

2.0 Air Mobility Operational Requirements

Air mobility supports America and National Military Strategy across the spectrum of conflict; from peacetime operations for American global interests, to major regional contingencies and nuclear deterrence. This mission is accomplished through airlift of cargo and passengers and air refueling of fighter, bomber, tanker, airlift, and special operations aircraft.

Mobility Operational Objectives

Mobility's operational objectives are power projection, force sustainment, and humanitarian or peacekeeping support. Figure 2.0-1 below illustrates the relationship of the air mobility mission areas to operational objectives and then to the specific operational tasks. Operational tasks are those capabilities that must be available in order to achieve one or more operational objectives.

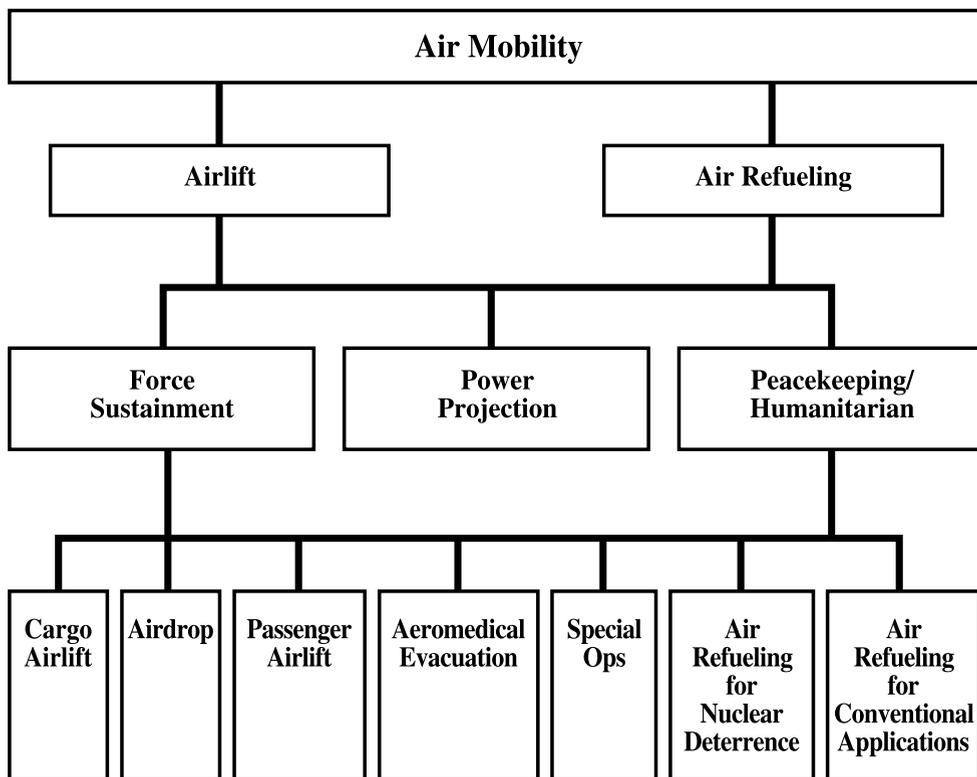


Figure 2.0-1 Air Mobility Mission

Operational Tasks

The air mobility operational tasks form the cornerstone of national security strategy and are expected to remain essential for the foreseeable future. The operational tasks are described in the following pages.

Airlift of supplies and equipment requiring processing, loading, and subsequent air-land movement of the following categories of cargo:

Bulk: General cargo, typically preloaded on pallets and transportable by common cargo aircraft.

Oversize: Cargo requiring a C-130 or larger. Typically larger than one 463L pallet.

Outsize: Cargo transportable normally only by C-5 or C-17.

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

Special: Items requiring specialized preparation and handling procedures, such as space satellites.

Airlift provides speed and flexibility in deploying, employing, and sustaining combat forces. This task directly supports the war fighting commander with time-critical cargo and has a significant impact on the outcome of any contingency. Airlift is the most responsive and flexible of the strategic mobility options: surface, afloat prepositioning, sealift, or airlift. With a post-Cold War force that is primarily CONUS-based, rapid power projection is essential for establishing and reinforcing a US or multi-national presence. Airlift will deliver the bulk of the initial fire-power in future conflicts. This task typically requires, at the receiving site, materials handling equipment (MHE), on- and offload support personnel, and facilities. Movement of nuclear weapons require special security, routing, and overflight clearances.

The Mobility Requirements Study Bottom-Up Review Update (MRS BURU), established the existing airlift requirement at 49 to 52 million ton-miles per day (MTM/D). The process of establishing the airlift requirement employed sophisticated airlift system and wargaming simulation models. The analysis modeled aircraft loading, movements and cargo delivery on a Time-Phased Force Deployment Data (TPFDD) timeline established by the Joint Chiefs of Staff (JCS) to meet the needs of supported theater Commanders in Chief (CINCs). The models computed timelines for delivery and wargames then assessed the resultant impact to combat effectiveness. This assessment of delivered forces' ability to achieve their objectives at an acceptable level of risk and confidence was an iterative process and established the airlift requirement for the foreseeable future. Figure 2.0-2 depicts projected strategic airlift fleet capability in relation to the MRS BURU requirement.

The strategic airlift capability does not meet the defense planning guidelines (DPG) two major regional contingencies (MRC) requirement per MRS BURU analysis until FY05. Limited capability exists to deliver outsize and oversize cargo to austere fields. The low reliability of aging aircraft such as the C-5, further inhibit AMC's ability to deliver cargo. The C-5 is the only aircraft fully fielded and capable of delivering outsize cargo and it does not routinely operate into short, poorly equipped airfields. The C-141 is scheduled to retire by FY06 while C-17 and NonDevelopmental Airlift Aircraft (NDAA) acquisition profiles are delayed. MHE is in short supply and poor condition. AMC has only 78% of the 40K loaders required. The inventory of commercial wide body capable loaders is only 49% of the established requirement. AMC plans to accelerate the 60K loader and begin procurement of a new small loader; both will be able to support both military aircraft as well as commercial wide body aircraft.

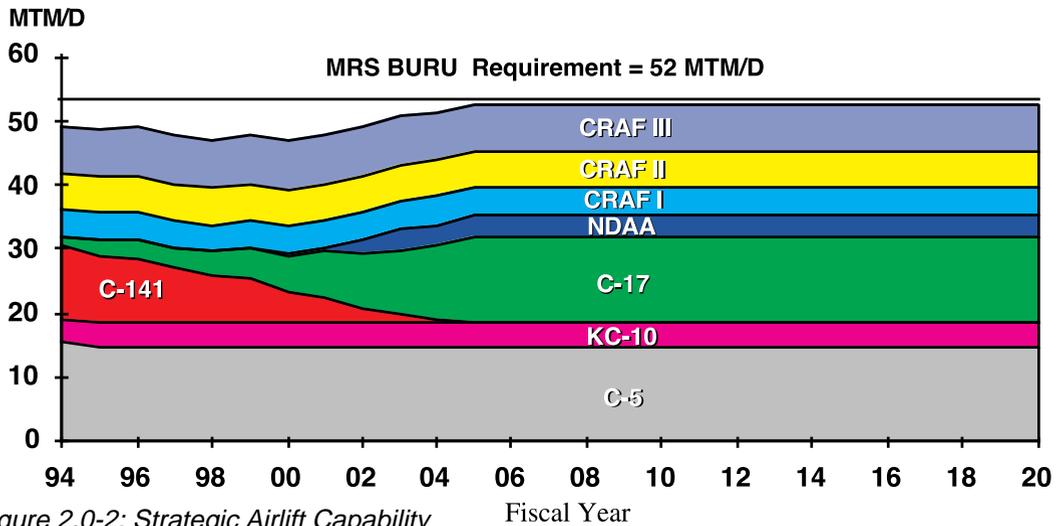


Figure 2.0-2: Strategic Airlift Capability

Airlift of Personnel

While all AMC organic aircraft can carry some passengers, planning factors assume 90% of all passengers during a large scale contingency will travel by contract commercial carriers in the Civil Reserve Air Fleet (CRAF). Troop movements must be carefully planned to arrive in theater with their equipment. MRS BURU set the passenger requirement at 136 wide-body equivalents (WBEs).

Special Air Missions (SAMs) use specially configured aircraft with extensive air-to-ground communications to support the President and Vice President of the United States, cabinet and congressional delegations, and other senior statesmen. These missions are time critical, often classified, and frequently require operations at civilian airports. In addition to SAMs, Operational Support Airlift (OSA) provides routine airlift of passengers throughout the DoD system as well as wartime movement of priority cargo and passengers in support of operational requirements.

Airdrop of Troops, Supplies, and Equipment

Airdrop is the employment and resupply of forces through the aerial delivery of troops and equipment without landing the aircraft. Formation operations are essential for adhering to the principles of mass and security. The airdrop capability directly supports the JCS requirement for an immediate response capability to deploy airborne forces throughout the world. This is the basis for maintaining strategic airdrop capabilities. While airland is the preferred method of deploying forces, the capability to airdrop troops and equipment is a crucial capability that remains an integral part of Army doctrine. Currently, the C-141 is the aircraft relied on for performing the strategic brigade airdrop mission. The C-17 just completed airdrop validation and will begin integration into the airdrop mission.

This operational task requires additional airborne communications and generally launches on short notice, requiring rapid and close mission planning and coordination with the user. The

strategic brigade airdrop also produces an intense MHE requirement to support the rapid rigging and onload of airdrop platforms at the staging site. Such intense activities create a significant operations security (OPSEC) challenge. These airdrop aircraft must be able to fly in a non-navaid environment, conduct formation air refuelings, and participate in formations of up to 100 aircraft. Finally, crews and troop commanders need near real-time situational awareness of the battlefield and communications with ground forces in order to react appropriately to the dynamic character of combat operations.

Aeromedical Evacuation (AE)

AE is the air movement of patients to appropriate medical care facilities. Movement of patients normally requires qualified aeromedical crewmembers. All air mobility aircraft maintain some capability to support AE giving some capability to respond to short notice taskings. Theater assets are the primary aircraft to move patients from forward operating locations to a centralized staging area. Civil carriers, augmented by organic aircraft, perform the intertheater missions from these staging areas to CONUS care facilities. These missions frequently require special air traffic control considerations to comply with patient driven altitude/pressurization restrictions as well as special aircraft systems for medical equipment. In addition to the C-9 and other aircraft, we count heavily on the C-17 and CRAF to fill the aeromedical evacuation role. A shortfall in meeting the wartime CRAF requirement exists.

Current CRAF AE Boeing 767 commitments meets less than half the requirement. In addition, only 33 of their 44 required AE shipsets are serviceable. The current Boeing 767 patient on/offloading is slow and impacts patient care and aircraft throughput. Current AE support equipment, such as the spinal cord immobilization system, is non-supportable. Most deployable medical systems are not AE certified and a portable gaseous oxygen system is required. Joint service coordination is needed to procure and certify new AE equipment. Feasibility of equipping other aircraft to fill the AE role, modifying shipsets, as well as improving incentives to increase CRAF participation are being explored.

Airlift Support for Special Operations

Specialized airlift/airdrop support for special operations is needed for joint or combined contingencies, low intensity conflict, and other missions as directed by the National Command Authorities (NCA). This includes augmenting special operations missions through the insertion, resupply, or extraction of special operations forces. Special operations missions may be covert, clandestine, or overt. Aircrews must be capable of night vision goggle (NVG) operations and unique procedures that enhance their ability to conduct special operations (landings, tactical onloads and offloads, forward air refueling, and airdrop) at night.

Air Refueling for the Single Integrated Operational Plan (SIOP)

SIOP air refueling operations are conducted in four phases: force generation; execution; employment; and survival, recovery, and reconstitution. During increased readiness conditions, SIOP-assigned units generate aircraft and assume alert to support pre-, trans-, and post-strike bombers. SIOP-committed tankers refuel USSTRATCOM Command and Control aircraft and reconnaissance support sorties. These forces support USSTRATCOM and interface with its command and control (C2) systems. Aircraft on alert are kept ready for immediate launch.

These missions may be conducted in a nuclear detonation environment, leading to electromagnetic pulse, flash blindness and routing problems.

Air Refueling during contingency operations

Air Refueling enables rapid force projection and sustainment of conventional role bombers, fighters, tankers, airlift, and special operations aircraft by minimizing payload/fuel/range trade-offs. This decreases reliance on en route staging bases and host nation support while speeding combat forces to the theater of operations. As demonstrated in DESERT SHIELD/ STORM, the ability to air refuel served as a force multiplier, expanding both reach and combat capability of US and coalition forces in theater. USAF air refueling also routinely supports Navy, Marine, and allied aircraft which unique system and procedural requirements. Long-range air refueling also supports strike forces launching from CONUS bases.

Air Refueling Capability and Requirements

The air refueling fully mobilized wartime capability is shown below. The capability and requirement for air refueling is measured in million pounds of fuel per day (MPF/D). It is based on FY96-01 DPG scenarios and War Mobilization Plan commitments. This capability is based on projected mission capable rates and assumes the KC-135's primary role is air refueling. There are 26 KC-135s withheld for airlift missions. The dual role KC-10s can swing between air refueling and airlift as the warfighting commander's requirements vary. Fifteen KC-10s are dedicated for air refueling, 37 allocated to airlift tasks, and 2 for schoolhouse training. The shortfall is 9 MPF/D or 14% of the total air refueling requirement.

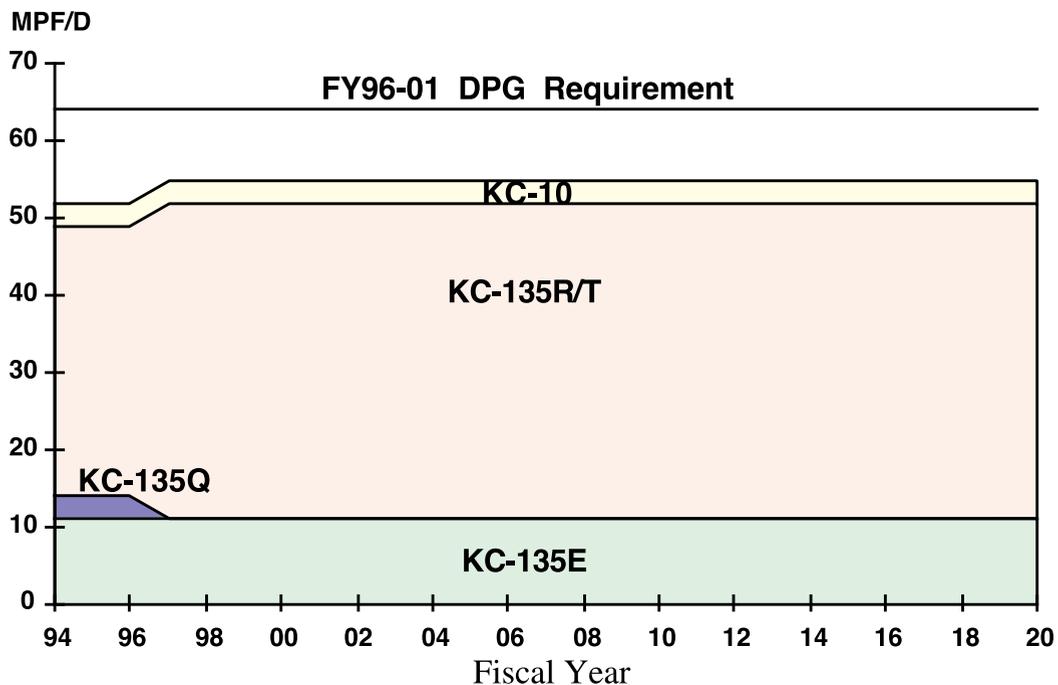


Figure 2.0-3: Air Refueling Capability

Infrastructure/Equipment Deficiencies with Likely Technological Solutions

Airlift and air refueling operations around the globe are dependent on a highly developed aircraft support and information infrastructure. Home bases must be able to generate, recover, and reconstitute mobility resources in rapid succession. The en route support system must service large numbers of transient airlift aircraft and their passengers and cargo. The information infrastructure must also provide the capability to command and control airlift and air refueling resources to provide commanders with required data concerning aircraft and mission requirements. The Mobility Requirements Study (MRS) documents the impact of an absence of en route locations in the European theater (Major Regional Contingency - East) and shows how the loss of key locations will significantly delay closure time. In addition, analysis using the Major Regional Contingency - West (Pacific Theater) determined that denied access to specific off-load and recovery bases present dramatic impacts that increase closure time and risk substantially.

While many of these problems could be solved with increased quantities of present equipment; better, more affordable solutions may be available using advanced technology. The needs in this regard are:

- Global command and control
- Very accurate worldwide navigation
- Realtime situational awareness
- Improved aircraft survivability
- Better material handling equipment
- Improved reliability and maintainability
- Total asset visibility/In-transit visibility
- Improved delivery systems
- Better training systems
- Global range
- Higher speed