TRAINER GUIDANCE

Line Item 1.3 *Types and descriptions of transport aircraft*

Prerequisites:	Trainee will complete the Air Freight (DL) Course// Airframe Capabilities
Training References:	DTR 4500.9-R. Part III, Appendix V Aircraft Load Planning and Documentation
Additional Supporting References:	N/A
Training Support Material:	N/A
Specific Techniques:	This lesson plan is designed for hands-on (demonstration/performance). Trainers will demonstrate, document, and verify training using a variety of hands-on scenarios with actual missions or simulated training scenarios.
Criterion Objective:	A. **Upon completion of training, trainee will be able to**: 1. Know the primary Air Mobility airframes. 2. Know the various capabilities of each airframe. 3. Know basic facts, terms, and principles about airlift capability. **B.** **Trainee will:** 1. Review the training objectives. 2. Review the training references. **Trainer will:** **C.** 1. Review the training objectives. 2. Review the training references 3. Ensure trainee has completed prerequisites 4. Conduct the training using the attached lesson plan. 5. Perform remedial training if necessary 6. Comply with the duties outlined in AFI 24-605, 7. Complete the USAF EC QTP Evaluation survey .
NOTES to Trainer:	This lesson plan is designed for hands-on training (demonstration-performance). Aerial port missions are inherently different from station to station; training sessions may or may not easily lend themselves to hands-on training. Therefore, it is imperative that trainers demonstrate, document and verify training using a variety of hands-on and scenario-based techniques to achieve the desired proficiency prior to signing the Task Evaluation Checklist (TEC). Prior to accomplishing the practical application of this lesson, ensure the trainee has the necessary PPE; i.e., gloves, steel-toed boots, hearing protection, and reflective gear during hours of darkness. Use caution while maneuvering around the Mechanized Material Handling System (MMHS), if applicable. Brief the trainee to remain aware of vehicles/Material Handling Equipment (MHE) operating in the warehouse/pallet grid yard. Additionally, remind the trainee to remove all rings and exposed jewelry.

TASK STEPS

Line Item 1.3 ***Types and descriptions of transport aircraft***

Learning Objective 1 *Capabilities of the C-130 Hercules:*

A. History
   1. Four decades have elapsed since the Air Force issued its original design specification, yet the remarkable C-130 remains in production since December 1956.
   2. The latest C-130 to be produced, the C-130J, entered the inventory in February 1999. The C-130J brings substantial performance improvements over all previous models.
      a). The C- 130J-30, a stretch version with a 15-foot fuselage extension, increases the capabilities even more. To date, the Air Force has taken delivery of 77 C130J aircraft from Lockheed-Martin Aeronautics Company

B. Mission
   1. The C-130 Hercules primarily performs the tactical portion of the airlift mission.
   2. The aircraft is capable of operating from rough, dirt strips and is the prime transport for airdropping troops and equipment into hostile areas.
   3. The C-130 operates throughout the U.S. Air Force, serving with Air Mobility Command, Air Force Special Operations Command, Air Combat Command, U.S. Air Forces in Europe, Pacific Air Forces, Air National Guard and the Air Force Reserve Command, fulfilling a wide range of operational missions in both peace and war situations.
      a). Basic and specialized versions of the aircraft airframe perform a diverse number of roles, including airlift support, Antarctic ice resupply, aeromedical missions, weather reconnaissance, aerial spray missions, firefighting duties for the U.S. Forest Service and natural disaster relief missions

C. Features
   1. Using its aft loading ramp and door, the C-130 can accommodate a wide variety of oversized cargo, including everything from utility helicopters and six-wheeled armored vehicles to standard palletized cargo and military personnel.
   2. In an aerial delivery role, it can airdrop loads up to 42,000 pounds or use its high flotation landing gear to land and deliver cargo on rough, dirt strips.
   3. The flexible design of the Hercules enables it to be configured for many different missions, allowing one aircraft to perform the role of many.
      a). Much of the special mission equipment added to the Hercules is removable, allowing the aircraft to return to its cargo delivery role if desired.

b). Additionally, the C-130 can be rapidly reconfigured for the various types of cargo such as palletized equipment, floor-loaded material, airdrop platforms, container delivery system bundles, vehicles and personnel or aeromedical evacuation.

4. The C-130J is the latest addition to the C-130 fleet and will replace aging C130Es.
   a). The C-130J incorporates state-of-the-art technology, which reduces manpower requirements, lowers operating and support costs, and provides life-cycle cost savings over earlier C- 130 models.
   b). Compared to older C-130s, the J model climbs faster and higher, flies farther at a higher cruise speed, and takes off and lands in a shorter distance.
   c). C-130J/J-30 major system improvements include advanced two-pilot flight station with fully integrated digital avionics, color multifunctional liquid crystal and head-up displays and state-of- the-art navigation that includes a dual inertial navigation system and GPS.
   d). The aircraft also features fully integrated defensive systems, low-power color radar, digital moving map display, new turboprop engines with six-bladed all composite propellers and a digital auto pilot.
   e). The C-130J/J-30 also includes improved fuel, environmental and ice protection and an enhanced cargo-handling system

4. **Characteristics (See Figure 1.2 below).**

C-130 Hercules Characteristics		
Cargo Compartment:		
Length:	52 feet (624 inches) (612” usable)	NOTE: Although the cargo compartment is 624” long, *only* 612” are usable.

Width:	123 inches	NOTE: In terms of width, cargo must be 14 inches from the sides of the airplane, without passengers. Without dual rails installed, the cargo compartment floor is limited to 105 5/8 inches wide.
Height:	108 inches	

NOTE: Maximum heights are as follows:

- 102 inches for large, single items of cargo placed on pallets.
- 100 inches for palletized, netted cargo connected.
- 100 inches for single, palletized, netted cargo weighing no more than 8,000 lbs. 96 inches for single, palletized, netted cargo weighing no more than 10,000 lbs.

All heights are measured from the surface of the pallet. Maximum height for cargo located forward off uselage station 381 or positioned on the airplane ramp is restricted to 76 inches.

In terms of width, cargo must be 14 inches from the sides of the airplane, without passengers. Without dual rails installed, the cargo compartment floor is limited to 105 5/8 inches wide. Maximum height for other-than-palletized cargo located on the aircraft is restricted to 80 inches.

Vehicle loading:
35-inch tread ways extend entire length of cargo compartment- FS 257t o 867

Maximum Axle Weights:		
Station: 257-337 682-737	6,000 lbs. per individual axle	
Station: 337- 682	13,000 lbs. per individual axle	
Aircraft Ramp Station: 737-869	3,500/2,500 lbs.	NOTE: Single axle of 3,500 lbs. (provided it is the only item on the ramp) or multiple axles of 2,500 lbs. each. In any case, maximum allowable weight on the ramp is 4,664 lbs. when aircraft rails and rollers are installed.

Palletized Cargo Loading:		
Maximum weight loaded in:		NOTE: Includes weight of cargo, pallet, and nets.
Pallet positions 1-4:	10,355lbs	
Pallet positions 5:	8,500 lbs.	
Pallet positions 6 (Ramp):	4,664 lbs.	

Height of pallet positions 1-5:	96 inches	**Maximum height allowed:** • An 18-inch aisle must be provided on the left-hand side of the pallet in position six.

Height of pallet positions 6 (Ramp):	76 inches	• To allow for the use of the toilet facility on most C-130 aircraft, an 18x18-inch cut-out must be provided on the forward, left corner of pallets loaded on the ramp. • A minimum of 6-inch aisle must be provided on the left-hand side of pallets positioned in the wheel-well area (pallet positions three and four).

Passenger Loading:	
Airline seats plus one comfort pallet:	40
Web passenger seats:	90
Paratroops:	64
Litter patients (plus medical crew):	72
Full sidewall seats only:	41
Maximum pax on over-water flights:	74

Aeromedical Evacuation Role:
A basic crew of five (two flight nurses and three medical technicians) is added for aeromedical evacuation missions. Medical crew may be decreased or increased as required by the needs of patients.

Restraint:
• Pallets are restrained to aircraft by detent locks. If pallet is properly built and nets installed correctly, no additional restraint isr equired. • Tie-down rings which have a 10,000 lb. rated capacity arei nstalled in 20-inch grid pattern on the cargo floor. • 25,000 lb. tie-down rings are not available when dual rail system is installed. (Exception: Two, 25,000 lb. tie-down rings are located just forward of the ramp hinge.) • Tie-down rings located on aircraft ramp and cargo compartment walls have a rated strength of 5,000 lb. • Tie-down rings mounted on the aircraft dual rails at 10,000 lb. • Aircraft carry a specified complement of tie-down equipment, adequate for most loads.

Figure 1.2, C-130 Characteristics (continued)

C-130J Super Hercules Characteristics		
Cargo Compartment:		
Length:	66 feet (796 inches) (779” usable)	NOTE: Although the cargo compartment is 796” long, *only* 779” are usable.

Width:	123 inches	NOTE: In terms of width, cargo must be 14 inches from the sides of the airplane, without passengers. Without dual rails installed, the cargo compartment floor is limited to 105 5/8i nches wide.
Height:	108 inches	

NOTE: Maximum heights are as follows:

- 102 inches for large, single items of cargo placed on pallets.
- 100 inches for palletized, netted cargo connected.
- 100 inches for single, palletized, netted cargo weighing no more than 8,000 lbs. 96 inches for single, palletized, netted cargo weighing no more than 10,000 lbs.

All heights are measured from the surface of the pallet. Maximum height for cargo located in pallet position one is restricted to 76 inches and needs to be contoured 12 inches on inboard side.

In terms of width, cargo must be 14 inches from the sides of the airplane, without passengers. Without dual rails installed, the cargo compartment floor is limited to 105 5/8 inches wide. Maximum height for other-than-palletized cargo located on the aircraft is restricted to 80 inches.

Vehicle loading:		
35-inch tread ways extend entire length of cargo compartment- FS 345 to 1022		
Maximum Axle Weights:		
Station: 345-652 832-1011	6,000 lbs. per individual axle	
Station: 652-832	13,000 lbs. per individuala xle	
Aircraft Ramp Station: 1011-1141	3,500/2,500 lbs.	NOTE: Single axle of 3,500 lbs. (provided it is the only item on the ramp) or multiple axles of 2,500 lbs. each. In any case, maximum allowable weight on the ramp is 5,000 lbs. when aircraft rails and rollers are installed.

Palletized Cargo Loading:		
Maximum weight loaded in:		NOTE: Includes weight of cargo, pallet,a nd nets.
Pallet positions 1-6:	10,000 lbs.	
Pallet positions 7:	8,500 lbs.	
Pallet positions 8 (Ramp):	5,000 lbs.	

Height of pallet positions 1-7:	96 inches	**Maximum height allowed:** • A 20-inch aisle must be provided on the left-hands ide of pallets positioned in pallet position eight. • To allow for the use of the toilet facility on the aircraft, a 20x20-inch cut-out must be provided ont he forward, left corner of pallets loaded on the ramp.
Height of pallet positions 8 (Ramp):	77 inches	A minimum of 6-inch aisle must be provided on the left-hand side of pallets positioned in the wheelw ell area (pallet positions four and five).

Passenger Loading:	
Airline seats plus one comfort pallet:	48
Web passenger seats:	126
Paratroops:	90
Litter patients (plus medical crew):	97
Full sidewall seats only:	62
Maximum pax on over-water flights:	138

Aeromedical Evacuation Role:
A basic crew of five (two flight nurses and three medical technicians) is added for aeromedical evacuation missions. Medical crew may be decreased or increased as required by the needs of patients.

Restraint:
• Pallets are restrained to aircraft by detent locks. If pallet is properly built and nets installed correctly, no additional restraint is required. • Tie-down rings which have a 10,000 lb. rated capacitya re installed in 20-inch grid pattern on the cargo floor. • 25,000 lb. tie-down rings are not available when dual rail system is installed. (Exception: Two, 25,000 lb. tie-down rings are located just forward of the ramp hinge.) • Tie-down rings located on aircraft ramp and cargo compartment walls have a rated strength of 5,000 lb. • Tie-down rings mounted on the aircraft dual rails at 10,000 lb. • Aircraft carry a specified complement of tie-down equipment, adequate for most loads.

 Learning Objective 2 *Capabilities of the C-17 Globemaster:*

A. History.

1. The C-17 made its maiden flight on Sept. 15, 1991, and the first production model was delivered to Charleston Air Force Base, now known as Joint Base Charleston, S.C., on June 14, 1993 (See Figure
   1. 3).
   2. The first squadron of C-17s, the 17th Airlift Squadron, was declared operationally ready Jan. 17, 1995.

B. Mission
   1. The ultimate measure of airlift effectiveness is the ability to rapidly project and sustain an effective combat force close to a potential battle area. Threats to U.S. interests have changed in recent years, and the size and weight of U.S.- mechanized firepower and equipment have grown in response to improved capabilities of potential adversaries. This trend has significantly increased air mobility requirements, particularly in the area of large or heavy outsize cargo. As a result, newer and more flexible airlift aircraft are needed to meet potential armed contingencies, peacekeeping or humanitarian missions worldwide. The C- 17 is capable of meeting today's demanding airlift missions.
      a). The C-17 Globemaster III is the newest, most flexible cargo aircraft to enter the airlift force.
      b). The C-17 is capable of rapid strategic delivery of troops and all types of cargo to main operating bases or directly to forward bases in the deployment area.
      c). The aircraft can perform tactical airlift and airdrop missions and can transport litters and ambulatory patients during aeromedical evacuations when required.
      d). The inherent flexibility and performance of the C-17 force improve the ability of the total airlift system to fulfill the worldwide air mobility requirements of the United States.

C. Features
   1. Reliability and maintainability are two outstanding benefits of the C-17 system. Current operational requirements impose demanding reliability and maintainability. These requirements include an aircraft mission completion success probability rate of 92 percent, only 20 aircraft maintenance man-hours per flying hour, and full and partial mission availability rates of 74.7 and 82.5 percent, respectively.
   2. The aircraft is operated by a crew of three (pilot, co-pilot and loadmaster), reducing manpower requirements, risk exposure and long-term operating costs.
   3. Cargo is loaded onto the C-17 through a large aft door that accommodates military vehicles and palletized cargo.
   4. The C-17 can carry virtually all of the Army's air-transportable equipment. D. Design.
   1. The design of the aircraft allows it to operate through small, austere airfields. The C-17 can take off and land on runways as short as 3,500 feet (1,064 meters) and only 90 feet wide (27.4 meters).

2. Even on such narrow runways, the C-17 can turn around using a three-point star turn and its backing capability.
3. Maximum payload capacity of the C-17 is 170,900 pounds, and its maximum gross takeoff weight is 585,000 pounds. With a payload of 169,000 pounds and an initial cruise altitude of 28,000 feet, the C-17 has an unrefueled range of approximately 2,400 nautical miles.
4. Its cruise speed is approximately 450 knots (.74 Mach).
5. The C-17 is designed to airdrop 102 paratroopers and equipment.

Characteristics (See Figure 1.4 below).

C-17 Globemaster III Characteristics		
Cargo compartment:		
Length:	88’ (1056 inches)	
Width:	18’ (216 inches)	
Height:	9’.5” (148 inches)	
Cargo area:		
Fuselage Station: 347-1165 (main cargo floor) and from Station 1165-1403 (aircraftr amp).		
Vehicle Loading (Maximum weights):		
Station 347-578 Station 1073-1165	27,000 lbs. per individual axle	NOTE: Width of cargo affects use of sidewall seats. Cargo/vehicle widths less than 157 inches, seats will be available onb oth sides on the cargo; cargo/vehicle widths of 157 to 192 inches, seats will bea vailable on one side of the aircraft only. Cargo/vehicle widths 193 inches and greater, no seats will be available beside the cargo.
Station 578-1073	36,000 lbs. per individual axle	
Aircraft Ramp Station 1165-1403	27,000 lbs. per individual axle	

Palletized cargo loading:		
Logistics Rail System: (Pallet positions 1L-9L and 1R-9R)	10,355 lbs.	NOTE: Includes weight of cargo, pallet,n ets.
Aerial Delivery System:(Pallet positions 1-11):	10,355	
Height of all pallets positions:	96”	
Passenger Loading:		
Permanently installed seats:	54 pax	NOTE: Any passenger load requires a minimum of one loadmaster in the cargoc ompartment; two if more than 40 passengers are carried. Passengers will NOT occupy a seat closer than 30 inches from strapped or netted cargo.
Onboard centerline seat kit:	48 pax	
Paratroops (maximum):	102 paratroops	
Onboard litter capacity:	12 liters	
Additional litter capacity:	36 pax	
Maximum over-water flights:	102 pax	

Learning Objective 3 *Capabilities of the C-5 Galaxy:*

A. History.

1. Lockheed-Georgia Co. delivered the first operational Galaxy to the 437th Airlift Wing, Charleston Air Force Base, now known as Joint Base Charleston, S.C., in June l970.
2. In March 1989, the last of 50 C-5Bs was added to the 76 C-5As in the Air Force's airlift force structure.
   a). Based on a study showing 80 percent of the C-5 airframe service life remaining, AMC began an aggressive program to modernize the C-5 in 1998 (See Figure 1.5).
   b). The C-5 Avionics Modernization Program included upgrading the avionics to improve communications, navigation and surveillance/air traffic management compliance.
   c). The upgrade also added new safety equipment and installed a new autopilot system.
3. In FY04 and FY12 Congress authorized the retirement of 46 C-5As.
   a). In FY06 one C-5B crashed at Dover AFB, Del., and was not repairable
   b). The resulting fleet size from these events is 79, i.e.29 C-5As and 52 C5B/C/M. B. Mission.

1. The C-5 Galaxy is one of the largest aircraft in the world and the largest airlifter in the Air Force inventory. The aircraft can carry a fully equipped combat-ready military unit to any point in the world on short notice and then provide the supplies required to help sustain the fighting force. C. Features.
1. The C-5 has a greater capacity than any other airlifter. It has the ability to carry 36 standard pallets and 81 troops simultaneously.
2. The Galaxy is also capable of carrying any of the Army's air-transportable combat equipment, including such bulky items as the 74-ton mobile scissors bridge.
3. It can also carry outsize and oversize cargo over intercontinental ranges and can take off or land in relatively short distances.
4. Ground crews are able to load and off-load the C-5 simultaneously at the front and rear cargo openings, reducing cargo transfer times.
5. Other features of the C-5 are:
   a). Able to operate on runways 6,000 feet long (1,829 meters).
   b). Five landing gear totaling 28 wheels to distribute the weight.
   c). Nose and aft doors that open the full width and height of the cargo compartment to permit faster and easier loading.
   d). A "kneeling" landing gear system that permits lowering the parked aircraft to facilitate drive-on/drive-off vehicle loading and adjusts the cargo floor to standard truck-bed height.

e). Full width drive-on ramps at each end for loading double rows of vehicles.

f). A maintenance diagnostics system that records and analyzes data from more than 800 (C-5A) and 7000 (C-5M) test points so that maintenance repair time is reduced.

6. The C-5 has the distinctive high T-tail, 25-degree wing sweep, and four turbofan engines mounted on pylons beneath the wings.
7. The C-5 has 12 internal wing tanks with a total capacity of 51,150 gallons (194,370 liters) of fuel -- enough to fill 6 1/2 regular size railroad tank cars.
8. A full fuel load weighs 332,500 pounds (150,820 kilograms).
9. A C-5 with a cargo load of 270,000 pounds (122,472 kilograms) can fly 2,150 nautical miles, offload, and fly to a second base 500 nautical miles away from the original destination -- all without aerial refueling.
10. With aerial refueling, the aircraft's range is limited only by crew endurance. D. Characteristics (See Figure 1.5).

Figure 1.5, C-5 Galaxy Characteristics

C-5 Galaxy Characteristics		
Cargo Compartment:		
Length:	1736 inches	NOTE: Cargo must be six inches from sides and top of aircraft. Aft Ramp cargo height is restricted to 70 inches.
Width:	228 inches	
Height:	162 inches	
Maximum Axle Weights:		
Station 395-517 Station 1971-2131:	3,600 lbs.(in any 20" length)	NOTE: Side-by-side or multiple wheeled vehicles axles loaded between F.S. 1458 and F.S. 1518 are limited to a combined maximum weight of 25,000 pounds. Tracked type vehicles are excluded from this restriction.
Station 511-724 Station 1884-1971:	20,000 lbs. (in any 40" length)	
Station 724-1884:	36,000 lbs. (in any 40" area)	
Palletized Cargo Loading:		
Pallet positions 3 thru 34	10,355 lbs.	NOTE: Maximum allowable using HCU-7/E and HCU-15/C nets. Includes weight of cargo, pallet and nets.
Pallet positions 1, 2, 35, and 36(Fwd and Aft Ramps)	7,500 lbs.	
Height of pallet positions 1 thru 34	96"	NOTE: Maximum height allowed
Height of pallet positions 35 and 36(Ramp)	70"	
Passenger Loading:		
Airline seats (permanently installed):	73 pax/troops	NOTE: When 20 or more troops are transported aboard the C-5, a baggage pallet(s) will be used.
Airline seats (additional seat kit):	267 pax/troops	
Web passenger seats:	Not Available	
Paratroops:	73 paratroops	NOTE: 463L pallets loaded in pallet positions 1, 2, 35, and 36 (Forward and Aft ramps) will have a 14-inch access aisle which will extend from the outboard edge of pallet to the verticals tacking line of the cargo.
Litter patients (plus medical crew):	Not Available	
Full sidewall seats only:	Not Available	
Maximum pax on over-water flights	329 pax	

 Learning Objective 4 *Capabilities of the KC-10 Extender:*

A. History

1. A modified Boeing Company DC-10, the KC-10A entered service in 1981. Although it retains 88 percent of systems commonality with the DC-10, it has additional systems and equipment necessary for its Air Force mission (See Figure 1.6).
   a). These additions include military avionics; aerial refueling boom and aerial refueling hose and drogue; seated aerial refueling operator station; and aerial refueling receptacle and satellite communications.
2. During operations Desert Shield and Desert Storm in 1991, the KC-10 fleet provided inflight refueling to aircraft from the U.S. armed forces as well as those of other coalition forces.
   a). In the early stages of Operation Desert Shield, in-flight refueling was key to the rapid airlift of materiel and forces.
   b). In addition to refueling airlift aircraft, the KC-10, along with the smaller KC-135, moved thousands of tons of cargo and thousands of troops in support of the massive Persian Gulf buildup.
   c). The KC-10 and the KC-135 conducted about 51,700 separate refueling operations and delivered 125 million gallons (475 million liters) of fuel without missing a single scheduled rendezvous.
3. Since Sept. 11, 2001, KC-10s have played a prominent role. The KC-10 has flown more than 350 missions guarding U.S. skies as a part of Operation Noble Eagle. During operations Enduring Freedom and Iraqi Freedom, KC-10s flew more than 1,390 missions delivering critical air refueling support to numerous joint and coalition receiver aircraft. B. Mission.

1. The KC-10 Extender is an Air Mobility Command advanced tanker and cargo aircraft designed to provide increased global mobility for U.S. armed forces.
2. Although the KC-l0's primary mission is aerial refueling, it can combine the tasks of a tanker and cargo aircraft by refueling fighters and simultaneously carry the fighter support personnel and equipment on overseas deployments.
3. The KC-10 is also capable of transporting litter and ambulatory patients using patient support pallets during aeromedical evacuations. C. Features.

1. The KC-10 can transport up to 75 people and nearly 170,000 pounds of cargo a distance of about 4,400 miles unrefueled.
   a). In addition to the three main DC-10 wing fuel tanks, the KC-10 has three large fuel tanks under the cargo floor, one under the forward lower cargo compartment, one in the center wing area and one under the rear compartment. Combined, the capacity of

the six tanks carries more than 356,000 pounds (160,200 kilograms) of fuel - almost twice as much as the KC-135 Stratotanker.

2. Using either an advanced aerial refueling boom, or a hose and drogue centerline refueling system, the KC-10 can refuel a wide variety of U.S. and allied military aircraft within the same mission. The aircraft is equipped with lighting for night operations.
3. The KC-10's boom operator controls refueling operations through a digital, fly-by wire system. Sitting in the rear of the aircraft, the operator can see the receiver aircraft through a wide window. During boom refueling operations, fuel is transferred to the receiver at a maximum rate of 1,100 gallons (4,180 liters) per minute; the hose and drogue refueling maximum rate is 470 gallons (1,786 liters) per minute. The automatic load alleviation and independent disconnect systems greatly enhance safety and facilitate air refueling. The KC-10 can be air- refueled by a KC-135 or another KC-10A to increase its delivery range.
4. The large cargo-loading door can accept most air forces' fighter unit support equipment.
   a). Powered rollers and winches inside the cargo compartment permit moving heavy loads.
   b). The cargo compartment can accommodate loads ranging from 27 pallets to a mix of 17 pallets and 75 passengers.

KC-10 Extender Characteristics

Length:	1508 inches	NOTE: At 100" above the floor level, the compartment width is approximately 144 inches. Due to the curvature of the fuselage, thec argo compartment area forward and aft of the constant section diminishes in height and width.
Width:	218 inches	
Height:	108 inches	
Cargo Area:	From FS 496-2004 (main cargo floor)	
Maximum Axle Weights:		
Station 630-1066	4,500 lbs. per individual axle	NOTE: Maximum axle weights are predicated on a minimum separation of 48 inches.
Station 1066-1175	4,800 lbs. per individual axle	
Station 1175-1502	3,200 lbs. per individual axle	
Station 1502-1937	4,000 lbs. per individual axle	
Palletized Cargo Loading:		
Pallet positions 1-6 (left and right)	6,500 lbs.	NOTE: Includes weight of cargo, pallet, and nets or other tie-down equipment.
Pallet positions 7-11 (left and right)	10,000 lbs.	
Pallet positions 12-13 (left and right)	6,500 lbs.	
Height of pallet positions 2 thru 10	96"	Note: Cargo door height limits all cargo to 96 inches above surface of pallet. Cargo compartment curvature restricts normal pallet building techniques.
Height of pallet positions 11 thru 12	96"	
Passenger Loading:		
Airline seats (Code A):	8 Pax	
Airline seats (Code B):	10 Pax	
Airline seats (Code D):	65 Pax	
Airline Seats (Increased Accommodation Kit)	69 Pax	
Web passenger seats:	Not Available	
Paratroops:	Not Available	
Litter patients (plus medical crew):	Not Available	
Full sidewall seats only:	Not Available	
Maximum pax on over-water flights	69 pax	

HQ AMC/A4TS Page **36** of **119** **Learning Objective 3** *Capabilities of the KC-135 Stratotanker:*

A. History.

1. Air Mobility Command manages an inventory of 414 Stratotankers, of which the Air Force Reserve and Air National Guard fly 247 aircraft in support of AMC's mission (See Figure 1.8).
2. The Boeing Company's model 367-80 was the basic design for the commercial 707 passenger plane as well as the KC135A Stratotanker.
   a). In 1954, the Air Force purchased the first 29 of its future 732-plane fleet.
   b). The last KC-135 was delivered to the Air Force in 1965.
3. Through the years, the KC-135 has been altered to do other jobs ranging from flying command post missions to reconnaissance.
   a). RC-135s are used for special reconnaissance and Air Force Materiel Command's NKC-135As are flown in test programs.
   b). Air Combat Command operates the OC-135 as an observation platform in compliance with the Open Skies Treaty. B. Mission.

1. The KC-135 Stratotanker provides the core aerial refueling capability for the United States Air Force and has excelled in this role for more than 50 years.
   a). This unique asset enhances the Air Force's capability to accomplish its primary mission of global reach.
   b). It also provides aerial refueling support to Air Force, Navy, Marine Corps and allied nation aircraft.
   c). The KC-135 is also capable of transporting litter and ambulatory patients using patient support pallets during aeromedical evacuations. C. Features.

1. A cargo deck above the refueling system can hold a mixed load of passengers and cargo.
   a). Depending on fuel storage configuration, the KC-135 can carry up to 83,000 pounds of cargo.
2. Nearly all internal fuel can be pumped through the flying boom, the KC-135's primary fuel transfer method. One crewmember, known as the boom operator, is stationed in the rear of the plane and controls the boom during in-flight air refueling.
3. A special shuttlecock-shaped drogue attached to and trailing behind the flying boom may be used to refuel aircraft fitted with probes. Some aircraft have been configured with the multipoint refueling system, which consists of special pods mounted on the wingtips.

These KC-135s are capable of refueling two receiver aircraft at the same time.

4. Characteristics (See Figure 1.9).

KC-135 Stratotanker Characteristics	
Cargo Compartment:	
Length:	840 inches
Width:	129 inches
Height:	84 inches
Cargo Area:	From FS 440-1120 (main cargo floor)
Palletized Cargo Loading (Max cargo loading wt):	
Pallet positions 1-6	6,000 lbs.
Height of pallet positions 1 thru 6	65 inches
Passenger Loading:	
Airline seats:	56 Pax
Web passenger seats:	57 Pax
Litter patients (plus medical crew):	8 litters(1 floor loaded)
Full sidewall seats only:	Not Available
Maximum pax on over-water flights	57 pax

Learning Objective 3 *Capabilities of the KC-46 Pegasus:*

A. History
   1. First flight was on September 25, 2015
   2. The Boeing-built KC-46A tanker is a military version of the 767 commercial aircraft. It is intended to replace the oldest of the U.S. Air Force's KC-135 Stratotanker fleet

B. Mission
   1. The KC-46A Pegasus is a wide body, multirole tanker that can refuel all U.S.
   2. Allied and coalition military aircraft compatible with international aerial refueling procedures.
   3. Boeing designed the KC-46 to carry passengers, cargo and patients.
   4. The aircraft can detect, avoid, defeat and survive threats using multiple layers of protection, which will enable it to operate safely in medium-threat environments

C. Features
   1. Two Pratt & Whitney 4062 engines
   2. Max Speed 530 mph
   3. Boom operator refueling screen is a 24 inch display with 3D refueling picture verses traditional refueling.
   4. The KC-46A can carry up to 18 side-by-side 463L cargo pallets. 5. 10 pallet positions centerline

KC-46 Pegasus		
Overall Dimensions		
Length:	1990 inches	
Width:	1873 inches	
Height:	634 inches	
Zone Weight Limits		
Zone 1-3 and 6-8	7020 lb	Notes: Maximum Main Cargo deck hold is 65,000 lbs
Zone 4-5	9936 lb	
Zone 9-10	5720 lb	
Side By Side Single Pallet Weight Limits		
Pallet Positions 1 thru 3	4676 lbs	Notes: Cannot Exceed Zone Weight limits
Pallet Positions 4 and 5	9936 lbs	
Pallet positions 6-8	4676 lbs	
Centerline Pallet weight limits		
1-3 Center	7020 lbs	
4-5 Center	9936 lbs	
6-8 Center	7020 lbs	
9-10 Center	5720 lbs	
Passenger Loading:		
Aircrew Seats (permanent	15	
Airline seats (additional se	58	
Contengecy Seats	114	
Aeromedical Passengers	58 Patients	

Figure 2.0, KC-46 Pegasus Characteristics