing follow-on sustainment of critical materiel. The four types of air mobility operations are:

- **Airlift.** Airlift is "the movement of personnel and materiel via air mobility forces to support of strategic, operational, or tactical objectives."[1] Airlift provides rapid, flexible, and secure transportation. Because airlift is a high demand asset, it should be used carefully when satisfying warfighter requirements.

- **Air Refueling (AR).** AR is defined as "the refueling of an aircraft in flight by another aircraft."[2] AR extends presence, increases range, and serves as a force multiplier. AR significantly expands the options available to a commander by increasing the range, payload, persistence, and flexibility of receiver aircraft.

- **Air Mobility Support.** Air mobility support provides command and control (C2), aerial port, and maintenance for mobility air forces.[3] Air mobility support is part of the global air mobility support system (GAMSS). The GAMSS consists of a limited number of permanent en route support locations plus deployable forces that deploy according to a global reach laydown strategy.

- **Aeromedical Evacuation (AE).** AE provides time-sensitive en route care of regulated casualties to and between medical treatment facilities using organic and/or contracted aircraft with medical aircrew trained explicitly for that mission. AE forces can operate as far forward as aircraft are able to conduct air operations, across the full range of military operations, and in all operating environments. Specialty medical teams may be assigned to work with the AE aircrew to support patients requiring more intensive en route care.

The Air Force description supplements the joint definition in JP 3-17: "AE is the movement of patients under medical supervision to and between medical treatment facilities by air transportation."[4] This clarifies that, to provide patient care in the aeromedical environment, Air Force AE crew members and specialty medical teams

[1] Joint Publication 3-17, *Air Mobility Operations*
[5] Ibid
[3] Ibid.
[4] Ibid.

the assigned Air Force Service component commander, the commander, Air Mobility Command (AMC/CC). Administrative control (ADCON) for personnel and administrative support usually remains with AFRC. When AFRC forces are activated and allocated to a geographic combatant commander (GCC), the GCC gains OPCON and the regional commander, Air Force forces (COMAFFOR) exercises specified elements of ADCON.

- **Air National Guard/Air National Guard of the United States.** Special considerations exist in determining the command relationships for the ANG and the ANG of the United States when federalized. ANG units operating outside of the United States must be in Title 10 United States Code (USC) status. The COMAFFOR to CDRUSTRANSCOM exercises OPCON of applicable continental United States (CONUS)-based ARC forces when they are federalized under Title 10, USC. Outside the CONUS -based ARC forces are under OPCON of the GCC's theater COMAFFOR when federalized; and likewise, when CONUS-based ARC forces are formally transferred by the SecDef via orders or the Global Force Management Allocation Plan. ADCON for discipline, personnel support, and administration for these federalized units is retained by the ANG Readiness Center, or if full mobilization has occurred, is given to the gaining MAJCOM. ANG forces may be involved in training for the federal mission without being activated to Title 10 status. This is defined under Title 32, USC. Command of ANG forces operating in Title 32 status remains with the state authorities. Guard members fall under the command authority of the adjutant general (TAG) of their state and therefore their governor. When ANG members are involved in training for the federal mission (Title 32, USC status) the gaining MAJCOM/CC may exercise training and readiness oversight, but not command. If Guard members operate in Title 32, USC status outside of their state but within the US, command authority will remain with the TAG but will be subject to any coordinating authority, or state-to-state agreements. If no pre-negotiated agreement exists, responsibilities such as support and force protection should be coordinated between applicable commanders.

Contracted Airlift Operations Reserve Components

Supplemental air mobility capability may be obtained through the CRAF or through additional, selectively contracted options.

Civil Reserve Air Fleet

A significant part of the nation's mobility resources resides in the CRAF. Selected aircraft from US airlines, contractually committed to CRAF, may support Department of Defense (DOD) airlift requirements in emergencies when the need for airlift exceeds military capabilities.

The CRAF has two main segments: international and national. The international segment is further divided into the long-range and short-range sections and the national segment into domestic and Alaskan sections. Assignment of aircraft to a segment depends on the nature of the requirement and the performance characteristics needed. The long-range international section consists of passenger and cargo aircraft capable of transoceanic operations. The role of these aircraft is to

augment intertheater aircraft during periods of increased airlift needs, from minor contingencies up through full national defense emergencies. Medium-sized passenger and cargo aircraft make up the short-range international section supporting near offshore airlift requirements. The domestic section is designed to satisfy increased DOD airlift requirements in the United States during an emergency.

Three stages of incremental activation allow for tailoring an airlift force suitable for the contingency at hand. Stage I is for regional crises, Stage II would be used for major theater war, and Stage III for periods of national mobilization. CDRUSTRANSCOM, with approval of the SecDef, is the activation authority for all three stages of CRAF. During a crisis, if AMC has a need for additional aircraft, AMC/CC would request CDRUSTRANSCOM take steps to activate the appropriate CRAF stage. Each stage of the CRAF activation is only used to the extent necessary to provide the amount of civil augmentation airlift needed by DOD.

Throughout CRAF Stages I-III, organic AE capability is considered adequate. See Chapter 4 for more information on the CRAF.

Theater Express (THX)-Contract

Under this concept, regional commanders enlist commercial air cargo companies to move theater air cargo in single pallet increments. THX uses international air freight tenders to transport DOD freight. The THX program is advantageous since it uses civilian aircraft to facilitate expeditious force and logistics movement. Advantages of THX include relieved burden on organic airlift and faster cargo delivery. This type of airlift is usually hired in single pallet loads and small passenger movements versus hiring a whole aircraft. This gives commercial carriers the capability to blend their commercial and military freight, resulting in economies of scale and lower costs.

Additional Contracted Capabilities

AMC and the Surface Deployment and Distribution Command have standardized freight tenders for most modes of transportation. The tender structure allows for companies participating in CRAF the freedom to carry cargo internally or via subcontractors, a practice known as CRAF prime. Tenders offer many advantages. These include less than full-planeload movement flexibility, lower overall airlift costs, enhanced economic development (in line with national airlift policy), and swift redeployment. Companies cover beddown and aircrew issues. As opposed to military aircraft, carriers enjoy fast overflight clearance processing since they are not required to undergo extensive diplomatic clearance procedures. The use of civilian aircraft for military means usually lowers the overall theater profile of military aircraft.

THE AIRMAN'S PERSPECTIVE ON AIR MOBILITY OPERATIONS

Last Reviewed: 5 April 2016

The following statements present themes central to air mobility capability from the Airman's perspective:

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

- The preferred command relationship for intertheater mobility air forces is for the functional command to support the geographic combatant commander. Command and control of air mobility aircraft performing multiple role missions on the same sortie should be vested in one authority, normally the commander of Air Force forces to whom these forces are attached or assigned.

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

- Because air mobility supports multiple competing common users, the necessity to prioritize and apportion limited resources favors centralized control of intertheater air mobility operations.

- Successful employment of the airlift and air refueling (AR) force is contingent upon establishing and maintaining an air mobility support force enabled by the core capabilities provided by combat support.

- For mobility air forces performing primarily intertheater operations the normal command relationship between functional and geographic organizations is support.

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

- The prepositioning of Global Air Mobility Support System forces should be accomplished ahead of combat force deployment (whether Air Force or sister Service).

- AR significantly expands the force options available to a commander by increasing the range, payload, persistence, and flexibility of other aircraft.

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

COMMAND RELATIONSHIPS

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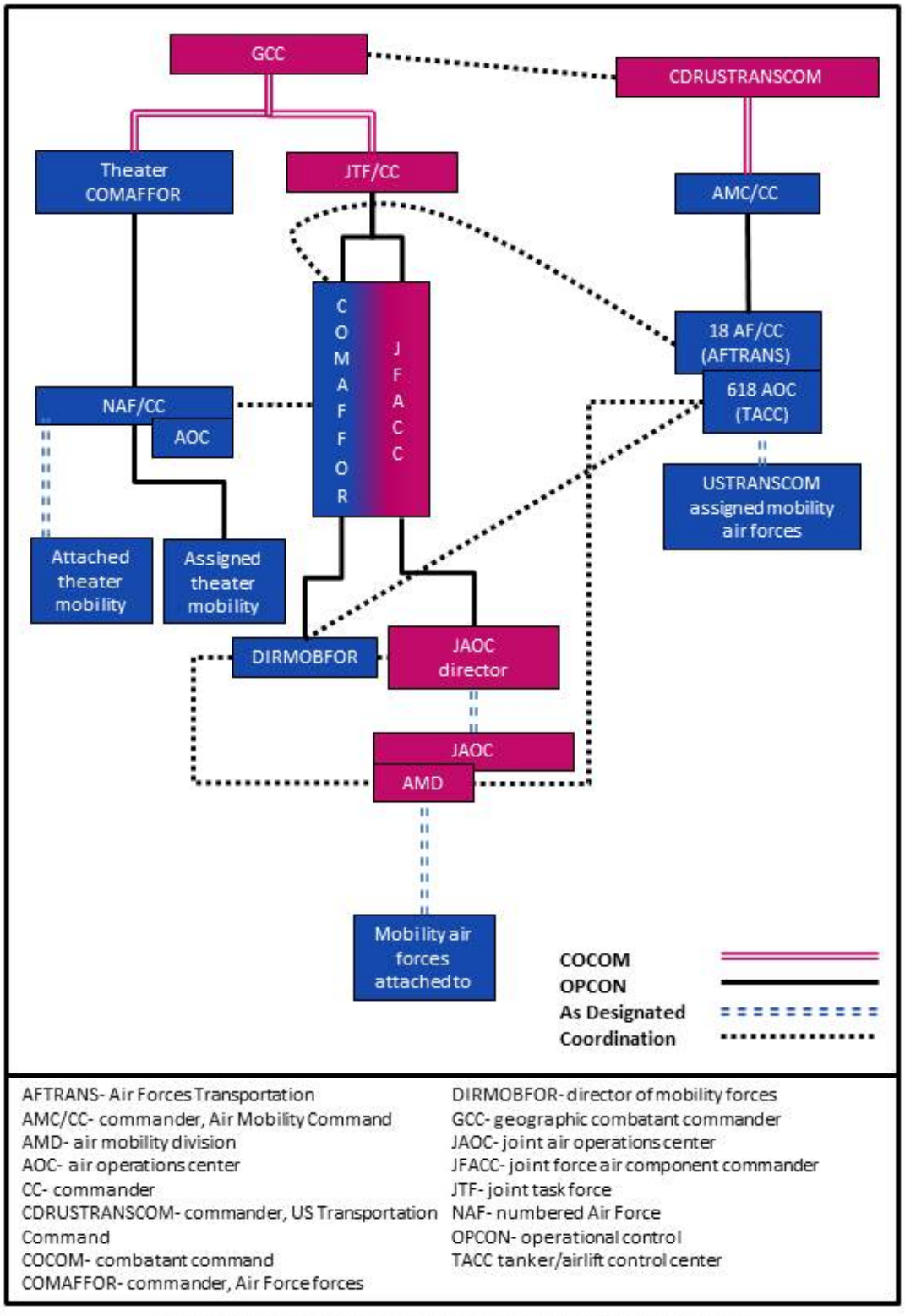
Air mobility serves all combatant commanders as well as other government agencies and is thus normally optimized functionally across geographic commands. In some instances the nature of the operation may require a transfer of mobility air forces (MAF) to the geographic combatant commander (GCC) to enhance unity of effort and responsiveness of air mobility forces in theater. See Annex 3-30 for further discussion on transfer of functional forces to a geographic command. When functional forces participate in operations across multiple area of responsibilities (AOR), a supporting/supported relationship normally exists between the functional component commander (FCC [supporting]) and the GCC (supported). To advise on the FCC's supporting relationship during operations, the commander, Air Force forces (COMAFFOR) may request a director of mobility forces (DIRMOBFOR). The DIRMOBFOR is under the command of the COMAFFOR. Unless the COMAFFOR requests a DIRMOBFOR, the theater's air operations center (AOC) air mobility division Chief fulfills the DIRMOBFOR duties during daily operations. See Annex 3-30, Command and Control, for a more detailed discussion of organization and command relationships.

Air Mobility Command (AMC) is the air component to US Transportation Command (USTRANSCOM) and is also its component major command, making the AMC/CC the COMAFFOR to the commander, USTRANSCOM (CDRUSTRANSCOM). CDRUSTRANSCOM normally delegates operational control (OPCON) to AMC/CC, who normally further delegates OPCON to the commander, Eighteenth Air Force (18 AF/CC) for day-to-day execution. 18 AF is USTRANSCOM's designated component numbered Air Force and is known as Air Forces Transportation (AFTRANS). 18 AF (AFTRANS)/CC delegates tactical control to the 618th Air Operations Center (AOC) (Tanker Airlift Control Center [TACC]) commander for day-to-day operations. For an illustration of these possible command relationships see the figure "Sample Command Arrangements for Mobility Air Forces".



AFTRANS- Air Forces Transportation
AMC/CC- commander, Air Mobility Command
AMD- air mobility division
AOC- air operations center
CC- commander
CDRUSTRANSCOM- commander, US Transportation Command
COCOM- combatant command
COMAFFOR- commander, Air Force forces
DIRMOBFOR- director of mobility forces
GCC- geographic combatant commander
JAOC- joint air operations center
JFACC- joint force air component commander
JTF- joint task force
NAF- numbered Air Force
OPCON- operational control
TACC tanker/airlift control center

Sample Command Relationships for Mobility Air Forces

US TRANSPORTATION COMMAND

Last Reviewed: 5 April 2016

US Transportation Command (USTRANSCOM) provides the air, land, and sea transportation for the Department of Defense (DOD), as well as other government agencies. Commander, USTRANSCOM serves as the single manager of the Defense Transportation System (DTS) and is designated by the Secretary of Defense as the global synchronization and distribution process owner. The DTS includes USTRANSCOM's three Service components: Air Mobility Command (AMC), Surface Deployment and Distribution Command, and Military Sealift Command. USTRANSCOM provides common-user airlift for the entire DOD. Common users are military Services, and other DOD or non-DOD agencies.

The USTRANSCOM/J-3 fusion center receives, processes, and sources all transportation requests. The fusion center determines the best modes and nodes to meet mission requirements. Requirements that must move by air, based on mission timing or security, are tasked to their air component command, AMC.

AIR MOBILITY COMMAND

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Air Mobility Command (AMC) is the Air Force major command primarily responsible for providing intertheater airlift, air refueling, air mobility support, and aeromedical evacuation capability. AMC organizes, trains, equips, and employs its assigned and attached forces to meet worldwide air mobility requirements. As the air component to US Transportation Command (USTRANSCOM), AMC prepares those forces to meet intertheater air mobility taskings.

AMC plans, coordinates, and manages the Civil Reserve Air Fleet (CRAF) program that provides a pool of civil airlift capability made available to the Department of Defense in times of crises. When the CRAF is activated, relevant carrier mission information and changes are directed by AMC via USTRANSCOM's airlift contracting function. Eighteenth Air Force (Air Forces Transportation) (18 AF [AFTRANS]) monitors the carriers' mission execution via the 618th Air Operations Center (AOC) (Tanker Airlift Control Center [TACC]). The individual commercial carriers retain control of crews, aircraft, and support.

AMC is the designated lead command for Air Force air mobility issues and works closely with theater air component commands from each combatant command to establish appropriate standards enabling a smooth transition to contingency operations. In this capacity, AMC develops weapon system standards and integrates command and control processes for the entire mobility air forces (MAF) enterprise. Standardization of processes and procedures is crucial to ensure consistent capability across the MAF.

18 AF (AFTRANS)

18 AF (AFTRANS) is AMC's component numbered Air Force. AMC/CC, acting as the commander, Air Force forces (COMAFFOR), normally delegates operational control (OPCON) of the operational assigned wings to 18 AF (AFTRANS)/CC. 18 AF (AFTRANS)/CC exercises control through its functional AOC, the 618 AOC (TACC). AMC/CC delegates administrative control (ADCON) to 18 AF (AFTRANS)/CC for assigned wings with a flying mission. 18 AF (AFTRANS) exercises OPCON through the 618 AOC (TACC).

Air Force Expeditionary Center

The Expeditionary Center (EC) focuses on all organize, train, and equip aspects for

contingency response, expeditionary combat support training, en route and installation support, and building partnerships missions. With this structure, AMC/CC delegates ADCON of assigned wings with airbase, contingency response, or en route missions from 18 AF (AFTRANS)/CC to the Expeditionary Center commander.

GEOGRAPHIC ORGANIZATION AND CONTROL

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A geographic combatant commander (GCC) exercises operational control (OPCON) over assigned and attached forces and normally delegates OPCON of assigned and attached mobility air forces (MAF) to the theater commander, Air Force forces (COMAFFOR). For example, Commander, US Pacific Command (CDRUSPACOM) delegates OPCON of assigned and attached MAF to the commander, Pacific Air Forces (PACAF), who acts as the theater COMAFFOR to CDRUSPACOM.

> *There will usually be a tension between regionally-organized forces and functionally-organized forces. The former seeks effectiveness at the point of their operation, while the latter seeks effectiveness and efficiency across several regions. At critical times, the requirement for effectiveness may trump efficiency, and additional functional forces may be transferred to the regional command and organized accordingly. These situations require careful and continuing dialogue between competing senior commanders and their common superior commander.*
>
> **—Annex 3-30, *Command and Control***

The COMAFFOR executes control of assigned and attached Air Force mobility forces through the air operations center (AOC). One of the AOC divisions, the air mobility division (AMD), plans, coordinates, tasks, and executes intratheater air mobility operations and, when required, plans, coordinates, tasks, and executes intertheater operations to meet requirements established by the GCC. The AOC coordinates intertheater air mobility support operations with the 618 AOC (Tanker Airlift Control Center [TACC]). A theater COMAFFOR may designate a director of mobility forces (DIRMOBFOR) as a coordinating authority between the 618 AOC (TACC), the geographic AOC's AMD, and joint task force (JTF)-specified command and control nodes to meet all validated air mobility requirements.[1] The COMAFFOR and DIRMOBFOR should ensure intratheater MAF are organized to properly interact with other intratheater and intertheater forces.[2] When air mobility forces are attached to a subordinate JTF, they become part of that air expeditionary task force commanded by the GCC's COMAFFOR.

[1] Joint Publication 3-17, *Air Mobility Operations*.
[2] Ibid.

AIR OPERATIONS CENTER

Last Updated: 5 April 2016

A geographic air operations center (AOC) plans, tasks, and schedules attached and assigned aircraft within and outside an area of responsibility to meet geographic combatant commander (GCC) requirements. The AOC publishes an air tasking order (ATO) on a predetermined cycle (daily, weekly, etc.) to meet its mission requirements during normal operations, and may publish an ATO more frequently during wartime and other contingency operations.

Establishing a routine battle rhythm for air operations is essential to create successful measures of effect, especially in rapidly changing conditions. These situations often require a high level of cargo and personnel throughput and the necessity of quickly constructing a routine command and control (C2) battle rhythm for air assets becomes even more critical to rapid global mobility.

Air Mobility Division

The air mobility division (AMD) plans, coordinates, tasks, and executes theater air mobility missions. The AMD tasks intratheater mobility air forces (MAF) through wing and unit command posts and through applicable C2 nodes deployed forward. The AMD works for the AOC commander and coordinates closely with the director, mobility forces (DIRMOBFOR). The AMD coordinates with the theater deployment and distribution operations center (DDOC) and the 618 AOC (Tanker Airlift Control Center [TACC]).[1] The DIRMOBFOR should be collocated with the AOC to facilitate coordination with the AMD and the other AOC divisions as applicable.[2]

The AMD is normally comprised of four core teams: the airlift control team (ALCT); the air refueling (AR) control team (ARCT); the air mobility control team (AMCT); and the aeromedical evacuation control team (AECT). A fifth team, the air mobility support team (AMST) may also be established if required. Major products include airlift apportionment plans and AR inputs to the AOC's master air attack plan, ATO, airspace control order, and special instructions.

- **Airlift Control Team.** The ALCT provides intratheater airlift functional expertise to plan, coordinate, manage and execute intratheater airlift operations in support of the COMAFFOR.

[1] See AFTTP 3-3.AOC, *Operational Employment – Air Operations Center,* and JP 3-30, *Command and Control for Joint Air Operations,* for details of AOC and JAOC operations. For a listing of responsibilities see AFI 13-1AOC, Vol 3, *Operational Procedures–Air Operations Center*.
[2] *AMC Director of Mobility (DM4) Forces Handbook*, *March 2011, v2.*

- **Air Refueling Control Team.** The ARCT coordinates AR to support combat air operations or to support a strategic air bridge.

- **Air Mobility Control Team.** The AMCT directs or redirects air mobility forces in response to requirements changes, higher priorities, or immediate execution requirements.

- **Aeromedical Evacuation Control Team.** The AECT provides mission planning, scheduling and execution of theater aeromedical evacuation missions and position of aeromedical evacuation ground forces.

- **Air Mobility Support Team.** The AMST may be established to facilitate reports, briefs and analysis to the AMD Chief and provide support to the four AMD teams.

DIRECTOR OF MOBILITY FORCES

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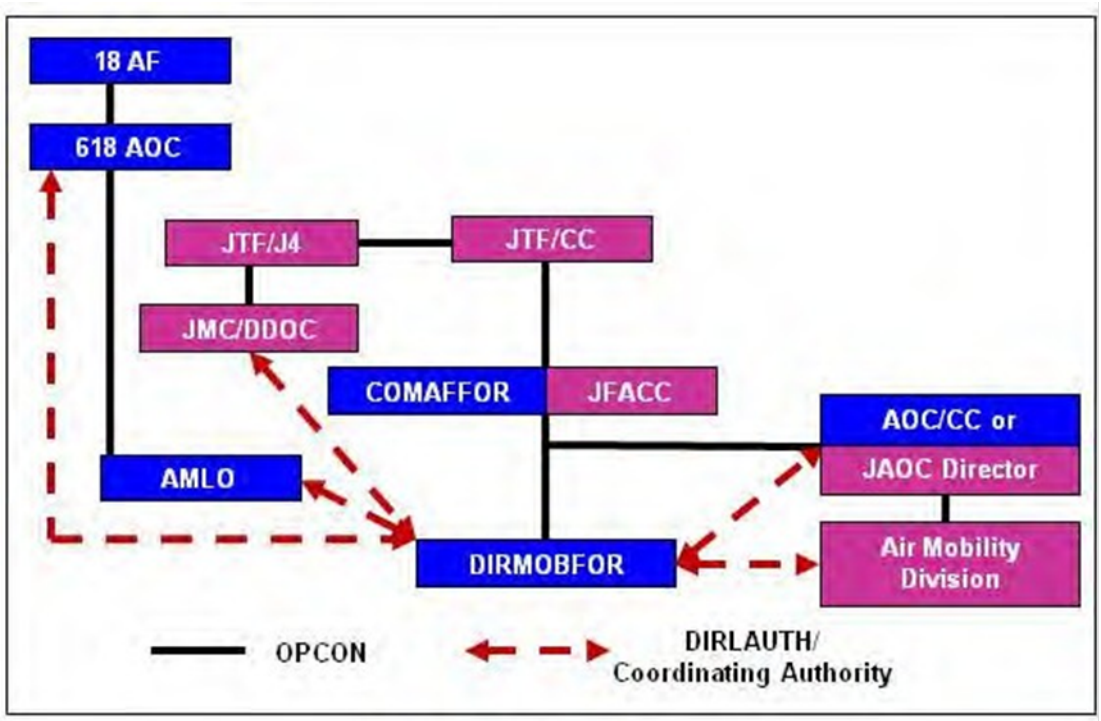
The director of mobility forces (DIRMOBFOR) is a senior mobility officer who is familiar with the area of responsibility and possesses extensive background in air mobility operations. The commander, Air Force forces (COMAFFOR) may appoint a DIRMOBFOR to function as a coordinating authority between the joint task force (JTF), 618 Air Operations Center (AOC) Tanker Airlift Control Center (TACC), theater AOC, the geographic combatant commander's (GCC) J-4, and the joint mobility center (JMC)/joint deployment distribution operations center (JDDOC) to ensure the appropriate prioritization of intertheater requirements in support of intratheather air mobility taskings. The DIRMOBFOR may be sourced from within the geographic combatant commander's (GCC's) organizations or US Transportation Command (USTRANSCOM). Normally, the DIRMOBFOR is attached to the COMAFFOR's special staff and should be given appropriate liaison authority. The DIRMOBFOR provides advice to the air mobility division (AMD) on air mobility matters that should be responsive to the timing and tempo of air operations center (AOC) operations. The AMD remains under the control of the AOC commander who manages the execution of operations for the COMAFFOR.

The figure, "DIRMOBFOR Coordination", illustrates the various agencies with which the DIRMOBFOR may coordinate during an operation.

Specific duties of the DIRMOBFOR include the following:

- Coordinates the integration of intertheater air mobility capability provided by USTRANSCOM.
- Advises on the employment of assigned and attached MAF forces supporting the joint force.
- Coordinates with the AOC commander and AMD chief to ensure all air mobility operations supporting the JFC are integrated into the air assessment, planning, and execution processes, and are deconflicted with other air operations.
- Assists in the integration and coordination of the multinational air mobility plan.
- Coordinates with 618 AOC (Tanker Airlift Control Center [TACC]) and 18 AF (Air Forces Transportation [AFTRANS]) to ensure joint force air mobility support requirements are met.

- Acts as member of the joint logistics coordination board, chaired by the GCC's J4.
- Acts as the senior air mobility officer point of contact for all air mobility operations with the joint deployment distribution center (JDDOC), USTRANSCOM, Air Mobility Command (AMC), 18 AF (AFTRANS), 618 AOC (TACC), GCC J4, and the USTRANSCOM deployment and distribution operations center (DDOC).
- Participates in the daily video teleconference with USTRANSCOM J3, and additional daily video teleconferences with 618 AOC (TACC).
- Performs other duties as specified by the COMAFFOR.



DIRMOBFOR Coordination

AMLO- air mobility liaison officer
AOC- air operations center
CC- commander
COMAFFOR- commander, Air Force forces
DDOC- Deployment and Distribution Operations Center
DIRLAUTH- direct liaison authorized
DIRMOBFOR- director of mobility forces
J4-logistics directorate of a joint staff
JAOC- joint air operations center
JFACC- joint force air component commander
JMC- joint movement center
JTF- joint task force
OPCON- operational control

INTEGRATION OF FUNCTIONAL AND GEOGRAPHIC MOBILITY STRUCTURES

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Commander, US Transportation Command (CDRUSTRANSCOM) exercises operational control (OPCON) (delegated to the Commander, Air Mobility Command [AMC/CC]) over AMC-assigned and attached forces providing support to a geographic combatant commander (GCC). Frequently, specific forces may be established in direct support to a GCC or an organization subordinate to the GCC. When established in direct support, USTRANSCOM forces under the AMC/CC's operational control are normally authorized by USTRANSCOM to respond directly to the supported commander's operational mission requirements. Instead of receiving requirements validated by their owning command, these forces receive requirements validated by the supported command's deployment and distribution operations center (DDOC). High levels of integration and coordination are needed to ensure requirements are passed between air operations centers (AOCs) for planning, tasking, scheduling, and executing, as well as ensuring effective use of resources.

A number of coordination activities should occur for this relationship to succeed. Sufficient forces should be attached, assigned, or directed to support the supported GCC by the Secretary of Defense (SecDef). This maintains lines of authority and clearly identifies the base level of support to both GCCs. The command relationships should be explained and directed with an appropriate operation order.

Transferring Air Mobility Forces

Due to the global nature of intertheater air mobility operations, centralized control of intertheater mobility air forces (MAF) operations normally provides the most efficient and effective use of limited air mobility assets. Centralized control allows USTRANSCOM to maintain oversight of mobility forces, regardless of which theater of operations they are currently operating in.

Decentralized mission execution through AMC's fixed and deployed en route system provides flexibility and responsiveness. The following considerations should be used to assist in the decision whether to transfer MAF to a geographic commander:[1]

- The GCC will use the forces at or near 100 percent of their capability with

[1] Annex 3-30, *Command and Control*.

little or no residual capability for other global missions.

- The forces will be used regularly and frequently over a period of time, not just for a single mission employment.

- The geographic commander has the ability to effectively command and control the forces.

Most intertheater MAF are assigned to CDRUSTRANSCOM. **The decision to transfer MAF from CDRUSTRANSCOM to a GCC should be balanced against competing needs across multiple AORs** and should meet the other criteria described in Annex 3-30, *Command and Control*. See Annex 3-30 for guidance and considerations on transfer of forces.

Direct Support Operations

One form of direct support is the use of MAF airlift aircraft to deliver movement requirements that are either time-sensitive or critical for mission success for deployed Army brigades. The key objective is to assure that immediate, critical airlift needs of the Army are met in a responsive manner. To allow expanded control of these tactical assets, one of the command and control (C2) options was for the SecDef to delegate tactical control of a limited number of airlift assets to the Senior Army Aviation Authority, typically the combat aviation brigade commander (CAB/CC). OPCON and administrative control (ADCON) of these forces remains with the COMAFFOR.

Another C2 option used by the Air Force is to retain operational control (OPCON) of the airlift forces, make use of the common user airlift pool, and apportion a certain amount of that force to support the requirements of the Army. The term direct support-apportioned (DS-A) is commonly used to describe this use of airlift resources. Under this construct, a support relationship is established between the joint force air component commander (JFACC) and the Army combat aviation battalion requesting DS. C2 of airlift forces is retained by the JFACC. However, it compresses the standard AMD request processing time from 72 hours to 24-48 hours to provide improved responsiveness to the CAB/CC. It also provides expanded capacity to the CAB/CC if requirements grow beyond what the capacity of the previous C2 structure would provide. Conversely, if there are daily reductions in theater requirements, those airlift assets can be used to fulfill the standard airlift movement requests existing in the AOR. The DS-A provides effective, responsive airlift to the CAB/CC, while preserving efficient use of the airlift fleet for the JFACC.

COMMAND AND CONTROL OF OTHER AIR MOBILITY OPERATIONS

Last Updated: 5 April 2016

This section discusses command and control of other air mobility-related operations including tanker, homeland, and nuclear operations.

Tanker Command and Control

Normally, operational control (OPCON) of the continental US (CONUS)-based tanker force for operational missions remains with US Transportation Command (USTRANSCOM). However, tanker assets, when authorized by the Secretary of Defense (SecDef), are transferred to a geographic combatant commander (GCC) with specification of OPCON for intratheater operations. OPCON for US Air Forces in Europe (USAFE) and Pacific Air Forces (PACAF) assigned tanker assets rests with their parent GCC and can be provided in support to another combatant command. Typically, the command and control (C2) agency is the AOC for the respective combatant command (CCMD) (e.g., the 601th Air Operations Center (AOC) for US Northern Command [USNORTHCOM] missions).

Homeland Operations

The C2 of mobility air forces (MAF) during homeland operations is the same as the functional and geographic operations discussed earlier. During homeland operations, USNORTHCOM is the geographic combatant command, except for Hawaii and other Pacific territories in the US Pacific Command area of responsibility. First Air Force (Air Forces North [AFNORTH]) supports USNORTHCOM, and uses its AOC for CONUS-based homeland operations, with air mobility expertise and operations obtained from a director of mobility forces and air mobility division, linked back to the 618 AOC (Tanker Airlift Control Center [TACC]).

Domestic emergencies often call for the use of air mobility assets to support civil authorities. The air mobility capabilities of the Department of Defense (DOD) far exceed that of state and local resources, and therefore are a crucial piece of the operational planning in response to civil crises. DOD can provide specialized skills and assets that can rapidly stabilize and improve a situation until civil authorities can effectively respond to the needs of the populace. The focus of defense support to civil authorities (DSCA) is to save lives, prevent human suffering, and mitigate property damage. GCCs prepare plans to support the employment of Title 10 DOD forces, providing DSCA, in accordance with the National Response Framework, a guide to how the nation conducts

all-hazards response. DSCA command structures and requirements are unique and call for specialized support from MAF. DSCA does not include ANG forces formally operating under C2 of the governors of their respective states. See Annex 3-27, *Homeland Operations*.

Nuclear Operations

For nuclear operations, Air Mobility Command, as USTRANSCOM's air mobility component, supports nuclear operations via change in OPCON of air refueling and airlift forces to the commander, US Strategic Command (CDRUSSTRATCOM). For theater nuclear operations, C2 of USTRANSCOM forces mimics conventional theater operations to the greatest extent possible. However, if political considerations warrant that all tanker support to theater nuclear operations must originate from CONUS, CDRUSTRANSCOM maintains OPCON of tankers and provides AR in a supporting role to CDRUSSTRATCOM.

USSTRATCOM provides C2 of air mobility support to nuclear operations via Task Force 294 (TF-294). TF-294 consists of KC-135 tankers, nuclear-certified tanker crews and nuclear-certified C2 personnel. Tankers provide the global reach aspect needed by nuclear bomber and airborne command center aircraft. Specially certified nuclear C2 personnel provide the critical linkage between CDRUSSTRATCOM and tasked KC-135 tanker crews. CDRUSSTRATCOM delegates tactical control to the commander, TF-294, of those tankers attached to USSTRATCOM. Specified airlift assets support critical aircraft regeneration team requirements following execution of strategic nuclear operations. See Annex 3-72, *Nuclear Operations*.

Airlift missions executing nuclear weapons logistic operations are categorized as either prime nuclear airlift force (PNAF) or emergency nuclear airlift operations (ENAO). PNAF missions involve specially qualified and certified crews operating under additional restrictions. PNAF provides the critical air transportation component of the planned logistical movement of nuclear weapons and related material positioned around the world, and is necessary to facilitate international treaties and weapons life-cycle sustainment requirements. When directed, any airlift asset can augment this capability via ENAO to ensure DOD custody of nuclear weapons.

AIR MOBILITY PLANNING STRATEGIC GUIDANCE

Last Reviewed: 5 April 2016

Following the joint operation planning process from Joint Publication (JP) 5-0, *Joint Operation Planning* and Annex 3-0, *Operations and Planning*, air mobility planning should begin with the strategic guidance from the political and military leadership. This guidance includes the global force management process, the Joint Strategic Capabilities Plan, as well as other strategic documents, to assist in developing deliberate and crisis action plans. There are several factors that affect air mobility planning at the strategic level, to include political, physical, and threat environments.

US Transportation Command (USTRANSCOM) and 18th Air Force (Air Forces Transportation) (18 AF [AFTRANS]) develop, analyze, and issue planning guidance for operational plans that balance requirements, capacity, and priorities to adjust the air mobility enterprise to meet the needs of the combatant commanders (CCDRs) and other airlift users in accordance with Chairman, Joint Chiefs of Staff priority system and USTRANSCOM allocation. 18 AF (AFTRANS) planners consult with CCDRs on the development of standing operation plans, operation plans in concept format, and other contingency plans to ensure overall integration of the air mobility operations enterprise into the supported commander's campaign. For additional overall operational planning guidance, see Annex 3-0 and JP 5-0.

AIR MOBILITY PLANNING GENERAL PLANNING CONSIDERATIONS

Last Updated: 5 April 2016

This section focuses on the general planning considerations of the threat environment, the physical environment, and infrastructure. Air mobility operational planners should take these considerations into account when developing air tasking orders (ATO), airspace control orders (ACO), special instructions (SPINS), rules of engagement (ROE), rules for the use of force, and other applicable operation plans (OPLANs) and contingency plans (CONPLANs) according to a commander's intent and objectives.

Infrastructure

As with any military operation, regional politics can have a significant effect on air mobility operations. With a majority of air mobility operations occurring over foreign territories, the decisions made by US political leaders and those of our allies may affect the options available to the air mobility planners. The following are some of the more significant factors.

Partner Nation Support

Support from the countries involved in air mobility efforts is essential, since deployed air operations rely on host nation support to grant access and to promote a smaller footprint. Legal advisors should be consulted to determine what agreements and treaties exist and whether there is a status-of-forces agreement (SOFA) in place. The geographic combatant commander (GCC)/J4 and commander, Air Force forces (COMAFFOR)/A4 should be consulted for acquisition and cross-servicing agreements and mutual logistics support agreements that may exist. SOFAs normally include status of personnel, as well as operating rights and responsibilities and may include waivers of landing fees, duties, taxes, or personnel entry requirements. Failure to adequately ascertain host nation support and provide for any required augmentation can result in significant roadblocks to mission accomplishment.

The ability to obtain diplomatic clearance for both overflight and landing is crucial. Past conflicts have demonstrated that challenges obtaining diplomatic clearances have far-reaching impacts on every air mobility effort. The importance of partner nation support cannot be underestimated. This support is also crucial with regard to petroleum, oils, and lubricants availability due to high consumption rates.

Access

A successful air mobility operation depends on access to networks of facilities and usable destinations, which include airfields and drop zones. Access to theater airspace and airfields throughout the world presents a major limiting factor to air mobility operations. In underdeveloped regions of the world, aircraft often use austere airfields. These may be limited in one or more of the following ways: runway condition and size, taxiway systems, ramp space, fuel (resupply, storage, quality, and handling capabilities), security, materials handling equipment, marshalling/storage capability, aircraft servicing, maintenance, navigation aids, weather observing sensors, and communications. Additional limitations based on access that should be considered include routing restrictions, flow control, terminal instrument procedure restrictions, host base support, and other airfields' infrastructure.

Communications

Airborne mobility missions should be flexible and responsive to the users' requirements. Because of their extended loiter capacity, airborne tankers and airlifters can be redirected whenever their primary mission is changed or canceled. To accomplish this, command and control (C2) elements should maintain flight following of air mobility aircraft to be able to contact them. This should normally be accomplished by the air mobility division (AMD) in the theater or the 618th Air Operations Center (AOC) (Tanker Airlift Control Center [TACC]) if outside the theater. In addition, operational requirements and communication capabilities may dictate that another airborne or ground C2 element relay a new tasking. Bolstered communications security (COMSEC) procedures and mandated low emissions control (EMCON) environments may make it difficult for control elements to maintain contact with airborne tankers. Retasking procedures and frequencies should be thoroughly explained in the SPINS portion of the ATO or the ACO to ensure coordination between aircrews and command personnel. For intertheater missions, the 618 AOC (TACC) is normally responsible for passing the information required to the aircrews and coordinating with and integrating any changes with the receiving geographic AOC. However, if the intertheater forces are under the operational control (OPCON) of the theater COMAFFOR, such communication is executed through the theater AOC.

Base Operating Support

Except in the case of self-sustaining short-term contingency response forces, base operating support (BOS) for deployed forces enhancing the Global Air Mobility Support System should be provided by the GCC's Service component responsible for the airfield or by the host nation when no component has a presence. When insufficient host base BOS exists, deploying air mobility support forces normally are augmented by the appropriate BOS unit type codes drawn from across the command or the Air Force as a whole.

Airspace Control

The use of air mobility in any theater should be integrated into the airspace control plan and any civilian or international airway control system. Air mobility planners should coordinate with the airspace control authority's staff, and obtain diplomatic clearances to ensure airlift and air refueling activities comply with all routes and

procedures through any area they may transit. The nature and intensity of the air operation may require the establishment of specific air traffic corridors and air refueling tracks.

Diplomatic Clearances

Diplomatic clearances include aircraft overflight and landing rights, communications connection approval, personnel visas, and other entry requirements. Customs, immigration, and quarantine requirements (or waiver thereof) can also be critical. Time-phased force and deployment data (TPFDD) flow cannot occur without appropriate clearances obtained in advance. Diplomatic clearances impact footprint, throughput, force protection (FP), and ultimately, operational success, and should be acquired prior to execution of a TPFDD or deployment order.

Legal Issues (Principles of International Law)

Global air mobility operations are governed by international (i.e., US, host/partner nation, and/or the laws of any nation whose sovereign airspace will potentially be used during the course of an operation) and domestic laws. The rights, privileges, and immunities of aircraft differ depending on the status of the aircraft (i.e., “state” or “civil”). Military aircraft are state aircraft. Aircrews and those planning and managing missions outside the continental United States (OCONUS) should consult the Department of Defense *Foreign Clearance Guide* for current, country-specific information. In addition, aircrew and mission planners/managers should be aware of and abide by the applicable ROE when operating outside US airspace.

Medical

The global reach laydown (GRL) team includes medical capabilities designed to reduce the impact of disease non-battle injuries on mission accomplishment in contingency operations and provide limited medical support. The GRL team and associated equipment package deploys with the contingency response group or contingency response element and assesses health risks associated with environmental and occupational health hazards for deployed personnel, in support of establishing a potential main operating base in a forward deployed location.

Multimodal Ports and Hubs

Planners should be aware of multimodal ports when designing airlift plans. Ninety percent of intertheater cargo goes by sea, often with intratheater airlift as the final segment. Multimodal hubs act as a force multiplier, enabling maximum efficiency for high demand airlift assets and provide resiliency of logistics through alternate delivery channels.

Geography

Some areas of the world are isolated geographically, and therefore air mobility remains the best source of supply. Operations in such areas naturally increase the demand for airlift. Multimodal options in these areas are often reduced.

Climatology/Weather

Weather effects on air mobility operations present ongoing challenges. Incorporating the impact of climate and weather effects on air mobility operations should be part of planning for all activities. For example, weather greatly reduced airlift for Bosnia in 1996 and tanker capability in Kosovo in 1999, and extreme heat limited airlift execution in Kuwait during Operation IRAQI FREEDOM. For additional information, see Annex 3-59, *Weather Operations*.

Threat Environment

Mobility air forces (MAF) operate in a wide variety of threat environments across the spectrum of conflict, performing a variety of missions. Air mobility operations can be flown in threat environments that include conventional military forces, insurgents, and terrorists. Adversary capabilities can range from basic small arms to later-generation man-portable air defense systems or even radar-guided surface-to-air missiles and anti- aircraft artillery. While conducting operations in a wartime environment, air mobility aircraft should be able to depend upon friendly forces to suppress enemy air defenses and provide threat warning support. However, during contingency or peacetime operations, friendly FP and intelligence, surveillance, and reconnaissance (ISR) support may be limited or absent. Planning factors for chemical, biological, radiological, or nuclear threat environment operations should include operational and clearance decontamination levels for aircrew and aircraft. MAF planners should consider applicable elements within the cyberspace domain to ensure maximum visibility and response options during operational planning and execution.

ISR

ISR support is required to effectively and accurately describe the battlespace and threat environment, and their impact on air mobility operations.

Threat Working Group

The AMC and theater threat working groups (TWGs) are the air mobility focal point for coordinated global risk analysis and for developing recommendations to mitigate identified threats and vulnerabilities. The TWG conducts an annual review of the global threat to air mobility operations that establishes baseline risks, sets risk assessment production requirements, and determines minimal FP recommendations. In addition, the TWG monitors for changes to the threat environment; conducts risk analysis to support new operations, missions, and requirements; and reviews daily OCONUS missions for new or emerging FP concerns. Information is then provided to TWGs within each operational area.

Threat Mitigation

Timely and accurate intelligence reduces vulnerabilities and is essential to air mobility mission planning. Intelligence personnel provide information about enemy composition, vulnerabilities, capabilities, intentions, and probable courses of action for air movement operations. Employing proper EMCON, operational security, and COMSEC procedures helps to ensure that the information environment of any military operation is kept secure. Mitigation recommendations cover a variety of options and can include the requirement for defensive systems and aircraft armor to mitigate the

surface-to-air fire threat, restrictions on remaining overnight or requirements to carry PHOENIX RAVEN security forces to protect the crew and aircraft while on the ground, or restrictions on allowing contract/Civil Reserve Air Fleet commercial flight operations.

CONCEPT DEVELOPMENT

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Concept development is part of the planning process, and is driven by the end state established for an operation. When considering how to meet customer needs, operational planners should address command and control (C2), distribution plan, intelligence, aircraft and force allocation, airlift planning, air refueling (AR) planning, air mobility support planning, aeromedical evacuation (AE), planning, and multiple fuel and energy planning considerations. A team of cross-functional subject matter experts may be convened to determine the range of options and address limitations in preparation of staff estimates, develop courses of action (COA), or satisfy other planning requirements.

Command and Control

Once the distribution plans and force allocation decisions have been made, commanders can focus on the best C2 structure to use for the air mobility assets in a given operation. This structure may vary depending on whether they include intertheater or intratheater air mobility assets.

Distribution Plan

Before determining proper employment concepts, planners should first determine the global distribution plan, to include where air mobility assets plan to operate, and the restraints and constraints to those air mobility assets.

Intelligence

Timely and accurate intelligence reduces vulnerabilities and is essential to air mobility mission planning. Intelligence personnel provide information about enemy composition, vulnerabilities, capabilities, intentions, and probable COAs that could impact air mobility operations. Intelligence professionals develop priority intelligence requirements (PIRs) to address the specific information needs of air mobility commanders. PIRs can include threat from air defenses, threats and vulnerabilities at airfields transited by air mobility aircraft, and changes to the operational environment that could impact air mobility plans or operations. Critical information should include:

- Recent enemy order of battle data.
- Enemy integrated air defense system capabilities.

- Enemy information operations capabilities.
- Area of responsibility (AOR)-specific airfield, drop zone, and landing zone information.
- AOR-specific maps, charts, and imagery for air mobility mission planning and execution.
- Chemical, biological, radiological, and nuclear (CBRN) threat information.
- Vulnerabilities to information and information systems that support airlift operations.

Aircraft and Force Allocation

Once requirements are validated and air mobility forces are allocated and apportioned, planners can allocate airframes based on the commander's priorities. It is important for planners and commanders to understand the distinct phases of the tasking process.

Combatant commanders (CCDRs) request airlift and air refueling support based on the tasks to be performed. Deployments should be managed via a time-phased force and deployment data (TPFDD) or time-phased force and deployment list (per crisis action planning), with passengers and cargo normally moved by contingency airlift, while channel missions normally move sustainment. Deployment of combat aircraft requiring air refueling support is also managed via a TPFDD. The supported CCDR, in coordination with supporting CCDRs and Services, establishes movement requirements. Requirements for Joint Chiefs of Staff (JCS) exercises or contingencies are scheduled through the joint planning process, after which a TPFDD or deployment order (DEPORD) is developed. Prior to movement, the CCDR validates the TPFDD or DEPORD transportation requirements. US Transportation Command (USTRANSCOM) evaluates the supported command's validated requirements, then passes this requirement on to Air Mobility Command (AMC) for identification and scheduling of intertheater airlift requirements. The geographic combatant commanders (GCC) use their air components to plan and execute intratheater requirements.

Commanders and planners should consider the following to request and task airlift and AR: They should identify the requirements and prioritize the movements; validate the requirements and allocate the number and types of aircraft needed; task the appropriate units and coordinate actions among the user, unit, and planners; schedule the movement process; and then assess the results through review of the transportation effects.

When planning air mobility operations, there are several factors to consider before deploying forces. After thorough review of all the requirements of the supported joint force commander (JFC) and the capabilities and limitations of the supporting forces, planners should determine whether to employ forces in an intertheater or intratheater role. There are several different inter-and intratheater air mobility operational concepts to consider. See the "Aircraft Employment Methods" section of the Airlift Operations doctrine topic module.

Airlift Planning

Airlift planning applies to the full spectrum of air mobility missions and is designed to enable mobility air forces (MAF) to sustain critical operations in any environment. Airlift planners should consider aircraft capabilities, mobility planning factors, aircrew limitations, overflight restrictions, CBRN risk, and en route infrastructure to effectively plan support for campaigns, operations, and missions.

Air Refueling Planning

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

The efficient use of tankers and fuel is secondary to mission accomplishment. However, every attempt should be used to make efficient use of these scarce resources. AR capability can be increased without increasing the number or size of tanker aircraft by matching tanker aircraft types against receiver mission requirements. This involves judicious use of refuelable reliability tankers, assigning individual tankers to multiple receivers or receiver sets, and ensuring receiver AR requests accurately reflect their mission requirements. The considerations for daily, steady-state allocation decisions are much the same as for contingency allocations. When developing daily tanker allocations, planners should consider boom versus drogue requirements, emphasis on total offload versus booms in the air, use rate, altitude requirements of the receiver, and special operations forces/sensitive reconnaissance operations aircraft requirements.

Delivering AR offloads more efficiently allows customers to do more with the same number of tankers. An efficient tanker support plan delivers more fuel per sortie, allowing strike packages to loiter longer and strike deeper into enemy territory, thereby enhancing the air superiority mission. By enhancing their effects, customers can use fewer resources or rededicate those assets to unmet requirements to further increase their combat impact.

Air Mobility Support Planning

Successful deployment and employment of US forces and materiel depend upon the timely and accurate planning of all US support systems. The Global Air Mobility Support System (GAMSS) enables air mobility, so air mobility support forces are effectively integrated into the initial deployment flow for effective contingency or crisis action planning. See Annex 3-0, *Operations and Planning* for additional planning factors.

These forward forces manage the deployment of intertheater and intratheater assets for AMC and the supported CCDRs and, when a contingency is complete, the redeployment of US forces. Their effectiveness is directly related to a commander's understanding of a number of planning factors. Each factor should be considered to ensure the GCC's requirements and objectives are achieved. All factors are interrelated and therefore should not be considered in isolation. Coordination between theater planners and air mobility support forces normally ensures adequate force support.

There are a number of specific planning factors having varying degrees of influence on the ultimate success of the MAF. Some planning factors are regarded as throughput critical—key factors in the successful throughput of forces and materiel at any given location. Included in this category are manpower; crash, fire, and rescue; materials handling equipment (MHE); airfield capabilities; and petroleum, oils, and lubricants (POL). These factors are critical because they determine the maximum number of aircraft and amount of cargo or passengers that can be handled at a location. Coordination by planning staff should include all combat support-related capabilities to ensure installations are capable of supporting mission elements.

Patient Evacuation Planning

Patient evacuation planning requires the integration of joint- and Service-specific capabilities into the JFC's concept of operations. Medical planners are an integral part of the airlift planning team and should build appropriate patient evacuation support into the en route care structure. The medical planners should interface with the airlift and logistics planners to ensure the bedlift plan integrates airflow and medical capabilities along airlift routes.

Airlift routes should be identified to establish potential patient evacuation plans. Theater evacuation policy, airframe considerations, airfield capability, potential hostile or terrorist location, PHOENIX RAVEN security forces, base operating support (BOS), communications, crew support, and interface with special mission forces are several factors to be considered when planning the en route care laydown.

A medical planner should be incorporated into the air operations center (AOC) to outline, develop, and coordinate theater patient evacuation plans along airlift routes, including number and location of AE assets needed to support operational requirements. Additional support may be requested from Air Mobility Command (AMC)/A3O, 18th Air Force (Air Forces Transportation) (18 AF [AFTRANS]) and the AMC Surgeon General via reachback to support the operation. Medical planners also assist geographic and component commands, as required.

A senior officer with extensive AE experience and knowledge of plans and operations should be considered for the chief of the aeromedical evacuation control team (AECT) in the AOC's air mobility division (AMD). This individual directs the actions of the AECT and offers patient evacuation planning and execution guidance to the AMD Chief.

Patient Movement Items/Aeromedical Evacuation Support Equipment

Patient movement items (PMI) are the jointly assigned supplies and equipment necessary to support patient movement within the en route care system. Medical logistics and AE personnel manage inventory availability at PMI centers, cells, and nodes and ensure asset visibility and flow of PMI through available transportation methods to meet requirements. Asset visibility is provided via the PMI tracking system (PMITS). Deployed PMI system teams collocate at key interface points and theater medical treatment facilities (MTFs) to provide initial patient evacuation capability, sustain patient evacuation operations, and minimize equipment turnaround time. During contingency operations, PMI assets and PMITS requirements are initially identified by the CCDR and pushed to support patient

movement at key patient insertion points in the AE system. Steady-state PMI support is supplied by the combatant command as required. See AFTTP 3-42.8, *Expeditionary Medical Logistics System*.

POL and Energy Planning Considerations

As part of the larger maneuver force that comprises the modern military, air mobility is dependent on aviation fuel to perform the mission. Tanker aircraft cannot support airbridge or combat operations if their fuel supply is constrained or made unavailable by the adversary. Every effort should be made to conserve and protect this critical resource.

Ideally, fuel should be readily available at beddown locations as well as air cargo hubs. Lack of fuel at forward operating bases (FOBs) has a tremendous impact on cargo throughput as airlift aircraft displace needed cargo with turn-around fuel. Operations at forward operating locations should be limited in scope and duration or a reliable source of aviation fuel should be quickly obtained for larger or extended operations.

Tanker bases should be located as far forward in the operational area as possible while remaining tethered to a robust and secure fuel source. The distance which fuel is delivered limits offload, increases flight time, and results in greater operational fuel burn by MAF aircraft. It may increase the overall number of tankers and crews needed to support the demanded offload requirements and multiply the number of bases and MAF support needed in the operational area, thereby further expanding the logistics footprint and mission cost.

POL planning and requirements should include the amount needed for both 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.

PLAN DEVELOPMENT

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Once the strategic guidance and concept development are complete, air mobility planners can begin to look at the following cross-sectional factors which affect plan development: Aircrew/operations support, air mobility support, materials handling equipment (MHE), petroleum, oils, and lubricants (POL), aerospace ground equipment (AGE), replacement spares package, special support equipment, patient movement items/aeromedical evacuation (AE) support equipment, weather, and maximum on ground. Some of these factors impact every element of the overall plan. Planners should reference each of these when developing the overall air mobility operation plan (OPLAN) or contingency plan (CONPLAN).

Cross-sectional Air Mobility Planning Development Factors

This section addresses supporting equipment and service factors that should be considered when developing an air mobility plan.

Air Mobility Support

During the deployment and redeployment phases of any operation, manpower requirements for the Global Air Mobility Support System (GAMSS) are normally predictable. These requirements are identified in the time-phased force and deployment data (TPFDD) associated with a particular OPLAN, or identified as precursor movements if a deployment order (DEPORD) is used. The GAMSS is composed of five different tasks: onload, contingency tanker task force, stage/en route, hub/transload, and spoke/offload. The manner in which forces are organized directly affects GAMSS responsiveness and versatility. As the requirements and the tempo of operations change, so does the GAMSS force structure. The result of this arrangement is an en route support system that rapidly expands during contingencies or periods of intensive air mobility operations to meet increased demands of airlift and air refueling (AR) aircraft. When the increased level of air mobility operations subsides, the en route support system shrinks back to peacetime requirement levels.

Materials Handling Equipment (MHE)

A key resource critical to throughput of cargo and personnel is MHE. MHE includes all ground equipment necessary for cargo loading and unloading, a capability that should be analyzed during both the deliberate and crisis action planning processes. Commanders and planners should coordinate closely to ensure the right types and

quantities of MHE are available to support successful operations. It is essential to get MHE/GAMSS items in the TPFDD early to increase throughput and permit overall TPFDD efforts. Likewise, the GAMSS force commander should pare and tailor the deployable equipment to meet each tasking. Not only should MHE be a planning factor, it should be properly identified for TPFDD insertion for early deployment within the air mobility flow. The TPFDD should be evaluated for any over or outsize cargo or equipment to determine if aircraft loader requirements (i.e. multi-pallet trains) exist. When planning war reserve materiel for use, MHE should be fully operational, tasked in sufficient quantity, and be of the correct type. An assessment of host-nation MHE capability is a key factor to consider. MHE available at a forward location should lessen airlift requirements.

Aerospace Ground Equipment (AGE)

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

Replacement Spares Package

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

Special Support Equipment

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

Aircraft Rescue and Fire Fighting

Mission planners should determine what aircraft rescue and fire fighting capabilities exist at the airfield, and if they are sufficient for the planned operation.

Weather

Accurate and timely weather information is essential in all phases of air mobility operations. The climatology for an area is an important consideration during the planning of airlift and AR operations. Historic measurements of temperature, precipitation, ceiling, visibility, etc., impact equipment or supply requirements (e.g., navigation aids and deicing or snow removal equipment) that should be programmed into the OPLAN. During planning and execution of air mobility missions, accurate and timely weather information identifies weather conditions that could potentially limit or enhance operations. This information provides planners and operators the opportunity to adjust aircraft flow, cargo loads, and timing to ensure effective, efficient, and safe task accomplishment. Additionally, space and atmospheric weather conditions have a significant impact on communications for command and control (C2). Anticipating space and atmospheric weather impacts and creating alternate plans when necessary enhance air mobility operations. See Annex 3-59, *Weather Operations*.

Working Maximum on Ground

The maximum number of aircraft at a given location that can be simultaneously turned is called working maximum on ground (MOG). Parking MOG is the physical parking spaces available for Department of Defense airlift aircraft and contract carriers. It should not exceed the number of spots identified on the most current parking plan and may be limited by factors such as host/partner nation agreement, hazardous parking spots available, or other infrastructure limitations. Local commanders determine working MOG based on the most restrictive of multiple planning factors (e.g. manpower, servicing equipment, etc.) and notify appropriate C2 and planning agencies for dissemination.

AIRLIFT EFFECTS

Last Updated: 5 April 2016

Airlift provides the core of the Air Force's ability to deploy and sustain itself as well as the other Services and government agencies worldwide. Transport aircraft as well as air refueling aircraft perform airlift operations. Airlift forces provide the joint force with rapid global mobility, generating strategic, operational, and tactical effects across the range of military operations. Whether projecting combat power in new operations, providing logistics for sustainment of current operations, aeromedical evacuation, or conducting humanitarian missions, airlift is a vital component for success.

Mobility forces allow the joint force to rapidly respond to military operations around the globe. Airdrop and airland delivery operations meet the fundamental principles of speed, mass, and maneuver. They deliver combat power throughout operations including initial combat deployment, airdrop of personnel and equipment, and forcible entry. The effect is constant pressure on adversaries. Airlift sustains joint forces through combat support. Organic and commercial aircraft provide rapid and responsive resupply of personnel and equipment into areas which may not be reached by other modes of transportation. These forces also provide retrograde of equipment and injured personnel. The effect is persistence of combat operations across the operational area. Airlift forces can support humanitarian relief operations and noncombatant evacuation operations (NEO). These missions provide flexible support through airdrop and airland operations delivering medical care and relief supplies. They may also execute NEO from hazardous environments. The effects are lives saved and rapid recovery.

AIRLIFT OPERATIONS

Last Updated: 30 August 2016

Airlift has several basic operations: Passenger and cargo movement including operational support aircraft, combat employment and sustainment, aeromedical evacuation (AE), nuclear airlift, and special operations support. Air Force airlift forces perform these operations to create strategic, operational, and tactical level effects that support national objectives across the range of military operations.

Delivery Options

Payloads are delivered via two methods: airland or airdrop. Each method has its distinct advantages and disadvantages.

Airland Delivery

Airland delivery occurs when a transport or tanker aircraft lands and unloads its cargo. Airland is the preferred method of delivery because it is usually the most efficient, safest, and least expensive way to deliver personnel and cargo. Airland operations also allow for back-haul capability, including AE. Airland can be conducted in austere airfields with minimal ground support and security on a limited contingency basis. Extended basing operations require secure, suitable, and conveniently located airfields with appropriate air mobility support assets to facilitate offload. Sound operational procedures, well planned base defense, and rapid offloading and onloading techniques associated with various airlift aircraft can minimize some of the constraints of airland delivery. Commanders should view airland delivery as the method of choice for most air movements.

Advantages of Airland over Airdrop Delivery:

- Provides greater unit integrity and rapid unit deployment after landing.
- Eliminates payload dispersal associated with airdrop.
- Carries the least risk of injuring personnel and damaging loads.
- Requires minimal specialized training and equipment for transported personnel.
- Requires less special rigging and packaging of materiel than airdrop.

- Permits the maximum use of allowable cabin loads by eliminating the volume and weight penalties of preparing loads for airdrop deliveries.

- Maximizes the opportunity to backhaul cargo and evacuate personnel.

Constraints of Airland Delivery:

- Requires suitable airfields or assault landing zones (ALZs) that are moderately level, unobstructed, able to sustain the aircraft's weight, of appropriate length and available for the anticipated operation.

- Increases intervals between aircraft deliveries depending on an airfield's infrastructure and support capability

- May require mission support such as ground-handling equipment, transportation assets, and onward movement and distribution networks.

- Prolongs exposure to air or ground attacks.

- Most effective with suitable lighting and instrument-approved equipment for anything other than day operations in good weather.

Operation DESERT STORM's Left Hook

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

—AMC Historian

Operation VITTLES

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

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

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

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

Airdrop

Airdrop is defined as "the unloading of personnel or materiel from aircraft in flight."[1] Most airdrop procedures use parachutes to deliver loads to the ground, such as heavy equipment, container delivery systems, and personnel. This delivery method allows rapid insertion of combat forces to numerous target areas. Another airdrop procedure is free fall delivery. This involves dropping relatively small items, such as packaged meals or unbreakable objects like hay bales without the use of a parachute. Airdrop allows commanders to project and sustain combat power into areas where a suitable airfield, ALZ, or a ground transportation network may not be available.

Advantages of Airdrop over Airland Delivery:

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

Constraints of Airdrop:

- ✪ Carries an increased risk of injury to personnel or damage to cargo.
- ✪ Requires special training for riggers, transported personnel, and aircrew.
- ✪ Limits cargo loads because additional rigging is required for airdropped materiel.
- ✪ May decrease aircraft range due to low-level ingress/egress and formation tactics employed.
- ✪ Increases mission planning time and complexity; requires additional intelligence preparation.
- ✪ Increases cost of resupply due to decelerators, rigging, and lost opportunity of the additional cargo which could have been carried on an airland mission.
- ✪ Increases likelihood of dispersed airdrop cargo vs. airland delivery
- ✪ More susceptible to unfavorable **weather** conditions that may reduce the effectiveness of airdrop.

[1] JP 3-17, *Air Mobility Operations*

Operation ENDURING FREEDOM

Since 2005, yearly airdrop requirements have nearly doubled each year, from approximately 2 million pounds delivered in 2005 to an estimated 97 million pounds in 2011. Airdrop requirements will continue to grow as US and Coalition troops remain in forward operating bases (FOBs) over the course of the long war.

Not only have airdrop requirements increased, but they have also become much more challenging with the complex terrain, weather, an adept adversary, and the proximity of civilian populations to the FOBs. The MAF has met this challenge with more precise, flexible, survivable, and sustainable tactics, techniques and procedures (TTPs). As this airdrop requirement continues to grow, and we gather lessons learned from these missions, the TTPs will continue to adapt to the changing environment.

—2011 International Airdrop Symposium

Airlift Missions

There are a variety of airlift missions conducted across the range of military operations. The nature of what is to be carried drives the type of airlift mission. These missions are not mutually exclusive, and may be accomplished even on the same sortie. Different types of missions require differing levels of support, planning, experience, crew qualifications, equipment, and resources to complete. Missions may be subject to different constraints and operational guidance. Airlift missions at their core move people and cargo.

Airlift Employment Methods

The commander, Air Force forces (COMAFFOR) normally determines how best to employ intertheater and intratheater airlift operations in the theater or joint operations area (JOA) and when, based on the type of airlift operations and the dynamics of the environment, to assume command and control of intertheater airlift operations. The COMAFFOR's determination may involve the recommendation for attachment of additional forces and laydown of command authorities. This following discussion presents the different employment and delivery methods for airlift operations.

Hub and Spoke

Hub-and-spoke operations integrate both intertheater and intratheater airlift operations. See the figure, “Employment methods; Direct Delivery and Hub & Spoke,” for an illustration of the hub and spoke concept. Starting from an aerial port of embarkation (APOE), the movement of cargo and personnel progresses through one or more en route staging bases to arrive at a main operations base (the hub) or aerial port of debarkation (APOD) within a theater.

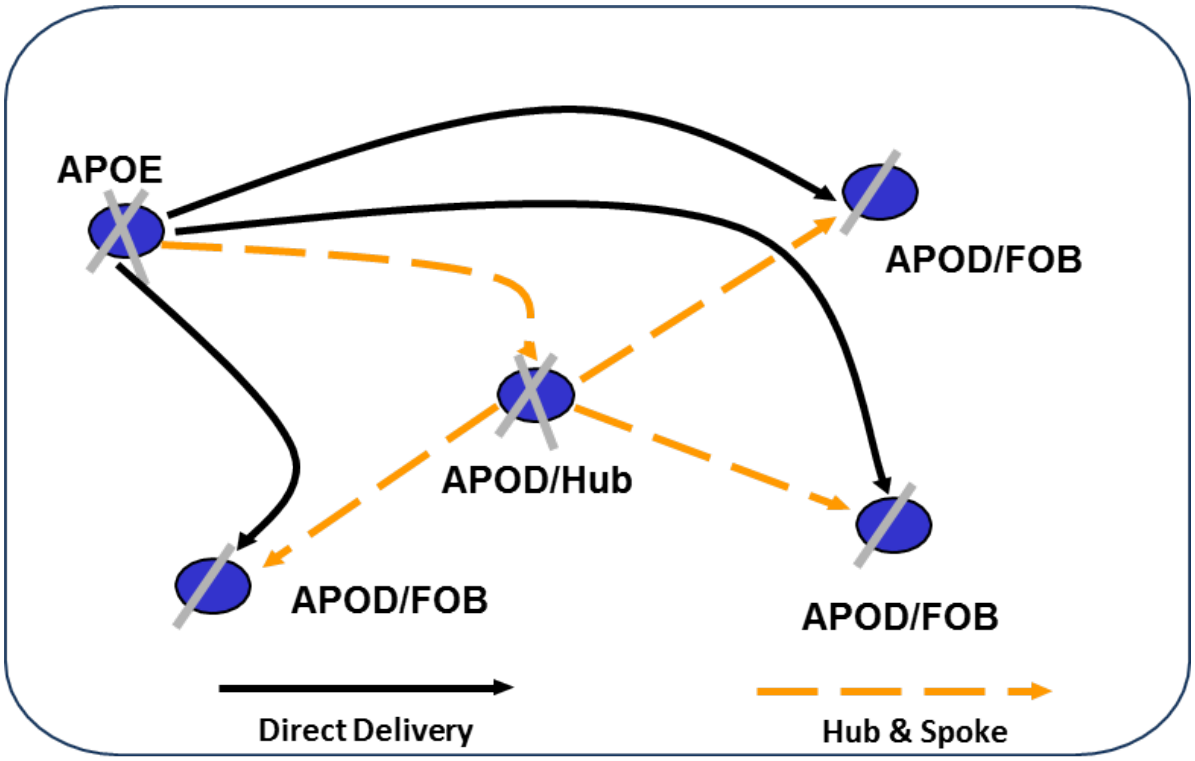
The hub is the focal point for follow-on intratheater airlift missions. Cargo and personnel are processed and readied for transshipment by intratheater assets to forward operating bases (FOB)—the spokes, throughout the theater. The hub and spoke method optimizes air mobility operations when supporting multiple operational commanders and operations. It permits load consolidation to maximize lift capability and allows for transload to specialized aircraft (e.g., landing zone (LZ)-capable, defensive system equipped, smaller aircraft, etc.). This method is comparable to a move that goes from door to central warehouse to door.

During contingency operations, intertheater hub-and-spoke deliveries may be restricted from landing at a particular APOD/FOB due to JOA dynamics (e.g. threats) and consequently required to land at another location. In these scenarios, intertheater movements typically transload to intratheater forces for movement onward to the destination. To ensure this process flows properly, the director of mobility forces (DIRMOBFOR) should deconlict intertheater hub-and-spoke operations with the COMAFFOR.

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

Intertheater Direct Delivery

Direct delivery is normally an intertheater flight that can bypass en route stops by airlifting personnel and materiel from the APOE directly to final destinations within a theater. It serves as the method of choice for timely, effective delivery of cargo and passengers. As with hub-and-spoke deliveries described above, during contingency operations, intertheater direct deliveries may be restricted from landing at a particular APOD/FOB due to JOA dynamics (e.g. threats) and consequently be required to land at another location. In these scenarios, intertheater movements typically transload to intratheater forces for the movement onward to the destination. To ensure this process flows properly, the DIRMOBFOR should deconflict intertheater hub-and-spoke operations with the COMAFFOR.



Employment Methods: Direct Delivery and Hub & Spoke

APOD- aerial port of debarkation
APOE- aerial port of embarkation
FOB- forward operating base

Direct delivery has advantages and disadvantages associated with its effectiveness. The advantages include quicker arrival and an avoidance of transloading cargo to intratheater aircraft at an intermediate staging base. Direct delivery shortens in-transit time, reduces congestion at main operating bases, and enhances the sustainment of forward bases. It also reduces cargo handling and transloading. The disadvantages include limited aircraft maintenance, cargo and passenger handling, parking, and less fuel servicing capability than a hub airfield, which may complicate mission planning. It also emphasizes the need for a full load going to a location to maximize lift capability. Direct delivery may also necessitate longer, less flexible flight profiles, which can reduce payload capability or require air refueling (AR) and augmented airlift aircrews, thereby increasing resource requirements. Direct delivery is at its optimum when carrying a full cargo load. This method is comparable to a move that goes from door to door.

Intratheater Direct Support (Theater Direct Delivery)

Direct support intratheater air mobility missions are coordinated between the air operation center's (AOC) air mobility division (AMD) and the deployment and distribution operations center (DDOC), if one exists, and tasked by the appropriate AOC. According to the typical command relationships among US Transportation

Command (USTRANSCOM) mobility air forces (MAF), 18th Air Force (Air Forces Transportation) (18 AF [AFTRANS])/CC normally exercises operational control (OPCON) of direct support missions during execution, though tactical control (TACON) may be granted by the Secretary of Defense (SecDef) to the geographic combatant commander (GCC), then to the COMAFFOR, for combat airdrop or other special missions. When GCCs conduct these missions utilizing their assigned or attached forces (e.g. PACAF, USAFE), OPCON is normally exercised through their respective AOC.

A theater may require an enduring intratheater capacity for outsized cargo or to move larger numbers of passengers. In some cases, common user intertheater requirements may require that airlift forces be attached with specification of OPCON or TACON to GCCs or joint task force (JTF) commanders. An alternative method may be to establish a support command relationship between commander, USTRANSCOM and the using GCC. USTRANSCOM makes aircraft and crews available for tasking to the supported GCC. The theater DDOC validates requirements which are then planned and executed by the theater AMD or 618 AOC (TACC).

Stage, or "Lily Pad" Operations

Aircraft ranges, crew requirements, and mission limitations may dictate the need for intermediate stops, referred to as stage or "lily pad" operations. The final leg into the operational area may terminate at the final destination or at a theater hub. These intertheater operations leverage existing en route support locations and may place a heavier burden on global air mobility support system.

Air Bridge

Intertheater air bridge operations are flights between continental United States (CONUS) and outside the CONUS (OCONUS) terminals where the receiver aircraft's range is augmented by an in-flight refueling on designated AR tracks. The DIRMOBFOR should judge the capabilities of, and requirements for, tankers assigned or attached to the theater and advise the COMAFFOR of their ability to provide air bridge support.[1] The costs and benefits of such an operation should be considered, as numerous resources are committed to support these actions. Most air bridge tanker operations supporting intertheater movements are planned and executed by the 618 AOC (TACC) using 18 AF (AFTRANS), not theater, AR resources.

Intratheater Channel or Round Robin

Intratheater channel or Round Robin operations are regularly scheduled intratheater missions. These missions typically follow the same routing on the same days and allow predictability for users and planners, though may not always be efficient. This concept should be used when requirements are stable and predictable enough to allow sufficient use of the asset. The predictable nature of these missions may

[1] Joint Publication 3-17, *Air Mobility Operations*.

present an elevated threat risk in hostile or contested environments. The benefit is that no requirement to stop en route is necessary.

Contract Airlift

Contract airlift is a cost-effective method for delivery of combat supplies when US military assets are unavailable or unsuited for the mission. Several contract carriers now exist that specialize in logistics support. Their smaller, specialized aircraft are often more suitable for missions in remote areas where it is unsafe or ineffective to operate larger aircraft. The larger assets can provide alternative outsized cargo delivery options comparable to C-5s or C-17s.

Transload Operations

Transload is a concept for deploying into a high-threat operational area under conditions that restrict the use of strategic deployment assets (i.e., large aircraft such as the C-5 or KC-10 or CRAF aircraft). USTRANSCOM establishes a transload operation outside the operational area at a safe installation permissive to civilian Department of Defense contract or Civil Reserve Air Fleet operations. From this forward transload operation, MAF military aircraft equipped with aircraft defensive systems, if required, are used to complete the sustainment, evacuation, or delivery of personnel and materials on aircraft that can operate on more austere airfields. MAF use one or a combination of three deployment options: Direct delivery to the theater, air-to–air transload, or air and sea transload (multimodal transload).
Transload operations are how the hub and spoke works. While an air bridge supports the movement of airlift aircraft from one location to another, transload operations involve the transfer of assets from one aircraft or mode of transportation to another.

Multimodal Operations

USTRANSCOM conducts multimodal operations when combatant commanders place requirements moving large equipment items in volume. Recent examples entail moving US Army combat aviation brigade helicopters or several hundred vehicles to landlocked operational areas. Multimodal operations serve as USTRANSCOM's effort to achieve effectiveness and efficiency. An example of a multimodal operation is where equipment departs CONUS via sealift (the most economical means for transporting large equipment items) and arrives at a permissive seaport near the operational area. Success in seaport selection lies in securing an adjacent airfield capable of supporting wide-body aircraft operations. Upon port arrival, USTRANSCOM uses its ground transportation options in moving equipment from the seaport to the airfield.

USTRANSCOM then uses cargo aircraft for the final leg placing the equipment in the operational area. This blend of sealift, ground transportation, and airlift serves as the most efficient and effective method in moving large numbers of large equipment items.

Airlift Control in Vietnam

The airlift system which evolved over the years spanned the entire country of South Vietnam. This enabled the US forces to exploit the inherent flexibility of airlift and ensure rapid response to priority and emergency requirements.

The system was tailored to the in-country logistics patterns. Basically, Vietnam comprised four logistics "islands," with shipping lanes and Military Airlift Command airlift channels connecting them to the CONUS or Western Pacific supply sources….

From the Air Force point of view the key to responsive airlift was the centralized command and control structure which unified the various control elements into an airlift system. Objectives were positive control, continuous customer liaison, deployed turn-around capability, and real time monitoring of aircraft and cargo movements. A centralized control structure permitted the airlift commander to be in immediate contact with all flying units, operating locations, customer representatives, and aircraft in flight. The commander could redirect the airlift effort as required and thus respond to tactical demands.

—*Tactical Airlift in Southeast Asia*, a Project CHECO (Contemporary Historical Examination of Current Operations) Report, 1972

AIR REFUELING EFFECTS

Last Updated: 5 April 2016

Air refueling (AR) is the passing of fuel from an airborne tanker aircraft to a receiver aircraft. It is an integral part of air mobility and brings added capability to combat, combat support, and air mobility for all airpower operations. AR enhances the unique qualities of airpower across the range of military operations. It is equally applicable to all stages of a contingency: deployment, employment, sustainment, and redeployment; as well as to ongoing, steady-state operations. It serves as a force enabler to operations and multiplies the effects of operations at the tactical, operational, and strategic levels of war. It allows air assets to rapidly reach any location 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, persistence, and flexibility of other aircraft performing missions like combat air patrol or intelligence, surveillance, and reconnaissance operations. The ability of AR to extend the range of aircraft and airborne forces and provide presence and persistence occurs through its force enabling, force multiplier, and force extension capabilities. These provide the joint force commander the ability to maneuver and mass forces at a time and location where the enemy is least prepared, to deter, dissuade, or destroy.

Operations ODYSSEY DAWN and UNIFIED PROTECTOR

During March 2011, Moammar Ghadafi's regime began firing on Libyan civilians in an attempt to quell civil unrest. On March 19th, coalition forces began enforcing U.N. Security Council Resolution 1973 to protect civilians and civilian populated areas under threat of attack. In preparation for kinetic strikes, the US quickly deployed several KC-135 tankers to Moron Air Base, Spain. Air refueling enabled coalition fighter aircraft to use distant bases that otherwise would not have been within range of the targets. Highlighting the tanker force projection and force enabling concept, three B-2 bombers flew from Whiteman Air Force Base, each refueling four times, enabling them to destroy hardened shelters used by Libyan fighter-bombers. Throughout "Operation ODYSSEY DAWN", tanker crews routinely flew 10-hour missions extending the on-station time of coalition fighters.

AR is a force enabler permitting aircraft to remain airborne beyond their unrefueled ranges. It is a crucial part of global strike and global mobility operations. Positioning forces outside the enemy's reach permits a greater portion of combat assets to concentrate on offensive rather than defensive action, thereby enhancing initiative, force protection, and economy of force. It is also a force multiplier permitting receivers to maximize payload without jeopardizing endurance.

Force extension is the AR of one tanker by another. Consolidating fuel from one tanker to another effectively increases flexibility and reduces the number of airborne tankers required while maximizing offload capability. This capability can also be used whenever the fuel requirements of an escorting tanker and its receivers exceed the tanker's takeoff fuel capacity. Since the takeoff fuel load decreases as the amount of payload carried increases, tankers operating "dual role" as airlifter and tanker (transporting a combination of passengers and cargo while performing AR) may require force extension. A number of tanker aircraft are equipped as receivers and can be force extended. Force extension provides the benefit of extending the deployment range of receiver packages by ensuring the supporting tankers do not have to make en route fuel stops.

Although other Services and nations maintain some organic capability, mobility air forces possess the overwhelming preponderance of common-user tanker assets. These assets are capable of refueling most Air Force, Navy, Marine, and coalition aircraft and can accommodate many foreign aircraft.

AIR REFUELING OPERATIONS

Last Updated: 5 April 2016

Air refueling (AR) creates opportunities for the use of in-flight refuelable aircraft in operations. Whether keeping surveillance aircraft on station to observe adversaries, refueling airlifters flying long direct delivery missions, or enabling sustained strike operations; AR is an invaluable part of overall Air Force capability.

Nuclear Operations Support

AR supports nuclear operations in several ways:

Bomber Support

Tanker assets are incorporated into nuclear operations to support bomber strike requirements. AR provides the nuclear-equipped bomber force the ability to deliver their payload to any location in the world and recover to suitable reconstitution bases. Through AR, the payload, range, and endurance of bomber aircraft is significantly increased, further enhancing their flexibility to strike at distant targets. Bombers may be launched during periods of increased tension and proceed to orbit areas well beyond the range of enemy missiles or attack aircraft, providing flexible options to national senior leadership. With AR the bombers can maintain this orbiting status until they are directed to fulfill their mission or are recalled.

Reconnaissance in Support of Nuclear Operations

The greatly enhanced flight endurance provided by AR is also an indispensable component of reconnaissance in support of nuclear operations. It enables the reconnaissance assets to provide timely and accurate intelligence information to the command authorities.

Command and Control Aircraft Support

In the same manner, the greatly enhanced flight endurance provided by AR is an indispensable component of the strategic airborne command post concept. It provides the President and Secretary of Defense the ability to continue to direct military action from an airborne platform.

Global Strike Support

Tankers give strike platforms the ability to reach any target globally without relying on intermediate basing locations. This provides the ability to rapidly strike targets in distant

locations and recover to safe areas. Depending on the situation, tanker assets may be transferred to other combatant commanders in support of existing operation plans. AR provides continental United States (CONUS)-based airpower forces a global presence, providing geographic combatant commanders with greater capabilities than they may otherwise have available.

Air Bridge Support

An air bridge creates an air line of communication linking the CONUS and a theater, or any two theaters. AR makes possible accelerated air bridge operations since en route refueling stops are reduced or eliminated. It reduces the number of aircraft on the ground at staging bases, minimizes potential en route maintenance delays, and enables airlift assets to maximize their payloads. This significantly increases the efficiency and effectiveness of airlift operations by making possible the direct delivery of personnel and materiel. It is an effective method for moving forces in the initial days of a conflict; however, the level of effort required is significantly increased and such operations may reduce the number of tankers available for other potential missions like combat support. Outside the continental United States, tanker basing may be a requirement for air bridge operations.

Aircraft Deployment Support

Tankers extend the range of deploying combat and combat support aircraft, often allowing them to fly with few or no stops en route to an area of responsibility. AR increases the deterrent effect of CONUS-based forces and allows rapid response to regional crises. The capability of aircraft to fly non-stop to a theater may eliminate the need to obtain landing rights from countries remaining neutral in a conflict. Deployment support is key to achieving successful expeditionary operations. The deployment support operation is considered a separate and distinct operation because the coordination, communication, and search and rescue responsibilities differ based on receiver capabilities. Deployments of heavy aircraft (bombers, airlifters) normally use an air bridge operation for primary support. This operation can also be associated with the movement of fighter aircraft between theaters in the form of missions named CORONETs.

CORONETs move fighter aircraft in support of contingencies, rotations, or exercises for logistics purposes and normally include extended overwater legs. Joint Publication 3-17, *Airlift Operations*, defines CORONET as "*a peacetime movement of air forces in support of rotations, exercises, or aircraft movements for logistic purposes."* These flights may include a dual-role cargo- and passenger-carrying element as well as refueling. They normally have long lead times for planning, tasking, and execution, and the tanker portion of the flight is normally planned by the 618th Air Operations Center (AOC) (Tanker Airlift Control Center [TACC]). CORONET operations usually have a higher priority than routine training operations. Depending on operational requirements, the 618 AOC (TACC) may position tanker aircraft and crews in preparation for deployment and may coordinate with the theater AOC for AR support, if required. Typically the tanker accompanies the receivers for the majority of the flight, especially during an oceanic crossing.

Theater Support (Combat Air Refueling Support)

During a combat operation, the highest priority for intratheater AR forces is normally supporting combat and combat support aircraft executing the air portion of the joint force commander (JFC)'s campaign. This is especially true during the initial phases of a conflict. Combat aircraft may be based well outside enemy threats to protect themselves from hostile attack, and may need tankers to give the range and increased weapons load necessary to engage targets. AR increases the endurance of air combat support assets. Airborne command and control; battle management; and intelligence, surveillance, and reconnaissance aircraft are used to manage, direct, conduct, and assess air combat operations. Without in-flight refueling, these assets have limited endurance and require extensive regeneration periods between sorties.

Tankers allocated for theater support may occasionally be called upon to provide support to air bridge operations, especially supporting direct delivery missions. The director of mobility forces judges the capabilities and requirements of tankers assigned or attached to the theater to determine their ability to provide air bridge support and recommend proper allocation to the commander, Air Force forces (COMAFFOR). When tanker requirements for theater support operations exceed availability, the COMAFFOR, with the assistance of the DIRMOBFOR, may request increased augmentation from the joint force commander (JFC).

Special Operations Air Refueling Support (SOAR)

SOAR enables special operations forces to maintain a long-range operating capability, as well as endurance and persistence in an operational area. Air Mobility Command (AMC) maintains AR crews trained to air refuel special operations aircraft. Successful operations require specialized equipment, crew training, and operational procedures. When assigned or attached to a joint task force, these forces may fall under a special operations functional component commander who reports directly to the JFC.

AIR REFUELING: JOINT AND MULTINATIONAL OPERATIONS

Last Updated: 5 April 2016

Joint and multinational operations require unity of effort. When working with other Services and nations, differences in procedures and terminology may provide challenges. Therefore, tactics, terminology, and procedures should be standardized when working in joint or multinational operations. For example, Allied Tactical Publication 56(B), *Air-to-Air Refueling*, was published for North Atlantic Treaty Organization (NATO) members to standardize in-flight refueling operations within a NATO context. While detailed procedures depend on aircraft type, mode of employment, and national requirements, most allies should achieve sufficient commonality. Commanders of multinational forces should determine a common set of doctrine, tactics, and procedures for operations. Because airspace availability is a limitation in refueling operations, standardizing multinational formation procedures allows assets to operate in compressed airspace. Standardization is critical when refueling multiple receivers or multiple formations.

Air Refueling Airspace

Most intratheater air refueling (AR) is conducted in airspace specifically designated for AR. In peacetime, AR information, i.e., airspace boundaries, altitudes, and communication data, is published in flight information publications. During a contingency, AR airspace, as well as routing to and from the AR airspace, may change in response to air operations and enemy threats. Applicable AR information is published in the daily and weekly airspace control plan, airspace control order , and special instructions , and should be followed carefully to avoid conflicts or hazardous situations, especially during joint or multinational operations where the risk of midair collisions in theater is high.

There are generally two types of refueling areas: tracks and anchors. The choice of track or anchor depends on several factors such as receiver mission and routing, number and routing of tankers, offload required, receiver number and type, weather, time available to accomplish rendezvous and refueling, and availability of airspace. At times both types of refueling areas may be used to facilitate the same operation. For example, pre-strike refueling may be accomplished in an anchor to facilitate package formation, and post strike refueling may be accomplished along a track to facilitate recovery of receiver aircraft. In addition, special purpose AR areas may be established through the use of an altitude reservation. Detailed information on AR track and anchors for peacetime operations can be found in Federal Aviation Administration Joint Order 7610.4 (Special Operations), chapter 10 (Aerial Refueling), or the theater-specific instruction.

Tracks

AR along a designated AR track is the preferred method for intertheater refueling. Normally, tracks have a designated AR entry point, rendezvous initial point, rendezvous control point and a designated AR exit point. Tracks are used when receiver aircraft are required to maintain a predetermined aspect to an objective area. Finally, AR tracks are best when either tanker or receiver performance would be impacted by multiple turns.

Anchors

OAF Airspace Structure

Airspace control for air refueling operations is vital. During Operation ALLIED FORCE, air refueling concerns mandated a dramatic restructuring of effort to ensure mission accomplishment and safety were both given their due. Additional information on airspace control can be found in Annex 3-52, *Airspace Control*.

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

AIR MOBILITY SUPPORT AND CONTINGENCY RESPONSE

Last Reviewed: 5 April 2016

Within the range of combat support capabilities are three functional areas: air mobility command and control (C2), aerial port, and air mobility maintenance, which collectively comprise air mobility support. For additional information on combat support, see Annex 4-0, *Combat Support*.

Air mobility support forces are divided between Air Mobility Command (AMC), which controls the majority of assets in support of USTRANSCOM's functional role, and the geographic combatant commanders (GCC) who control sufficient assets to meet their specific regional needs. These forces, combined with operating locations and the interrelated processes and systems that move information, cargo, and passengers, make up the global air mobility support system (GAMSS). This structure consists of a number of continental United States (CONUS) and en route locations, as well as deployable forces capable of augmenting the fixed en route locations or establishing operating locations where none exists.

Air mobility operations may dictate the use of contingency response (CR) forces, especially at austere locations or during a rapidly developing crisis. CR forces provide the three core air mobility support functions but also include additional combat support functions, enabling them to operate the airfield and to sustain themselves. These additional functions include weather, civil engineering, security forces, medical, contracting, finance, communications, logistics, air traffic control, public affairs, intelligence, legal and airfield operations. They can be tailored to meet the specific requirements of the operation. AMC owns the preponderance of the CR forces, which can be tasked to respond to contingencies globally. Additionally, there are limited CR forces assigned to GCCs.

Air mobility support and CR forces are drawn from regular and Air Reserve Component forces. Collectively, these components provide the forces which comprise the CONUS and overseas GAMSS organizations as well as deployable forces stationed primarily in CONUS. These components support operations across the range of military operations.

Joint entities requiring CR capability typically request a contingency response group, which may not necessarily be the requirement. Just as requesting agencies should refrain from asking for a specific airframe (e.g., C-5, C-17, C-130), requests should state the requirement or desired effect.

FUNCTIONS OF AIR MOBILITY SUPPORT

Last Updated: 5 April 2016

Air mobility support—command and control (C2), aerial port, and maintenance as well as forces at en route locations—are tasked to provide these services, but can also be augmented with additional functions (such as combat support, aircrew flight equipment, and intelligence) to create a more robust throughput and support capability. The level of support throughout the global air mobility support system (GAMSS) can be tailored to match the mission requirements. Additionally, deployable air mobility support forces can expand the GAMSS at existing locations or establish capabilities where none exists. Deployable air mobility support forces are designed for short-term deployments.

Command and Control Systems

Whether operational control is exercised by Commander, US Transportation Command (USTRANSCOM) or a theater commander, Air Force forces, air mobility support forces provide their own C2 systems to plan, flow, and track air movements and provide in-transit visibility (ITV) of equipment and passengers. Communication requirements may include various radio and satellite communications systems, and 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. USTRANSCOM-assigned mobility support forces normally use this capability to report to the 618th Air Operations Center (AOC) (Tanker Airlift Control Center [TACC]), while theater-assigned support forces normally report to their theater AOC.

Among the most important services that GAMSS provides are ITV and flight following. Commanders depend on accurate, timely ITV of assets to efficiently manage those assets and associated supporting operations. Consequently, the effectiveness of the GAMSS relies significantly on the integration of C2 data into a comprehensive ITV picture. (NOTE: In selected cases, Air Force Special Operations Command special tactics teams can provide limited initial C2 capability for both air traffic control and aircraft reporting.)

Aerial Port

An aerial port is an airfield that has been designated for the sustained air movement of personnel and materiel. The GAMSS possesses a robust aerial port capability. In order to be responsive as a throughput network, fixed en route aerial port operations are sized to ensure a minimum throughput capacity is maintained at all times, based not on steady state workload, but on established planning factors. Deployed aerial port operations, on the other hand, are usually sized to meet the forecasted workload requirements of the operation they are supporting. 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 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 movement manifests and ITV data.

The Aerial Port Role in Vietnam

The aerial port role was critical in tactical airlift. In the Tet Offensive and siege at Khe Sanh in 1968, aerial port facilities were saturated. Aircraft were delayed for loading or unloading; the limiting factor was not aircraft or aircrews, but the ability of the aerial port to move the cargo. It became apparent to tactical airlift personnel that the Air Force must maintain an active, progressive aerial port nucleus capable of rapid expansion and able to meet requirements of contingency operations, even as US forces withdrew.

—*Tactical Airlift in Southeast Asia*, a Project CHECO (Contemporary Historical Examination of Current Operations) Report, 1972

Maintenance

The ability to provide basic maintenance at all times, particularly for airlift aircraft, is critical to global mobility. Designed primarily to support air mobility aircraft operations, en route maintenance units are not intended to provide sustainment maintenance. In addition, the contingency response wing provides mobile GAMSS maintenance capability comprised of mostly cross-functional maintenance specialties designed to provide aircraft marshalling, parking, refueling, and limited aircraft repair capability. When specialized aircraft repair capability is required at a forward location that exceeds the core capacity at the site, a maintenance recovery team can be deployed to accomplish the repair. As a rule, planners and units receiving maintenance augmentation from GAMSS forces should consider supplementing maintenance capability as soon as practical to ensure continued operations.

COMMAND AND CONTROL OF GAMSS FORCES

Last Updated: 5 April 2016

Commander, US Transportation Command (USTRANSCOM) normally exercises operational control (OPCON) of USTRANSCOM-assigned air mobility support and contingency response (CR) forces to retain the flexibility to reallocate resources in response to shifting priorities. Global air mobility support system (GAMSS) forces assigned or attached to the geographic combatant commanders (GCC) are generally under the control of the theater commander, Air Force forces (COMAFFOR). Command relationships between higher authorities and the various air mobility support forces are critically important, and are normally formally established whenever they undertake a mission.

Air Mobility Command's (AMC) fixed en route system serves as the execution arm of GAMSS. The air mobility operations wings (AMOW) that comprise the en route system are considered "forward located." This structure is essential to providing a responsive fixed en route network because it ensures the AMOW/CC has the authority to shift assets internally to keep all nodes of the en route "theater" at a capacity commensurate with the operational demand. Furthermore, the AMOW's command and control (C2) elements serve as a forward branch of the 618th Air Operations Center (AOC) (Tanker Airlift Control Center [TACC]); each air mobility squadron (AMS) responds to the direction of the 618 AOC (TACC) with respect to mission priorities and changes. Once the specified teams are placed on deployment orders, commander, 18 AF (Air Forces Transportation [AFTRANS]) normally exercises OPCON through the 618 AOC (TACC). Deployed C2 elements then serve as a forward branch of the 618 AOC (TACC), and the CR forces respond to 618 AOC (TACC) direction with respect to mission priorities and changes. Except for a full airbase opening package, the GAMSS is not self-sustaining over extended periods. Usually, fixed and mobile teams operating outside the continental United States (OCONUS) rely heavily on supported commanders or host nation for base operating support. GAMSS should clearly articulate their requirements and establish the proper support agreements.

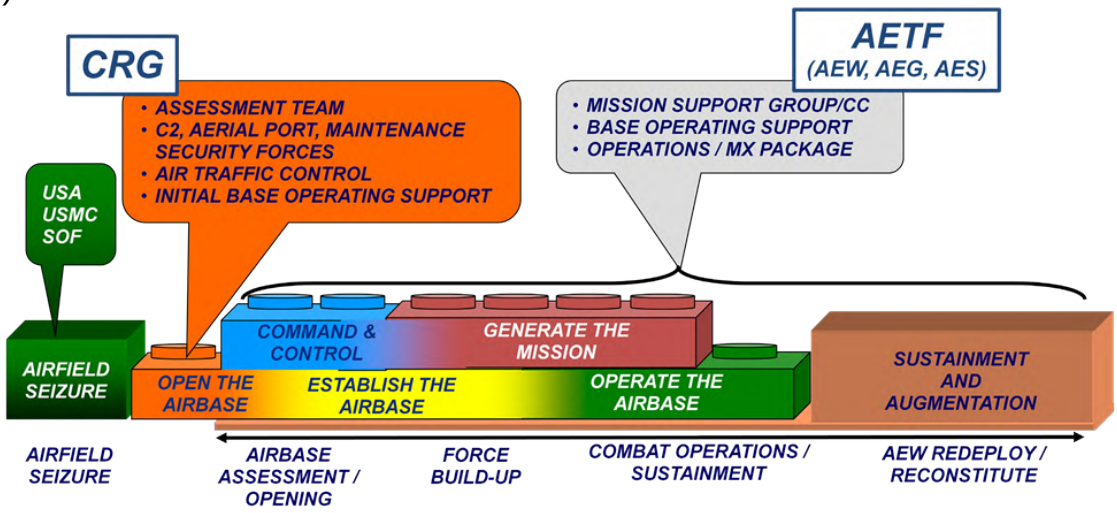
Operation UNIFIED RESPONSE

Following the January 12, 2010, earthquake in Haiti, US military forces supported the international disaster relief effort. US Air Force contingency response forces were quickly tasked to manage airfields supporting the relief effort. A rapid port opening element from the Army joined an Air Force CRG to form USTRANSCOM's JTF-Port Opening (JTF-PO). *An aerial port of debarkation was established at the Toussaint Louverture International Airport in Port-au-Prince. Additionally, the CRG was declared the senior airfield authority, assuming responsibility for parking every aircraft that transited the main ramp, offering cargo offloading services to every user, loading every evacuating American citizen, providing command and control for all fixed wing operations, and ensuring airfield/perimeter security. In total, the CRG worked over 6,000 sorties, downloaded 31,000,000 pounds of humanitarian cargo,*

AIRBASE OPENING

Last Updated: 5 April 2016

Contingency response (CR) forces are normally the first Air Force presence on an expeditionary airbase regardless of how the base is gained (e.g., base seizure or acceptance from a host nation) or which follow-on US entity operates the base. CR forces are eventually replaced by follow-on forces (see figure "Airbase Opening Force Module Construct"). When opening a base, CR forces normally coordinate actions with theater command elements to ensure theater-specific responsibilities such as force protection (FP) meet requirements. All deployed CR forces should integrate with the host for FP and communications. Defined operational areas and responsibilities for CR personnel should be specified during planning of seizure and airbase opening operations. Additional issues that should be considered during planning may include the handoff of the airfield from any seizure force to the contingency response group (CRG) or other Global Air Mobility Support System (GAMSS) element, CRG/GAMSS element to follow-on unit, and redeployment and reconstitution of the CRG/GAMSS units once other expeditionary support forces are in place (normally not later than D+45 days).



Airbase Opening Force Module Construct

AEG- air expeditionary group
AES- air expeditionary squadron
AETF- air expeditionary task force
AEW- air expeditionary wing
C2- command and control
CRG- contingency response group
MX- maintenance
SOF- special operations forces
USA- US Army
USMC- US Marine Corps

Operation JUST CAUSE: Air Mobility Liaison Officers Supporting Joint Forcible Entry

On 18 December 1989, the President directed the Joint Chiefs of Staff to execute Operation JUST CAUSE. The US invasion of Panama began on 20 December 1989 with an airborne assault by special operations forces onto strategic installations in Panama City and the airfield at the Rio Hato military complex

At 0100, 20 December 1989, nearly 1,300 Rangers of Task Force RED jumped over multiple objectives. At 0145 an additional 2,700 troopers from the 82d Airborne Division conducted an airborne assault onto Torrijos-Tocumen Airport, joining the Rangers in the largest US airborne operation since World War II. Among those forces parachuting onto the Torrijos-Tocumen Airport was a tactical airlift liaison-officer (TALO) in support of the 82d Airborne Division. (Now designated as air mobility liaison officers [AMLO]). His mission was to support efforts to clear the runway, accomplish drop zone surveys, and communicate when the runway was ready for aircraft.

The airfield was cleared of equipment and debris and capable of receiving aircraft just two days after D-day. Following the capture of General Manuel Noriega, the TALO worked with 82d Airborne Division Headquarters staff to coordinate the redeployment of 82d Airborne Division forces and equipment.

This operation and the similar 26 March 2003 combat airdrop of 954 soldiers of the 173rd Airborne Brigade onto Bashur Airfield in Northern Iraq highlight the value of integrating AMLOs into the assault force during joint forcible entry operations. AMLOs are trained and equipped to employ forward with their aligned Army and USMC units. AMLOs supporting the US Army's airborne units maintain the airborne qualification to support the joint forcible entry capability.

VARIOUS SOURCES, including personal account from Lt Col (ret) William J. McCrindle (3rd Brigade 82d Airborne Division TALO); Operation Just Cause: Lessons for Operations Other Than War, RAND, 1996 (Jennifer Morrison Taw); and Operation JUST CAUSE: The Planning and Execution of Joint Operations in Panama, February 1988–January 1990, Joint History Office, 1995 (Ronald H. Cole).

AIR MOBILITY DIVISION AUGMENTATION UNITS

Last Updated: 5 April 2016

Most theater air operations centers (AOCs) are manned to support day-to-day theater air mobility requirements. As a result, Air Mobility Division (AMD) augmentation units provide a rapid, tailored, worldwide, operational level command and control (C2) of intratheater air mobility assets to a combatant commander's (CCDR's) needs. An AMD augmentation unit extends an existing theater AOC's AMD infrastructure, through both in-place employment and rapid forward deployment capabilities, and presents forces to warfighting unified commanders by focusing on meeting our nation's global air mobility requirements. Each AMD augmentation unit presents trained personnel in the areas of airlift, air refueling, C2, logistics (airlift requirements/aerial port and aircraft maintenance), and aeromedical evacuation planning and execution. Additionally, an air mobility operations squadron (AMOS) can provide limited combat airspace, intelligence, C2 systems administration, and supply, to augment an AOC's support and specialty teams.

AMD Augmentation—Phased Approach

Each AOC is sized and tailored to its specific mission/theater of operations. The AOC usually plans, exercises, executes, and assesses across normalized steady-state operations. Availability of AMD augmentation capability should consider probable strategic warning as well as response time of augmentation sources (regular and Air Reserve Component [ARC] augmentation units). There are four phases (A through D) of AMD augmentation:

✪ **Phase A—Pre-conflict Steady-state Operations (day-to-day operations).** This is the existing AMD manning and team composition prior to contingency operations (i.e., the "going-in" state). Different theaters present different steady state operations depending on the number of theater assets owned or the type of missions being performed.

✪ **Phase B—Build-up and Initial Response**. Once a contingency operation begins and the existing AMD is unable to meet its demands, a cadre of AMD augmentation personnel arrive to execute the AMD's core competencies of airlift, tanker, and AE planning and execution. AMC, working with Air Combat Command, has postured two regular AMOSs to meet this initial response need as part of the rapid augmentation team concept. Additionally, there are ARC AMOSs available for AMD augmentation. Normally, the focus of the effort is on time-phased force and deployment data (TPFDD) closeout and supporting movements for initial beddown of forces. The timeframe

associated with this phase is most likely on the order of weeks, until the TPFDD close-out date and initial beddown are complete.

✪ **Phase C—Major Operations**. The AMD manpower may dramatically increase based on the given scenario. Replacing regular AMD augmentation forces deployed during phase B operations with ARC AMD augmentation personnel enables the initial augmentation forces to redeploy and reconstitute for other contingency requirements that may arise and sets conditions for the transition to phase D—Sustainment Operations.

✪ **Phase D—Sustainment Operations**. During phase D operations, the AMD is more robust than the phase A steady-state, but usually has fallen into a more predictable routine. Operations remain on a wartime footing; however, theater taskings and manning requirements are relatively stable. Augmentees may still be required, depending on the baseline, pre-contingency manning for the applicable AMD, but these individuals can be trained and positions filled using ARC AMD augmentation units or extended temporary duties.

Regular AMD rapid augmentation units are not designed or manned to provide long-term phase D sustainment augmentation to the AMD. Their core competency, and the capability they provide, is a short-term rapid response to global contingency air mobility C2 needs. The manning requirements of phase D may become the “new normal” and come to define the augmented AMD’s new phase A—steady-state operations. At this point, the AOC may decide that long-term augmentation of sustainment operations is warranted.

The phases described above are not necessarily linear. Phase D, sustainment operations, can roll back into phase B, initial response, for another portion of the theater, or phase C, major operations.

A theater AMD can be tasked to support a wide variety of missions along the spectrum of conflict. This diversity of requirements inhibits mobility air forces (MAF) from identifying one “standard” AMD profile capable of supporting all of the AOCs. Instead, examining AMD augmentation from a phased perspective offers a way to tailor AMD augmentation with the right forces, in the right place, at the right time.

AEROMEDICAL EVACUATION

Last Updated: 5 April 2016

The aeromedical evacuation (AE) system provides time-sensitive mission critical en route care to patients to and between levels of care (e.g. Role I-V). The Air Force's AE capability comprises a system of systems including AE liaison teams, AE crew stages, AE crews, critical care air transport teams, tactical critical care evacuation teams, other specialty teams and en route patient staging systems. These forces execute patient movement predominately on mobility air forces aircraft, as well as aboard sister Service, contracted, and international partner airframes. AE forces operate as far forward as air operations occur. The system is designed to be flexible to operate across the spectrum of potential scenarios and interface with joint, multinational, and special operations forces. For more information on medical operations, see Annex 4-02, *Medical Operations*.

AEROMEDICAL EVACUATION EFFECTS

Last Updated: 5 April 2016

Aeromedical evacuation (AE) forces may be tasked across the range of military operations. In certain circumstances, AE forces may also be tasked to evacuate injured or ill host nation personnel, enemy prisoners of war, detainees, and coalition forces in patient status. AE improves casualty recovery rates by providing timely and effective en route medical care of sick and wounded patients to medical facilities offering appropriate definitive medical care. The AE system provides patient movement by air, clinical specialty teams, specific patient movement items (PMI) equipment for in-flight care, patient staging facilities, command and control (C2) of AE forces and AE operations, and support to the communication network between airlift C2 agencies.

The Air Force is responsible for the AE mission. Air Mobility Command (AMC) is the Air Force's lead command for AE. AMC is charged with the responsibility to operate the common-user AE force and to procure and execute commercial augmentation (i.e., civilian air ambulance). AMC/Surgeon General (SG) is the US Transportation Command (USTRANSCOM)/SG's execution agency responsible for resourcing, maintaining and recycling PMI medical equipment to support Department of Defense (DOD) patient movement. It oversees the global patient movement requirement center. 18 AF (Air Forces Transportation [AFTRANS]) manages and operates the AE intertheater and hub and spoke operations, and provides AE elements and planning assistance to all theaters of operation. United States Air Forces in Europe (USAFE) and Pacific Air Forces (PACAF) are responsible for their theater-assigned AE units and associated airlift units. During contingencies where requirements exceed theater AE capabilities, AMC normally provides tailored augmentation forces to support increased intratheater requirements and expands or establishes the intertheater capability to support movement between theaters of operation or to the continental United States (CONUS), as required.

Theater Air Mobility Division (AMD) and the 618th Air Operations Center (AOC) (Tanker Airlift Control Center [TACC]) execute AE operations by optimizing the use of available aircraft. This optimization may include mixing cargo and AE on the same air mobility flight, as well as integrating AE requirements into cargo channel routes. Airlift for urgent and priority patients is normally tasked from alert aircrews, diversion of in-system select aircraft, or contracting with a civilian air ambulance (CAA) or civilian ambulance SOS.

Theaters validate patient movement requests through the USTRANSCOM patient movement requirement centers. If absolutely necessary, patients requiring in-flight medical care, but not supported by the organic AE system, may be moved by other Service assets or CAA. CAA should only be used in order to save life, limb, or eyesight or if it is demonstrated as most cost-effective.

AEROMEDICAL EVACUATION OPERATIONS

Last Updated: 5 April 2016

During support of operations, aeromedical evacuation (AE) employs its full capability, to include staging, AE aircrew members, specialty teams, and integrated communications. During expeditionary operations, AE includes the movement of military casualties from forward operating bases (FOB) to definitive care facilities. The AE system may also be tasked to provide patient movement for noncombatant evacuation operations (NEO), injured US combat forces, repatriated American citizens, allied prisoners of war, detainees, coalition forces, and Department of Defense (DOD) civilian contractors.

Defense Support of Civil Authorities

Defense Support of Civil Authorities (DSCA) enables mutual assistance and support between DOD and any civil government agency. This includes planning and preparation for response to civil emergencies or attacks, including national security emergencies. Most DSCA situations are managed within the state. In a natural disaster the state normally declares when the situation is beyond the state's response capability and then requests federal support for the state emergency management agency from the Federal Emergency Management Agency (FEMA). The Director of patient stage operations is the senior AE DOD representative responsible for coordinating AE efforts at the aerial port of embarkation (APOE) and coordinating resource requirements with DOD, state, and federal units and agencies at the APOE. This person is responsible for all aspects of patient care and operations affecting patient care at the APOE.

When the DOD is asked to provide support, most FEMA-requested, regulated patient evacuations requiring air transportation are accomplished by AE. US Transportation Command (USTRANSCOM) is the authority that validates AE requirements in support of civilian authorities. Once validated, the requirement is tasked to 18 AF (Air Forces Transportation [AFTRANS]) or the geographic combatant commander (GCC)'s air mobility division (AMD) for execution. 618th Air Operations Center (AOC) (Tanker Airlift Control Center [TACC]) is the 18 AF (AFTRANS) lead agency for patient movement planning, coordinating, and, when directed, executing DSCA support. Air Mobility Command (AMC) also provides trained AE coordinating officers and coordinating elements for DSCA from existing active and reserve component forces in execution of the National Response Framework. AE assets required depend on the size and scope dictated by the disaster or contingency and may be supported by in-place AE infrastructure or the deployment of AE assets to the disaster area. For additional information on homeland operations, see Annex 3-27, *Homeland Operations*.

AE Interface with Special Operations and Personnel Recovery Operations

Some expeditionary forward deployed forces, such as special operations forces (SOF), Marine expeditionary forces, and personnel recovery operations forces, do not possess organic patient evacuation capability and should identify requirements for, and obtain patient evacuation support at forward airbases. See Annex 3-50, *Personnel Recovery Operations*, for more information about personnel recovery.

Evacuation of casualties within a joint special operations area (JSOA) can be particularly complex since SOF often operate with small, widely dispersed teams, and in locations not easily accessible. SOF are responsible for care and evacuation of casualties from the forward location to the secure airfield where AE forces may be prepositioned to support the operation. SOF conduct the evacuation of patients with their organic capabilities. At the secured airfield patient evacuation and specialty care teams (e.g., critical care air transport team [CCATT]) assume responsibility for the casualties, freeing special operations medical assets to return to forward locations. Patient evacuation assets provide the support required to move patients through the en route care system.

Normally, the interface point with special operations is the en route patient staging system (ERPSS). ERPSS personnel have contingency operations training and, in forward locations, should be ready to provide limited holding for patients having been provided resuscitation and surgical intervention, when augmented by CCATT or similar capability. AE missions originating at secure forward airfields may require AE operations in low light conditions. When supporting these forces, AE crew members and CCATTs should be trained in low light/low noise, weapons, and operations in austere locations to meet special mission requirements.

Detainee Missions and AE

AE personnel are not normally used for providing care to detainees unless they require in-flight medical care. Security of detainees is not a responsibility of the en route care system. Strict adherence to detainee handling guidelines is required.

Inter-fly Agreements with Services and Coalition AE Support

The Air Force employs aircraft for the movement of patients and uses AE crew members and specialty teams (e.g., CCATT, tactical critical care evacuation team, etc.) to provide in-flight patient care. Other Services and coalition forces use various ground transport and a variety of aircraft for patient movement. Air Force AE aircrew members may perform appropriate duties in non-Air Force aircraft in the interest of the US government and approved by the appropriate Air Force component, the affected GCC, and the controlling aircraft authority. Conversely, coalition forces may also integrate with Air Force AE forces.

COMMAND AND CONTROL OF AEROMEDICAL EVACUATION

Last Updated: 5 April 2016

Command and control (C2) functions exercised over aeromedical evacuation (AE) missions are consistent with those for all air mobility missions and are conducted in accordance with the C2 processes described in JP 3-17, *Air Mobility Operations*, and Annex 3-30, Command and Control. AE assets should be integrated within the mobility structure established to support airlift operations through the Air Mobility Division (AMD) to the wing and down to each element. AE squadron operations are conducted through operational wing C2 channels. The 618th Air Operations Center (AOC) (Tanker Airlift Control Center [TACC]) or theater C2 node provides C2 for tasking and execution for AE missions within their respective operational areas. AE cells should be established within each of those organizations to provide the link between C2 of airlift operations and medical/joint interface. The theater validating flight surgeon and patient movement requirements center provides clinical and administrative oversight of patients requiring AE; once validated, these movement requirements are sent and coordinated with the appropriate C2 agency for obtaining space on AE airlift missions.

AE begins once a validated patient movement request is passed to the Air Force component agency for execution. AE is not the only mechanism for movement of patients. Casualty evacuation refers to the movement of unregulated casualties aboard vehicles or aircraft (most often rotary wing aircraft). Medical evacuation traditionally refers to US Army, Navy, Marine Corps, or Coast Guard patient movement using pre-designated tactical or logistic aircraft temporarily equipped and staffed for en route medical care. Patient evacuation from point of injury to initial treatment at a health care facility is the responsibility of each Service component.

Contingency

Deployed expeditionary forces are organized to ensure unity of command. Deployed AE forces are organized and tailored based on the size and scope of the operation. C2 of theater AE forces in contingency operations should be defined in the warning/execution/operations order. The commander, Air Force forces normally exercises operational control (OPCON) of Air Force AE assets. Direct liaison authorized with the joint task force surgeon is normally authorized. Deployed AE units normally operate under the direction of an air expeditionary wing commander whether collocated or geographically separated.

Intertheater

Intertheater AE assets normally remain under the OPCON of US Transportation Command. Coordination of airlift, patient movement items, and asset requirements to support AE is requested through the AMD of the theater AOC. The 618 AOC (TACC)/CC and AMD may coordinate the use of theater AE assets to support mobility air forces or intertheater missions. Theater AE assets tasked to support MAF intertheater missions normally fall under the tactical control of 618 AOC (TACC) during execution and repositioning back to the theater. When theater AE assets are used to support intertheater AE missions, provisions should be made for expeditious return of these assets.

LAYDOWN (OPERATIONS PHASING AND FORCE SEQUENCING)

Last Reviewed: 5 April 2016

Theater requirements are met based on a building block principle, which allows planners to select specific packages required to support steady state and contingency operations as well as homeland operations.

The aeromedical evacuation (AE) force has the capability to move casualties, after stabilization from forward areas of the combat zones. This drives a requirement to provide continuity of care at the patient staging point and during transportation. The aeromedical evacuation control team theater aeromedical evacuation system manager coordinates with theater medical planners and develops plans and strategies to determine appropriate force laydown of AE ground forces and AE crews in support of joint patient movement operations.

EN ROUTE CARE TRANSPORT TEAM

Last Updated: 5 April 2016

En route critical care transport capabilities consist of several specialized medical teams who assist in carrying out the mission of the global patient movement system. These teams are limited, rapidly-deployable resources available in selected situations to maintain or enhance the standard of care provided to critically ill or injured patients who require continuous stabilization and highly advanced care during transport to the next level of medical treatment. En route critical care units include critical care air transport team (CCATT), tactical critical care evacuation team (TCCET) and, special operations critical care evacuation teams (SOCCET). Other enabling capabilities include, but are not limited to, acute lung rescue teams, neonatal intensive care unit teams, and joint medical attendant transport teams. CCATTs and TCCETs provide intensive care, by themselves or in conjunction with aeromedical evacuation (AE) crews, to evacuate critical patients requiring advanced care during transportation. These teams are medically responsible for their patients.

AEROMEDICAL EVACUATION AIRCRAFT CONSIDERATIONS

Last Reviewed: 5 April 2016

Many considerations are taken into account when selecting appropriate aircraft for aeromedical evacuation (AE) missions. Altitude restrictions, configuration, patient load, airfield restrictions, aircraft range and potential air refueling are key factors. Additionally, AE crew members should be provided combat aircrew flight equipment on the same basis as other aircraft crew members.

AEROMEDICAL EVACUATION OF CONTAMINATED OR CONTAGIOUS CASUALTIES

Last Reviewed: 5 April 2016

Patients, personnel, or casualties with known or suspected contamination from chemical, biological, radiological, or nuclear (CBRN) agents are not normally transported within the aeromedical patient movement system. However, chemically or radiologically contaminated casualties when approved for aeromedical evacuation (AE) are decontaminated before entering the AE system unless the Secretary of Defense (SecDef) directs otherwise. US Transportation Command (USTRANSCOM)/SG maintains a list of bioterrorism and Centers for Disease Control and Prevention critical list (CL) agents. The imminent concern is communicable person-to-person agents.

Patients with CL contamination should be quarantined and treated in-place and are not recommended for evacuation. For more information, see Annex 3-40, *Counter Weapons of Mass Destruction (WMD) Operations*.

Movement of highly contagious patients requires commander, USTRANSCOM and geographic combatant commander (GCC) approval as well as SecDef exception to policy.

APPENDIX A: AIRLIFT MISSION TYPES

Last Updated: 5 April 2016

Airlift missions are prioritized according to Department of Defense (DOD) and Chairman, Joint Chiefs of Staff (CJCS) DOD transportation movement priority system. The following information explains the different types of Air Force airlift missions.

Aerial Delivery Missions

Aerial delivery missions employ airdrop of personnel, equipment, and supplies into potentially hostile environments, locations lacking adequate access by other means, or when airland is insufficient to meet closure times. It requires specially trained crews, special equipment and additional mission planning.

Aeromedical Evacuation

Aeromedical evacuation (AE) provides time-sensitive in flight care of casualties to and between levels of care (e.g. Role I-V), using organic or contracted aircraft with medical aircrew trained explicitly for this mission. AE forces can operate as far forward as aircraft are able to conduct air operations, across the range of military operations, and in all operating environments. Specialty medical teams may be assigned to work with the AE aircrew to support patients requiring more intensive en route care.

Banner Missions

Banner missions require close coordination with the White House Military Office (WHMO). These highest priority missions require aircrews to be postured in an enhanced alert status to be flexible to the user requirements. See AFI 11-289, *Phoenix Banner, Silver, and Copper Operations*, for additional guidance. A subset of missions tasked by the WHMO in support of White House operations are the following:

A **PHOENIX BANNER** mission is a special assignment airlift mission (SAAM) supporting the President of the United States.

A **PHOENIX SILVER** mission is a SAAM supporting the Vice President of the United States.

A **PHOENIX COPPER** mission is a SAAM supporting White House-directed missions when not supporting the President or Vice President.

Channel

Channel missions are taskings flown over fixed routes. By default, all channels are considered common-user distribution channels. Contingency channels support ongoing JCS-approved contingency operations. These channels can serve intertheater or intratheater needs. The majority of airlifted sustainment moves on channel missions. Channel missions use DOD transportation movement priority classifications. For information on establishing priorities for a joint force commander (JFC), see JP 3-17, *Air Mobility Operations*. At the request of the supported CCDR, the commander of US Transportation Command (USTRANSCOM) can establish a special channel mission called air mobility express (AMX) to move critically needed items rapidly to an area of responsibility. The supported combatant commander (CCDR) may apportion part of his or her CJCS- allocated lift on AMX by pallet positions to each component. For AMX missions to be effective, the supported CCDR should establish a theater distribution system to deliver express cargo from aerial port of debarkation to final destination.

Executive Airlift Missions

The executive airlift (EA) mission provides safe, reliable, connected, and protected air transportation for national leadership in direct support of national security objectives, while ensuring continuity of government. EA is a strategic mobility enabler dedicated to transporting the President, Vice President, Cabinet, members of Congress, DOD-approved senior officials and foreign dignitaries.

EA uses specially configured and modified aircraft to conduct highly sensitive, often classified, worldwide missions enabling senior leadership to employ diplomatic, informational, military and economic instruments of power. These special air missions (SAM) are primarily executed using VC-25, C-32, C-40, C-37, and C-20 aircraft. However, due to the high-demand, low-density nature of the mission, EA leverages aircraft of operational support airlift, Service Secretary, CCDR, and other mobility assets to fulfill time-sensitive senior leader requirements. User-specified communication requirements drive the need for the very latest capabilities and technologies.

Under direction of the Assistant Vice Chief of Staff of the Air Force, the Chief of the USAF Special Air Missions Division (CVAM) is the coordinating authority for EA missions and serves as the chief of executive airlift scheduling activity (EASA). CVAM receives EA taskings from the WHMO, Office of the Secretary of Defense (OSD) Executive Secretariat, Senior DOD leadership and OSD Legislative Affairs. EASA is the point of contact when collaborative scheduling is required for combat support mission aircraft and executive aircraft.

Mission efficiency, effectiveness, and urgency require customized mission dispatch, execution, and visibility tools and command and control (C2) structure. Commander, USTRANSCOM is the overall manager for USAF's SAM fleet and maintains operational control (OPCON) of continental United States (CONUS)-based SAM assets through the commander, Air Mobility Command (AMC/CC). AMC/CC normally delegates OPCON of these missions and aircraft to the commander, Eighteenth Air Force (18 AF/CC). Outside the CONUS (OCONUS)-based SAM assets are under OPCON to the respective geographic combatant commander (GCC) who delegates OPCON to the

theater commander, Air Force forces (COMAFFOR). CVAM and WHMO provide detailed mission planning. Execution and C2 for missions conducted with CONUS-based assets occurs either in the unit itself or with the 89 AW depending on the aircraft tasked. The theater air operations center's (AOC) air mobility division (AMD) performs these functions for OCONUS-based assets. CVAM and theater AMD collaborate regarding asset availability to ensure required SAM users have the needed airlift to meet requirements.

Exercise and Contingency Support

Exercise and contingency missions involve deployment, sustainment, and redeployment via intertheater or intratheater airlift. Mobility assets participating in exercises enable units to gain additional training from unique mission scenarios and objectives that are not regularly accomplished during normal or contingency operations. Exercise and contingency operations are normally shaped by the functional or geographic combatant commanders who develop an exercise directive, operation plan or operation order with specific logistical requirements for operations directed by the President, the Secretary of Defense (SecDef), or the JCS.

Deployment and redeployment transportation requirements are planned using the joint operation planning and execution system. Supported commanders validate their intertheater requirements to USTRANSCOM through the time-phased force and deployment data (TPFDD). The TPFDD details the CCDR's deployment/redeployment priorities that enable air mobility planners to build air movement plans. AMC plans and moves sustainment requirements through the channel system by establishing distribution or contingency channels. Regardless of the method used to identify the requirement, the 618 AOC (Tanker Airlift Control center [TACC]) schedules assigned airframes, missions, and support necessary to manage the air mobility flow for intertheater airlift. The theater AOC's Air Mobility Division (AMD) plans, coordinates, tasks, and executes assigned and attached airframes, missions, and support necessary to manage the air mobility flow for intratheater airlift, and accomplishes these same functions for intertheater airlift, including TDFFD movements, to meet the GCC's timelines and/or mission needs.

Human Remains

Human remains missions seek to return human remains with the highest dignity and respect. These missions are often high priority, close watch missions requiring high levels of coordination for ceremonies and handling. See JP 4-06, *Mortuary Affairs*.

Humanitarian Assistance and Disaster Relief

Humanitarian assistance and disaster relief operations provide assistance to areas suffering from natural or manmade disasters to relieve or reduce human suffering, disease, hunger or privation. These operations may be in support of the Department of Homeland Security, directed by the State Department or the GCC, or conducted in support of other national objectives.

Joint Airborne/Air Transportability Training

These airlift missions are CJCS-directed to provide continuation and proficiency training to airlift aircrews, support personnel, and Service common users.

Noncombatant Evacuation Operations (NEO)

(NEO) are directed by the Department of State or other appropriate authority, in conjunction with the DOD, whereby noncombatants are evacuated from foreign countries when their lives are endangered by war, civil unrest, or natural disaster to safe havens or to the United States. These missions are characterized by short timelines, increased coordination and oversight, and public affairs involvement. See JP 3-68, *Noncombatant Evacuation Operations*, for additional guidance.

Operational Support Airlift (OSA)

OSA provides a means of airlift for high-priority passengers and cargo with time, place, or mission-sensitive requirements. CONUS- based OSA assets serve the needs of approved DOD users validated by the joint operational support airlift center (JOSAC) at USTRANSCOM. Flying units, via Service-established procedures, indicate specific aircraft availability for Service, JOSAC, and AE missions. Outside the CONUS (OCONUS), OSA assets provide airlift for the timely movement of limited numbers of priority personnel and cargo, as well as the opportunity airlift of validated AE patients. OCONUS OSA flights are predominantly used to meet GCC or Service component commander requirements.

Prime Nuclear Airlift Force (PNAF)/Emergency Nuclear Airlift Operations (ENAO)

Airlift missions supporting nuclear operations are classified as PNAF/ENAO. PNAF refers to the aircraft and aircrews that provide peacetime logistical support for the movement of nuclear weapons and nuclear components. The objective of ENAO is to move nuclear cargo safely under US custody. Cargo aircrew may be tasked at any time to airlift nuclear weapons. The amount of preparation time and degree of assistance received depends on the length of time the major command has to move the weapons.

Special Assignment Airlift Mission

Special assignment airlift missions are operated to satisfy all domestic requirements within the established channel airlift route patterns and those that require special handling due to cargo weight and size, movement urgency and sensitivity, or other special factors.

APPENDIX B: 618TH AIR OPERATIONS CENTER (AOC) (TANKER AIRLIFT CONTROL CENTER [TACC]) ORGANIZATION

Last Updated: 5 April 2016

The following describe roles and responsibilities within the 618 AOC (TACC):

- **Director of operations (XOZ).** The director of operations provides immediate oversight and decision-making in the day-to-day activities of Air Mobility Command (AMC) and represents the 618 AOC (TACC) commander on operational issues.

- **Operations Management (XON).** Provides data, technology and resource support across the 618 AOC (TACC).

- **Mobility management (XOB).** Allocates/tasks units to support airlift and air refueling requirements. Coordinates with Air Reserve Components (ARC) on their availability to support worldwide mobility taskings.

- **Command and control (XOC).** Directs assigned missions within 24 hours of mission start. Provides diplomatic clearances, flight planning, waiver facilitation, integrated flight management, emergency actions support, en route aircraft logistics support, and strategic aeromedical evacuation (AE) execution management.

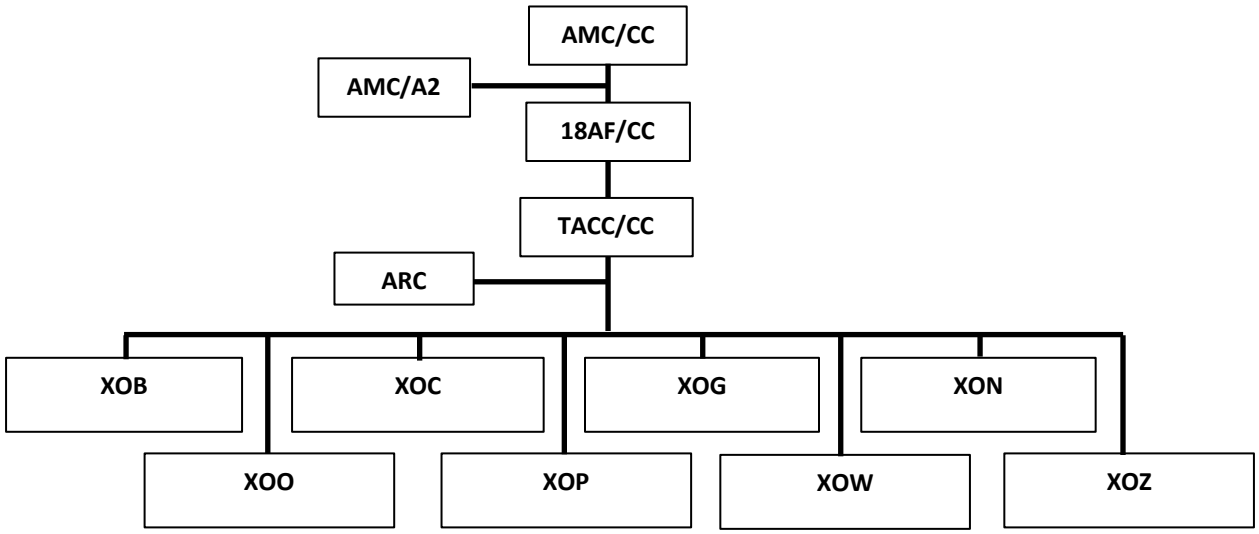
- **Current operations (XOO).** Plans and monitors organic/commercial airlift and air refueling missions to meet the customer requirements for movement of passengers, cargo, support for classified programs, nuclear airlift, fighter and bomber deployment and employment, air refueling, executive airlift, homeland defense, and the nation's nuclear commitment. Acts as the focal point for tanker/airlift special access required programs and is the single source validator for all Air Force air refueling missions.

- **Global readiness (XOP).** Single manager for executing global reach—airlift, air refueling, special operations, AE, operational support, and Presidential airlift in support of national goals and objectives. Integrates total force to implement directives/taskings from government agencies for movement of national and international resources in response to wartime needs, contingencies, exercises, and humanitarian relief efforts.

- **Global channel operations (XOG).** Directs worldwide strategic channel airlift operations for passenger and cargo movement in the Defense Travel System .

Develops route structures, schedules airlift, and provides oversight on channel system performance.

- **Global weather operations (XOW).** Provides full spectrum weather support for all mobility missions under the command and control of the 618 AOC (TACC). Additionally, provides operational mission weather support to training flights at all Air Mobility Command (AMC) main bases as well as co-located ARC units. Produces climatological reports, command level briefings, and fulfills special weather support requests in support of US Transportation Command, AMC, 18 AF, and 618 AOC (TACC) leadership.



618 AOC (TACC) Organization

APPENDIX C: AIR MOBILITY SUPPORT AND CONTINGENCY RESPONSE ELEMENTS

Last Updated: 5 April 2016

GLOBAL AIR MOBILITY SUPPORT SYSTEM (GAMSS) ELEMENTS

The GAMSS is organized into air mobility operations wings (AMOWs), groups (AMOGs), and air mobility squadrons (AMSs).

- **Air Mobility Operations Wing/Group.** The mission of the fixed en route system is to provide worldwide air mobility support for US Transportation Command (USTRANSCOM)-directed missions. This mission is executed by Air Mobility Command's (AMC) two AMOWs. Each AMOW consists of two AMOGs made up of several AMSs, detachments, and operating locations, that may include Air Force- or Navy-operated contracted terminals.

- **Air Mobility Squadron.** AMSs are overseas en route squadrons that receive, service, and launch air mobility missions at each location; the exact structure and mission of each unit is tailored for mission requirements.

Contingency Response (CR) Forces

- **Contingency Response Wing (CRW).** The CRW is a fixed unit that coordinates generating the resources for and deployment of subordinate units to provide mobile air mobility support capability.

- **Contingency Response Groups (CRG)**. A CRG is the largest entity within the CRW that deploys as a unit. The CRG's primary mission is airbase opening for an Air Force component, another Service, or coalition partner. Each CRG is a standardized force module dedicated to the airfield opening task. CRGs are extremely flexible because they can be tailored into a number of smaller packages that can be tasked by USTRANSCOM to meet the requirements of any contingency.

- **Mobility Support Advisory Squadron (MSAS)**. The MSAS employs teams of air mobility air advisors to build partnerships with partner air forces. These advisors help partner nations increase their mobility capability so they are better able to respond to internal threats, external threats, and humanitarian requirements.

- **Contingency Response Element (CRE).** The CRE is a deployed organization at forward locations where air mobility operational support is nonexistent or insufficient. The core capability sets of a CRE are command and control (C2), communications,

aerial port, and aircraft maintenance and can be tailored to support contingency requirements.

- **Contingency Response Team (CRT**). A CRT performs the same functions as a CRE, but on a smaller scale.

- **Contingency Support Element (CSE).** CSEs consist of personnel and equipment to make up a contingency support capability other than the core C2. They may be deployed as an element of a CRE or CRT or as a small-scale, stand-alone entity.

- **Airfield Assessment Team (AAT).** An AAT is comprised of multi-skilled experts who verify airfield operations information, to include obtaining and evaluating additional details pertinent to safe operations. They provide commanders and planners with valuable information on suitability of airfield operations.

- **Airfield Survey Team (AST).** An AST conducts airfield surveys and is led by a core member certified to conduct those surveys. They provide commanders and planners with needed information on suitability of airfield operations.

- **In-Transit Visibility (ITV) Team.** Provides support personnel to set up and operate ITV equipment at passenger and cargo on/offload locations.

- **Joint Inspector (JI) Team.** The JI provides the air component of the joint inspection team for airland contingency support.

- **Affiliation Training Team (ATT).** An ATT provides instruction to airlift users in the areas of airlift planning, cargo load planning, and equipment preparation by instructing the equipment preparation course and the airlift planner's course to various airlift users.

- **Contingency Load Planning Team (CLPT).** A CLPT helps an airlift user prepare and marshal the initial loads prior to the arrival of the first aircraft and provides on-the-spot training and quality control to the deploying organization.

- **Communications Support Team (CST).** A CST is a team of CR forces, communications, and air ground equipment personnel deployed to support another unit's communications requirement.

Contingency Response Organizations

- **Joint task force–port opening (JTF-PO).** Each CRG may be trained to partner with an Army rapid port opening element to generate a JTF-PO. JTF-PO is a USTRANSCOM-owned entity designed to not only offload air cargo and passengers, but to onward move them up to 10 kilometers from the airfield, and then establish an interface with the theater distribution system. When a JTF-PO is activated, the CRG commander is normally designated as the senior airfield authority. Refer to JP 4-09, *Distribution Operations*, for a more thorough discussion on JTF-PO.

- **Contingency Operations Support Group (COSG).** COSG provides in-garrison support that enables the rapid deployment capabilities of the CRGs, but also delivers other air mobility support capabilities of its own through its subordinate units.

  - **Air Mobility Operations Squadron (AMOS).** The AMOS trains and equips personnel specifically to deploy and perform air mobility division duties for a theater air operations center, either as a complete "plug-in" module or to fill individual requirements.

  - **Global Support Squadron (GSS).** The GSS contains sufficient forces to generate an independent CRE. The GSS is also responsible for managing equipment and contains sufficient forces to generate an independent CRE.

  - **Air Mobility Liaison Officer (AMLO).** An AMLO is a rated air mobility officer specifically trained to provide air mobility expertise and close, tactical-to-strategic level combat operations support to ground forces in garrison and while deployed to contingencies or exercises. AMLOs examine air mobility operations and voice concerns to air mobility leadership. AMLOs are organized and empowered to serve as the single authoritative voice representing and advising the ground commanders they support. AMLOs represent commander, USTRANSCOM to the organization to which they are acting in support and receive direction from the director of mobility forces.

- **AMC Operational Wings.** All of AMC's various operational wings have embedded air mobility support forces. These forces contribute to GAMSS through both their home station operations and as a source of expertise that can attach to other geographic combatant commander's theater organizations.

- **Other Air Force Major Commands (MAJCOMs)**. US Air Forces in Europe and Pacific Air Forces have CRGs which are usually the first source of CR forces for contingencies within their theaters. All MAJCOMs have small numbers of air mobility support forces assigned to their wings that contribute to GAMSS.

  - **Air Traffic Control (ATC) and Special Tactics Teams (STT).** Air Force Special Operations Command (AFSOC) provides ATC and STTs for communication at forward operating locations, to enable airdrop or airland operations. For operations within the continental United States, control of these forces remains with AFSOC. Theater assigned SOF are under the operational control of the theater special operations command or the joint force special operations component commander, when established.

- **Air Reserve Components (ARC).** Air National Guard and Air Force Reserve Command have significant air mobility support forces within their organizations. There are several AMOS within the ARC. They provide the same C2 capabilities as their regular counterparts, supporting the air mobility division augmentation requirement.

  - **Aerial Port Squadron/Flight (APS/APF).** The units deployed from the APS and the APF provide the fixed structure, CRE, or CRT core aerial port functions.

✪✪ **Airlift Control Flight (ALCF).** ALCFs are part of the GAMSS gained by AMC upon mobilization. The personnel deployed from the ALCFs perform the CRE or CRT core C2 functions.
