BY ORDER OF THE SECRETARY OF THE AIR FORCE

AIR FORCE MANUAL 11-2AE VOLUME 3 ADDENDA-A

16 JUNE 2020

Incorporating Change 1, 13 MARCH 2023
Corrective Action, 17 MARCH 2023
Flying Operations

AEROMEDICAL EVACUATION OPERATIONS CONFIGURATION/MISSION PLANNING

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ACCESSIBILITY: Publications and forms are available on the e-Publishing web site at **www.e-Publishing.af.mil** for downloading or ordering.

RELEASABILITY: There are no releasability restrictions on this publication.

OPR: HQ AMC/A3VM

Certified by: AF/A3T
(Maj Gen James A. Jacobson)

Supersedes: AFMAN11-2AEV3ADDENDA-A 19 October 2018

Pages: 79

This publication implements Air Force Policy Directive (AFPD) 11-2, *Aircrew Operations*, and supports Air Force Instruction (AFI)/Air Force Manual (AFMAN) 11-2AE Vol 3, *Aeromedical Evacuation (AE) Operations Procedures.* It establishes procedures and guidance for the basic aeromedical evacuation configurations for C-130, C-17, KC-135, and C-21 aircraft to safely and successfully accomplish their worldwide Aeromedical Evacuation missions. This is a specialized publication intended for use by airmen who have graduated from technical training related to this publication. It applies to individuals at all levels who are involved with Aeromedical Evacuation operations, including the Air Force Reserve (AFR) and Air National Guard (ANG), except where noted otherwise. This AFMAN may be supplemented at any level, but all supplements must be routed to Office of Primary Responsibility (OPR) of this publication for coordination prior to certification and approval. Refer recommended changes and questions about this publication to the OPR using the AF Form 847, *Recommendation for Change of Publication*; route AF Forms 847 from the field through the appropriate functional chain of command. The authorities to waive wing/unit level requirements in this publication are identified with a Tier ("T-0, T-1, T-2, T-3") number following the compliance statement. See AFI 33-360, *Publications and Forms Management*, for a description of the authorities associated with the Tier numbers. Submit requests for waivers through the chain of command to the appropriate Tier waiver approval authority, or alternately, to the requestor's commander for non-tiered compliance items. Ensure

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SUMMARY OF CHANGES

This interim changes revises AFMAN11-2AV3ADDENDA-A by (1) Incorporating KC-46 Systems under Chapter 10, “Opportune Aircraft Systems” by adding paragraph 10.3, and (2) providing guidance on aircraft systems, mission execution, miscellaneous information, floor loading, and planning factors for the KC-46. A margin bar (|) indicates newly revised material..

Chapter 1

OVERVIEW

1.1. General. This instruction establishes basic cargo compartment configuration, standard equipment, and location of such equipment aboard the C-130, C-17, KC-135, and C-21 aircraft. Opportune aircraft systems, KC-10, C-5 and C-12J are identified and MAJCOMs will provide a supplement that will establish basic cargo compartment configuration, standard equipment, and location of such equipment aboard the theater's opportune aircraft. **(T-2).** Mission Design Series (MDS) specific survival equipment is for primary flight crewmembers only. Aeromedical Evacuation Crews (AEC) do not require parachutes. This AFMAN is intended to provide the best possible operating instructions for most circumstances but cannot account for every situation that may be encountered during contingency operations.

1.1.1. Applicability. This AFMAN is applicable to all AE units/individuals involved with AE operations. It is a compilation of information from aircraft flight manuals, other Air Force directives, as well as an original source document for many areas. Basic source directives have precedence in the case of any conflicts, revisions, and matters of interpretation.

1.1.2. This AFMAN provides broad guidance and cannot address every conceivable circumstance. AECMs are expected to use sound judgment and operational risk management to meet mission demands and to ensure the safe conduct of the flight.

1.2. Responsibility. Personnel engaged in planning operations must consider the most appropriate configuration that satisfies mission requirements and permits the minimum amount of variations and man-hours to change. United States Air Force (USAF) units performing services on the aircraft (i.e., Maintenance, Aerial Port, and Aircrew Flight Equipment) are responsible for configuring the aircraft in accordance with appropriate 11-2MDS V3 ADDENDA A instruction and as outlined in mission directives, to include the stowage/installation of the equipment in accordance with the configuration and equipment tables outlined herein. The aircrew normally accomplish some configurations with assistance by maintenance personnel. Aircrew personnel, during preflight, will ensure that required mission equipment has been provided and is properly installed. **(T-2).** When the aircraft configuration is not completed prior to aircrew show time, AECMs should request assistance from the loadmaster (LM) or boom operator (BO) in the completion of the configuration. Items that can be corrected without maintenance assistance (i.e., seat belts, seat hooks, etc.) will be corrected by the LM/BO. LM's/BO's have overall responsibility for configuration management and proper installation of equipment on the aircraft.

1.3. Modifications. The configuration codes of this AFMAN may, if necessary, require modifications for a specific mission. AECMs must be carefully evaluated each modification prior to mission operation to ensure maximum flight safety and compatibility with aircraft equipment. Each mission directive will identify the basic configuration by code and the modification, if necessary, to satisfy the mission requirement. **(T-2).** For example, an AE mission may require more litters than available in configuration AE-1. Consult the appropriate configuration charts to determine at what location the desired additional litters can be installed, and which seats must be removed. Indicate in the mission directive, by position (left or right, and number) which seats are to be deleted and (by alphabetical position) the litter tier provisions to be installed.

1.4. Distribution. See AFI/AFMAN 11-2AE Vol 3, *Aeromedical Evacuation (AE) Operations Procedures,* **Chapter 1** and apply the following: Maintain at least one copy of this instruction in each squadron operations section (Flight Crew Information File Library). The following agencies should have direct access (latest electronic version or paper copy): Staff operations; Aircrew Stan/Eval; Command Posts/operations centers; Air freight management; Fleet Service; Aircraft Maintenance units; alternate mission equipment sections; quality control; and Aircrew Flight Equipment sections. Additionally, one paper/electronic copy should be aboard each aircraft for each supplemental weight and balance handbook.

1.5. Key Words Explained.

1.5.1. "Will" and "shall" indicate a mandatory requirement.

1.5.2. "Should" is normally used to indicate a preferred, but not mandatory, method of accomplishment.

1.5.3. "May" indicates an acceptable or suggested means of accomplishment.

1.5.4. **"Note"** indicates operating procedures, techniques, etc., that are considered essential to emphasize.

1.5.5. **"CAUTION"** indicates operating procedures, techniques, etc., which could result in damage to equipment if not carefully followed.

1.5.6. **"WARNING"** indicates operating procedures, techniques, etc., which could result in personal injury or loss of life if not carefully followed.

1.6. Deviations and Waivers.

1.6.1. Do not deviate from the policies and guidance in this AFMAN under normal circumstances, except for safety and emergency situations, or when a waiver has been granted from the appropriate authority.

1.6.2. When necessary to protect the crew, patients, passengers or aircraft from a situation not covered by this AFMAN and immediate action is required, the pilot in command (PIC) is the ultimate authority and responsible for the course-of-action to be taken. Report deviations or exceptions without waiver through channels to Major Command Office of Primary Responsibility (MAJCOM OPR).

1.7. Combined Command Operations. Plan and conduct all operations that include forces from multiple MAJCOMs using provisions in this AFMAN. Do not assume or expect aircrews to perform MAJCOM theater unique procedures without owning MAJCOM/A3/Director of Operation approval and advance training.

1.8. AE Medical Equipment. The Medical Crew Director (MCD) determines required AE equipment position based upon mission profile and patient requirements.

Chapter 2

AIRCREW FLIGHT EQUIPMENT

2.1. Aircraft Flight Equipment Configuration. AECs are required to utilize Aircrew Flight Equipment to accomplish the mission. Standard quantities of aircrew flight equipment are identified in this instruction by Mission Design Series Specific AFI/AFMAN 11-2MDS Vol 3, ADDENDA A. When a Mission Design Series specific Vol 3, Addenda does not exist, refer to AFMAN 11-301 Vol 2, *Maintenance and Configuration Requirements for Aircrew Flight Equipment*. MAJCOM's may dictate other required AFE. During AE contingency/deployment generations, it is imperative crewmembers deploy with the full complement of AFE. This equipment must be at forward operating locations to allow maximum mission flexibility when aircrews are away from home station. **Note:** Demonstration of onboard Aircrew Flight Equipment is required for all missions.

2.1.1. AFE units, when supporting AE missions and aircrew, build and maintain the equipment listed in AFMAN 11-301 Vol 2. Individual MAJCOM's A3 AFE staff direct what units will maintain for local training and operational missions. **(T-2).**

2.1.2. In accordance with AFMAN 11-301 Vol 2, AECM unit commanders, through active coordination with their supporting AFE unit, develop a process for AECMs to sign out AFE from their supporting AFE unit.

2.2. Emergency Passenger Oxygen System (EPOS).

2.2.1. EPOS is the preferred passenger oxygen, smoke, and fume protection for AE patients.

2.2.2. The EPOS is a self-contained protective breathing device to provide oxygen during aircraft decompressions, when smoke or toxic fumes are present, and to aid in exiting oxygen deficient smoke-filled cabins.

2.2.3. The system consists of a hood, oxygen cylinder, carbon dioxide control, and neck seal. The hood incorporates multiple layers of polyimide and PFA film providing heat and flame resistant to 1000°C (1832° F), ease of communication, tear resistance, and durability. The altitude restriction for the EPOS is flight level 410 (41,000 feet).

2.2.4. An anti-fog coating is applied to the inside of the hood.

2.2.5. The EPOS contains one oxygen cylinder that contains 18 liters of aviator grade oxygen. Once activated, the oxygen cylinder dispenses oxygen for approximately five minutes. The sound of oxygen may be heard flowing into the hood. Once the oxygen cylinder has been depleted, the hood will begin to collapse. If the hood collapses to the point where it touches the wearer's face, the wearer should be prepared to remove the EPOS. EPOS should also be removed when the individual has evacuated to a safe area or is directed to do so by a qualified crewmember. Carbon dioxide is controlled by panels of lithium hydroxide mounted around the inside bottom portion of the hood.

2.2.6. Duration of Use: The length of time the EPOS will provide oxygen is dependent upon the user's body weight and workload level. Higher body weights and higher workloads result in increased oxygen consumption and higher production of carbon dioxide. Individuals in a high state of stress or high anxiety may also consume more oxygen and produce more carbon dioxide. Typical performance for a 154 lbs. (70 kg) person is as follows:

2.2.6.1. Five minutes under moderate to heavy workload.

2.2.6.2. 20 minutes under light to moderate workload.

2.2.6.3. Up to 60 minutes under sitting sedentary conditions.

2.2.7. The AE crew is responsible for ensuring that there are enough EPOS units for each AECM, patient, and attendant. On aircraft with the EPOS stored in a sealed container, a pre-flight/post-flight inspection consists of ensuring there are enough units inside the sealed container. If the EPOS units are in open containers check the package seal. If the seal is broken remove the EPOS from aircraft and replace with a serviceable device.

2.2.7.1. Preflight of EPOS consists of checking the color of the litmus paper on the humidity indicator disk located in the barrier pouch and the expiration date. If the litmus paper is pink, the unit is not serviceable. **WARNING**: During activation, grasp the body, large round end of cylinder. Failure to do so will restrict the metal tab from opening and activating the oxygen system. The EPOS will not function without the removal of the metal tab. If the red knob separates, grasp the lanyard to pull the metal tab off the cylinder and then proceed to use the EPOS as directed. Failure to activate the flow of oxygen will reduce the level of oxygen inside the hood and will result in suffocation and death. **WARNING**: Ensure hair, jewelry, shirt collars, etc. are not caught between the neck seal and the neck. Reduced effectiveness of the EPOS may occur increasing the likelihood of injury.

2.2.8. AE crew will ensure there are EPOS units prepositioned at each patient. **(T-3).** If not, work with the LM/BO to place one at each station. Secure the EPOS on the upper seat support tube using the attached tie-down strap and quick release snap. Position the EPOS bag to the forward side of the patient and between the seat back webbing to ensure rapid access.

2.2.9. For KC-135 aircraft, two additional EPOS will be positioned: one in the latrine and one at the galley/galley area. **(T-2). WARNING**: AECMs will notify BO if they are not there. **(T-2).**

2.2.9.1. AECMs will have emergency oxygen available. **(T-2). Note**: The EPOS is not an acceptable source of emergency oxygen while performing crew duties. AECMs will don the EPOS, cease all crew duties and be seated if there are no other oxygen sources available. **(T-2).**

2.2.10. For aircraft with airline-type seating, AECMs will be placed EPOS in the seat pockets; assist the BO/LM with handing out the EPOS to patients to be stored in seat pouches. **(T-2).**

2.2.11. For C-17 aircraft, check for EPOS underneath each seat. Notify LM if they are missing.

2.2.12. For all litter patients, AECMs will secure the EPOS at the head of each litter. **(T-3).**

2.2.13. For all other aircraft, ensure an EPOS is provided to each patient/attendant.

2.3. Oxygen Mask.

2.3.1. P/N 358-1506 series quick-don oxygen mask with goggles attached or upgraded one-piece configuration, is the preferred smoke and fume protection for primary AECMs.

2.3.2. All AECM 358-1506V Series oxygen masks should have low impedance microphones installed. If the AE crew is flying on C-17A aircraft with a high impedance communication system, the MCD may use one of the 15 aircraft installed C-17A quick don masks (with high impedance microphone) to communicate with the primary aircraft crew.

2.4. Protective Breathing Equipment (PBE).

2.4.1. In the event that an AECM's "walk around" oxygen bottle becomes depleted, AECMs may utilize PBE with the fire-retardant polyethylene (green) storage container and neoprene neck seal. PBE will remain in their original "hard" carrying case to provide fire and puncture-proof protection. **Note**: LM/BO will ensure PBE are installed on each aircraft. **(T-2).**

2.4.2. This device is a 15 minute, self-contained, completely disposable breathing unit, with a solid-state oxygen supply source. The universal size hood permits oral communication without compromising protection.

2.4.3. Preflight of the PBE consists of checking the color of the litmus paper on the humidity indicator disk located through the serviceability window in the side of the case. If the litmus paper is pink, the unit is not serviceable.

2.4.4. Maximum operating altitude is flight level 400 (40,000 feet).

2.4.5. The containers are not to be opened unless an oxygen deficient, smoke-laden, or toxic atmosphere exists. **WARNING**: Improper use may cause injury or death. User must have adequate training to use. **(T-2). WARNING**: Ensure hair, jewelry, shirt collars, etc. are not caught between the neck seal and the neck. Reduced effectiveness of the EPOS may occur increasing the likelihood of injury.

2.4.6. PBEs are standard aircraft installed AFE. AECMs will not request additional PBEs be installed on aircraft for AECM use or request to sign PBEs out on a temporary hand receipt from the AFE shop. **(T-3).**

2.5. Life Preserver Units (LPU):

2.5.1. The adult/child LPU is the preferred LPU for AECMs and patients during ditching situations. The adult/child LPU does not require pre-fitting prior to flight and is easier to don during emergency situations. AECMs can wear the adult/child LPU with survival vests. At a minimum, each aircraft will have one LPU for each patient/attendant during overwater flights. **(T-2).** AECMs must notify BO/LM if there are not enough adult/child LPUs for each patient/AECM. **(T-2).** The adult/child LPU can be used on children greater than 18 months old. The adult/child LPU has a water activated light and oral inflation tube.

2.5.2. The life preservers are inflated by forcefully pulling the red carbon dioxide release tabs down or orally by using the oral inflation tubes.

2.5.3. LPU-6/P infant cot may be used for infants up to 18 months old. To use the LPU-6/P, place the infant feet first into the cot with head towards open end of hood. Secure the infant with restraining tape around the chest and across the upper thighs. For added protection, a baby blanket should be placed around or under the infant before placing the infant in the cot. The LPU-6/P has the following survival components: airports, water activated light, lanyard, oral inflation tubes, and webbing straps. **Note**: The LPU-6/P is the only life preserver that can be inflated inside the aircraft.

2.6. Life Rafts. AECMs coordinate with PIC, LM/BO to ensure life rafts are available.

Chapter 3

AIRCRAFT SUPPORT EQUIPMENT

3.1. Litter Station Augmentation Set (LSAS).

3.1.1. LSAS. A C-17 LSAS has nine litter stations (18 stanchions, 18 struts and 9 utility panels) and spare parts (one pair of additional struts, additional stanchion, and additional utility panel) providing 27 additional litter capabilities.

3.1.2. The intended use of the C-17 LSAS is for large patient loads that exceed the aircraft's organic litter carrying capability. Although a mission may not require a full 36 litter positions, the AECMs will ensure the entire LSAS kit and components (in storage box) are transported on the mission. **(T-3).** This ensures that the equipment set is kept together for all stages of employment and allows repositioning movement of the C-17 LSAS as designated by the airlift-tasking agency.

3.1.3. For information regarding management, custodianship and maintenance of the LSAS, refer to the LSAS CONOPS located in electronic flight bag.

3.1.4. LSAS Tasking. The airlift-tasking agency, 618th Air Operations Center (AOC), United States Air Forces in Europe (USAFE)/Pacific Air Forces (PACAF) Warfighting Headquarters, or Air Mobility Division/Aeromedical Evacuation Control Team (AECT) is responsible for tasking the LSAS for use when required. If the LSAS is needed for an AE mission at a location other than where it is assigned, 618th AOC, USAFE/PACAF Warfighting Headquarters, or AECT tasks and positions the LSAS to the location required for the mission, using opportune airlift or the Traffic Management system. The C-2 agency may consider tasking an Aeromedical Evacuation Operations Office to accompany the C-17 LSAS when it will terminate at a location other than point of origination. The C-2 agency may also determine that a crew duty time/flight duty period waiver may be necessary to facilitate getting the LSAS properly processed through Traffic Management Office for return shipment.

3.1.4.1. When the LSAS is employed for an AE mission, care and management of the LSAS is transferred from the custodian to AE personnel until return to place of mission origin or transfer to Traffic Management Office for return shipment.

3.1.4.2. LSAS Positioning. If an LSAS is required for an operational AE mission, the storage box is normally loaded on the aircraft ramp in the aerial delivery system Aerial Delivery System rails in accordance with Technical Order (TO) 1C-17A-9 (Position 10 or 11).

3.1.4.3. If a full complement of litters is not required, the LSAS may be positioned in any Aerial Delivery System (center row) pallet position. This positioning is intended to maximize the C-17 litter capacity and facilitates aircraft evacuation paths on both sides of the aircraft.

3.1.4.4. AECMs will ensure the LSAS is not be positioned in the logistic rail system at any time during patient loading/offloading or during flights with patients on board the aircraft. **(T-2).** This is to ensure adequate egress paths are maintained in accordance with TO 1C-17A-1.

3.1.4.5. Should a LSAS storage box be transported as cargo with no patients on board the aircraft, the container may be positioned in any pallet position using either rail system in accordance with TO 1C-17A-9.

3.1.5. Mission Execution. The MCD develops/reviews a load plan based on patient requirements. The AE crew receives the LSAS equipment at the aircraft from the LSAS custodial Ramp Services/Aerial Port Squadron personnel and inspect the LSAS for damage prior to use. The AE crew configures the aircraft in accordance with the load plan using the aircraft's integral organic litter station components and those provided in the C-17 LSAS.

3.1.6. Patient Loading/Offloading. The LSAS remains onboard the aircraft during patient loading/offloading. **Exception:** In the rare event that a specific patient's condition, equipment needs or size raises serious safety concerns, the LSAS box may be removed from the aircraft for increased clearance. The PIC with coordination between the MCD and LM is the final authority in determining if the LSAS should be removed to facilitate patient on/offloading. The MCD requests ground handling equipment, as required, on the off-load message. **WARNING:** During loading/offloading, pay attention to the elevated area around the edge of the LSAS. (This area could be a potential tripping hazard). Spotter(s) should be used to ensure litter bearers are aware of the hazard. Extra caution should be used when on/off loading patients of excessive weight or with excessive equipment requiring more than a four-person carry.

3.1.7. Mission termination. AECMs, LMs, Aeromedical Evacuation Operations Officers Aeromedical Evacuation Operations Officer, AE ground support and/or flight line personnel de-configure the LSAS as required for storage/shipping. AECMs will tag damaged components, which must be placed back in the LSAS storage box with AFTO Form 350, *Repairable Item Processing Tag*, and also document the deficiency on the AFTO Form 244, *Industrial/Support Equipment Record*. **(T-3).** If LSAS terminates at a location other than its origin, the AECMs, Aeromedical Evacuation Operations Officer or AE ground support will ensure the LSAS DD Form 1149, *Requisition and Invoice/Shipping Document* is processed through the local Traffic Management Office **(T-3). Note:** AECMs will ensure that aircraft equipment affixed with unit identification remains with the aircraft. **(T-3).**

3.1.7.1. MCD call the missions theater AE cell at their airlift control agency to report on the mission. For PACAF/USAFE missions, Warfighting Headquarters or AECT will phone patch-in 618th AOC for mission termination report. **(T-2).** This report should include information regarding disposition of the LSAS. Specifically, the MCD reports the on-load/off-load International Civil Aviation Organization (ICAO) code of the LSAS, equipment identification number, Transportation Control Number and describe damaged equipment, which was tagged using AFTO Form 350, *Repairable Item Processing Tag* or equivalent form.

3.1.8. Weights. Refer to **Table 3.1** for LSAS weights information.

Table 3.1. LSAS Weights System.

Item	Weight (pounds)	Dimensions (height, width, depth)

LSAS	3,500 (when full)	108” X 88” X 90”

3.2. MA-1 Portable Walk-Around Bottle. AECMs are responsible for refilling the MA-1 portable walk-around bottle. Ensure the walk-around bottle is not empty prior to storage.**Note:** MA-1 portable walk-around bottle depleted to a pressure of less than five psi are to be purged prior to use.

3.3. Patient Support Pallet (PSP).

3.3.1. Description. The PSP increases the number of aircraft capable of performing patient movement during steady-state operations, times of war and military operations other than war. The PSP is approved for use on C-17, KC-10, KC-135 and KC-46 tanker/cargo aircraft only. The PSP is manufactured to defined standards and tolerances that allow interchangeability of parts. The PSP has a protective finish on parts that are not inherently corrosion resistant and includes fastening devices that stay in position during service use. The PSP pallet base occupies the footprint of a 463L aircraft pallet. Standard airline seat track rails embedded in the surface of the pallet base provide mounting for the airline type seats and litter stanchions. Eight seat track rails are mounted in the 108-inch direction of the pallet base. The seat track rails are spaced at 12.60-inch and 20.75-inch intervals.

3.3.1.1. The pallet surface is covered with a non-skid material and supports up to six airline-type seats that are removable, forward or aft facing, and are Technical Standard Order C-39b certified. Each seat has a reclining backrest, a padded armrest, an in-arm bi-fold tray table, a lap safety belt, a break-over backrest, and removable cloth upholstery. Each pallet has one large red cross on the pallet to ease identification of the pallet from other 463L pallets.

3.3.2. Requirements. The PSP is designed to support steady-state theater operational requirements as well as patient movement on opportune airlift without integral litter capability. These requirements include contingencies, humanitarian relief operation, Homeland Defense, war, peacetime, routine and urgent missions. Requirements are driven by the following factors: patients, aircraft, and location factors (Air Mobility Support Squadrons and location of tanker/cargo aircraft).

3.3.3. AE Mission Execution. The Aerial Port Control Center or the Air Mobility Control Center notifies aerial ports of outbound/inbound mission and support requirements. PSPs are transported and loaded onto aircraft in accordance with mission requirements/load plan. At en route locations, reconfiguration and/or removal of PSP components, resulting in a change in either litter or ambulatory carrying capacity is not authorized, without prior coordination with the 618th AOC.

3.3.4. Responsibilities.

3.3.4.1. Aircrew. Review Global Decision Support System (GDSS) and Special Instructions (SPINs) for mission changes/reconfigurations.

3.3.4.2. AE Personnel.

3.3.4.2.1. AECMs inspect each PSP before and after mission use.

3.3.4.2.2. Coordinate with LM/BO for loading and securing the PSP onboard the aircraft.

3.3.4.2.3. All crewmembers establish egress routes and ensure access to emergency exits/equipment is not obstructed by the PSP.

3.3.4.2.4. The LM/BO and AECM shall ensure that there is a reasonable degree of access to the aft of the aircraft, and that passengers and patients have ready access to emergency exits. **(T-2)** Load aircraft in such a manner that allows for movement from the flight deck to the tail of the aircraft for firefighting.

3.3.4.2.5. Configure seats/litters on the PSP as required to meet mission requirements. **WARNING:** Stanchion and seat assembly requires a two-person lift to prevent injury.

3.3.4.2.6. Damaged PSPs requiring major repair are reported to the PSP custodian (identified at base of origin) and documented using AFTO IMT 244, Industrial/Support Equipment Record.

3.3.4.2.7. Resolve immediate malfunctions/concerns using crew Operational Risk Management principles.

3.3.4.2.8. An AECM or designee process DD Form 1149 and/or AFTO IMT 244. The PSP custodian should complete this form at home station, after contacting Air Mobility Command (AMC)/A38R for fund cite information. AECMs will travel with and be given to the DD Form 1149 PSP and give the form to the custodian upon return to home station. **(T-3).**

3.3.4.3. Aerial Port.

3.3.4.3.1. Deliver and retrieve PSPs to and from the aircraft providing material handling equipment, driver, and spotter. The PSP was designed to interface with the 463L pallet system. Load the PSP using same methodology as the 463L pallet.

3.3.4.3.2. When it is anticipated that the PSP will leave and return to home station for a single mission, PSP custodian (or designee) with assistance from aerial port personnel, will remove/replace the rigid PSP storage cover as prescribed by local facility policy for aircraft configuration. AECMs are responsible for breaking down the PSP into storage mode. Aerial Port Squadron (APS) personnel will provide any necessary guidance to assist AECMs on transportation/storage mode configuration. **(T-3).**

3.3.4.3.3. When PSPs require movement via opportune airlift, shipment will be manifested and moved as TP1/999 priority cargo. **(T-3).**

3.3.4.4. 618 AOC/AE Cell.

3.3.4.4.1. Identifies and documents configuration requirements in the GDSS and SPINs for mission changes/reconfigurations.

3.3.4.4.2. Serve as conduit for information between AECMs, aerial port functions, and other operational agencies when applicable.

3.3.4.4.3. When the PSP is tasked for a mission at other than home station, aerial port functions, and other operational agencies will move the PSP in the cargo configuration (all components configured on the pallet in the cargo configuration with the protective cover in place) unless previously coordinated with 618 AOC/AE Cell. **(T-3).**

3.4. USAFE and PACAF Interface.

3.4.1. PSPs in USAFE and PACAF are managed by the AMC/Air Mobility Operations Group (AMOG) at en route locations as determined by AMC/Aeromedical Evacuation Operation Branch (A3OE).

3.4.2. Theater AOC requests the use of the PSP through the AMC/AMOG. AMC/AMOG is the granting authority when the PSP is required for use on non-AMC aircraft.

3.4.3. Command Relationships/Architecture. AMC retains ownership of the PSPs to allow for centralized oversight/budgeting and availability for intertheater mission execution.

3.5. Configurations.

3.5.1. The PSPs have been fielded in block increments. The Block 1 initial design supports three litter patients per litter tier. An extension added to the litter tower of the Block 2 design supports four litter patients per tier on the C-17. See **Table 3.2** and **Table 3.3** for weights.

Table 3.2. PSP Configuration/Parts Weights.

PSP PARTS	WEIGHTS
Extension	17 lbs.
Ramp	12 lbs.
Spacer	9 lbs.

Table 3.3. PSP Part Weights.

PSP CONFIGURATION	6 LITTER WEIGHT	8 LITTER WEIGHT
PSP-L	826 lbs.	912 lbs.
PSP-W	826 lbs.	912 lbs.
PSP-M	820 lbs.	863 lbs.

3.5.2. The PSP can be configured in three different configurations. **(Refer to Figure 3.1 through Figure 3.3** for depiction of Block 1 initial design configurations**)**.

3.5.3. Configuration options follow:

3.5.3.1. PSP-W: Two litter tiers along the outer aspect of the pallet supporting six to eight litter patients. To facilitate egress, PSP-W used if maximum number of twelve (12) PSP(s) are required.

3.5.3.2. PSP-L: Two litter tiers down the center of the PSP with litter arms facing out supporting six to eight litter patients.

3.5.3.3. PSP-M: Three PSP seats and one litter tier along the outer aspect of the pallet supporting up to three to four litter patients and three ambulatory patients. During an in-flight medical emergency, seats can be removed and placed off to the side to increase working space. **Note**: Each seat weighs 65 LBS. Combinations of one to three seats may be carried on the PSP-M.

3.5.4. When three patients are transported per litter tower, each litter position is rated to hold 320 LBS. When four patients are transported per litter tower the bottom and second litter positions are rated to hold 320 LBS, third litter position is rated to hold 220 LBS and the top litter position is rated to hold 160 LBS. **WARNING**: Failure to adhere to above litter weight ratings could result in injury. Do not place the PSP-L configuration directly in front of or behind a center aisle PSP configuration (PSP-M PSP-W). The abrupt change from a side to a center aisle between two pallets (fore and aft) creates a restriction that prevents enplaning, deplaning, or egress of a litter patient in that direction. The AECM shall ensure that PSPs adjacent to an emergency exit do not impede or prevent egress. **(T-3).**

Figure 3.1. PSP-L.

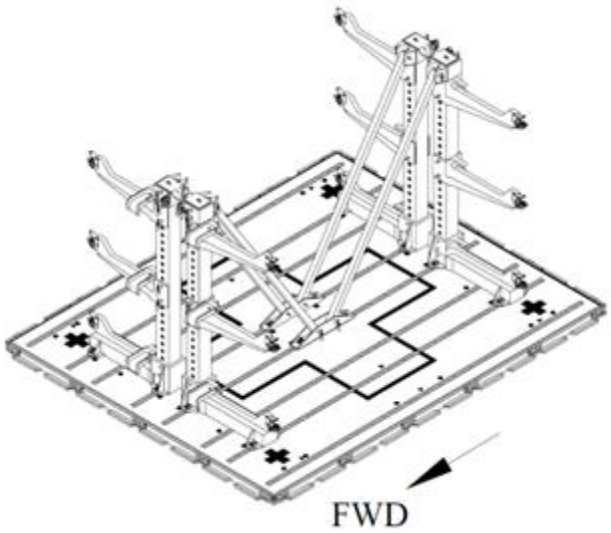


Figure 3.2. PSP-W.

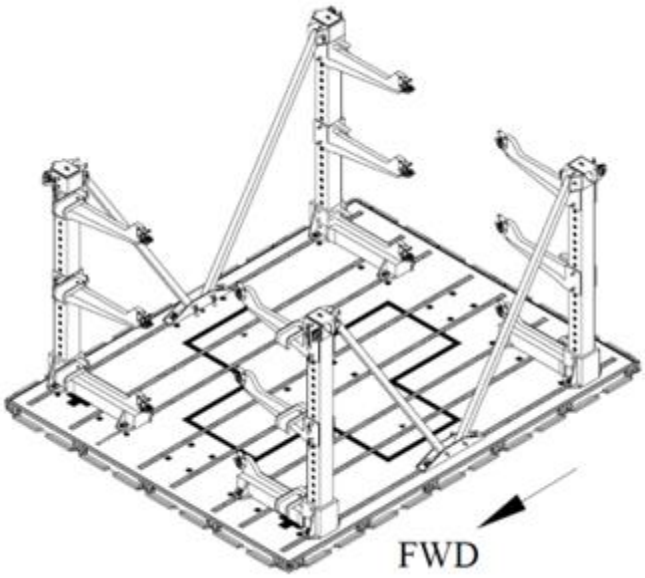
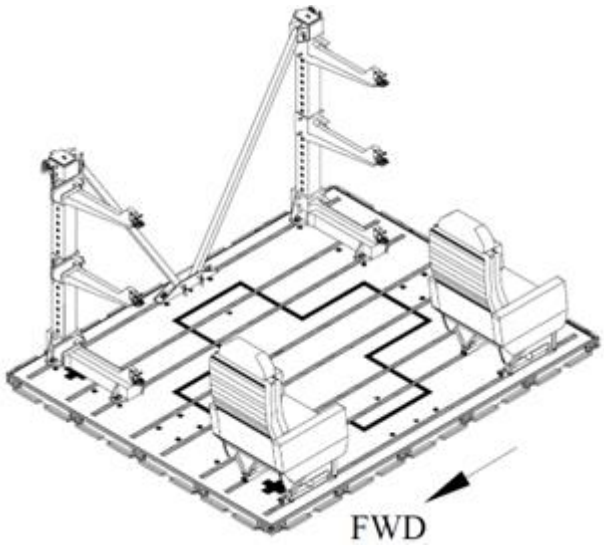


Figure 3.3. PSP-M.



3.6. Stanchion Assembly.

3.6.1. Geometric shapes and colors located on the pallet denote component placement.

3.6.1.1. Red placement for —M or —W configurations

3.6.1.2. Yellow placement for —M

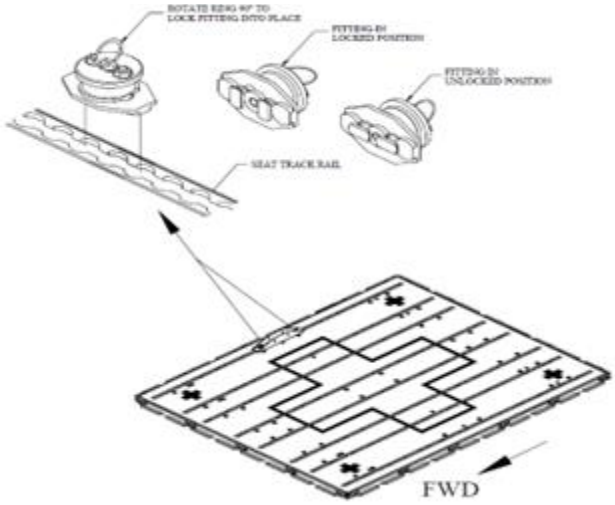
3.6.1.3. Orange placement for —L configuration

3.6.2. AECMs will wear gloves during assembly and disassembly of the PSP. **(T-3).**

3.6.3. Place baseplate on pallet over the 1st seat track rail. Align both seat track fittings on baseplate with the RED circles on pallet.

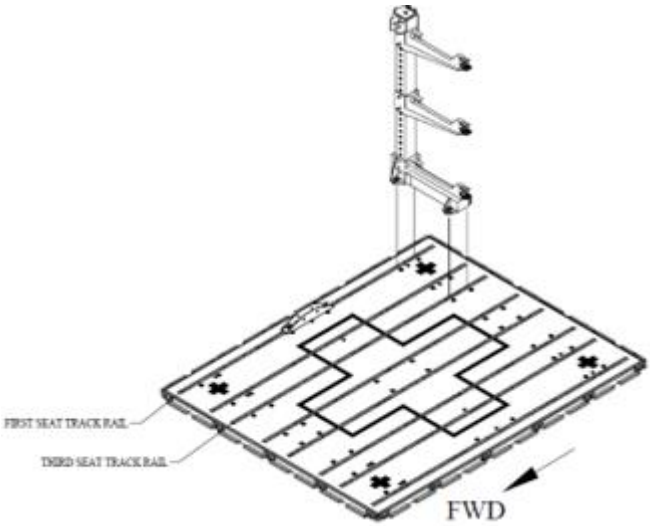
3.6.4. Position both fittings on baseplate to the unlocked position. Lower baseplate onto the first seat track rail. Rotate ring on both fittings 90 degrees so that each fitting locks into the first seat track rail. **(Figure 3.4).**

Figure 3.4. Seat Track Fitting.



3.6.5. Place AFT stanchion assembly on pallet over the first and third seat track rails (stanchion arms face center of pallet). Align the four seat track fittings on AFT stanchion assembly with the RED circles on pallet. **(Figure 3.5).**

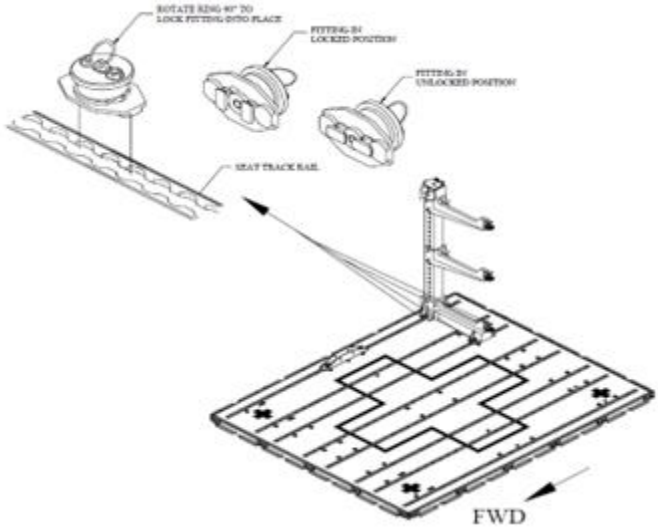
Figure 3.5. AFT Stanchion Assembly.



3.6.6. Position the four seat track fittings on AFT stanchion assembly to the unlock position. Lower AFT stanchion assembly onto the first and third seat track rails. **(Figure 3.6).**

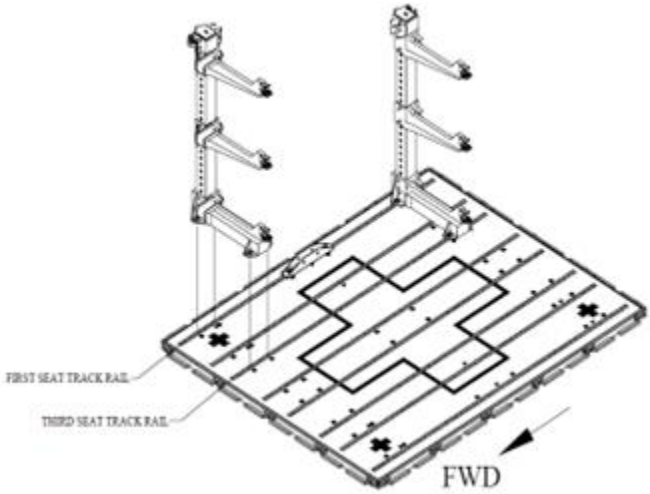
3.6.7. Rotate ring on each of the four seat track fittings 90 degrees so that each seat track fitting locks into the seat track rails.

Figure 3.6. AFT Stanchion Assembly.



3.6.8. Place FWD stanchion assembly on pallet over the first and third seat track rails (stanchion arms face center of pallet). Align the four seat track fittings on FWD stanchion assembly with the RED circles on pallet. **(Figure 3.7.).**

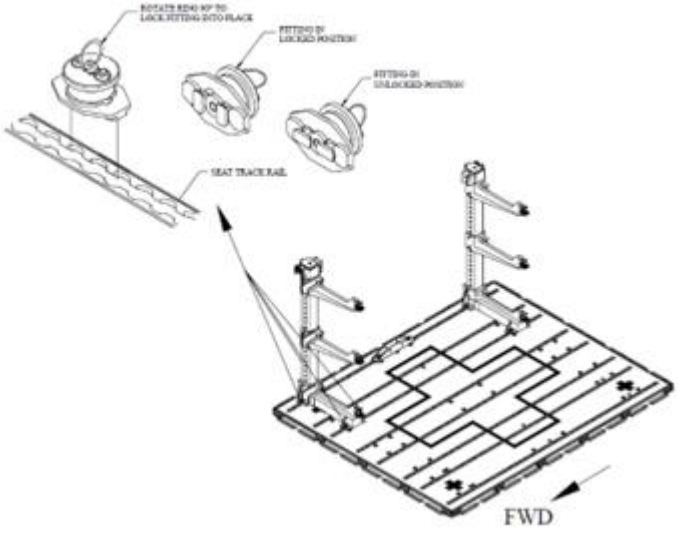
Figure 3.7. Forward Stanchion Assembly.



3.6.9. Position the four seat track fittings on FWD stanchion assembly to the unlocked position. Lower FWD stanchion assembly onto the first and third seat track rails. **(Figure 3.8)**

3.6.10. Rotate ring on each of the four seat track fittings 90 degrees so that each seat track fitting locks into the seat track rails.

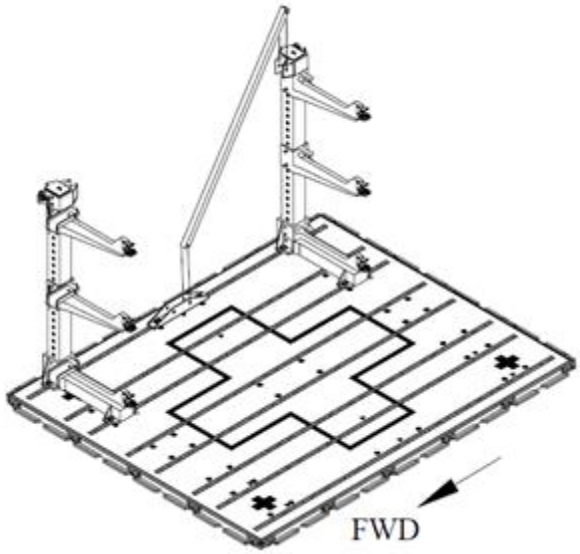
Figure 3.8. Forward Stanchion Assembly.



3.6.11. On the AFT stanchion assembly, install tension bar into tension bar collar so that the holes in tension bar align with holes in channel of tension bar collar. **(Figure 3.9).**

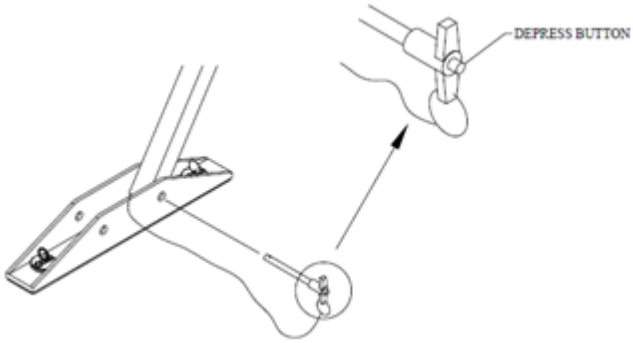
3.6.12. Install the other end of tension bar into baseplate so that the holes in tension bar align with holes in base plate.

Figure 3.9. Tension Bar Assembly.



3.6.13. Secure tension bar to baseplate by depressing button on the ball lock pin and inserting ball lock pin into hole of baseplate. **(Figure 3.10). Note:** When stanchion set assembly is attached to the pallet, ensure that the ball lock pins on the base-plate are inserted on the same side as the stanchion arms.

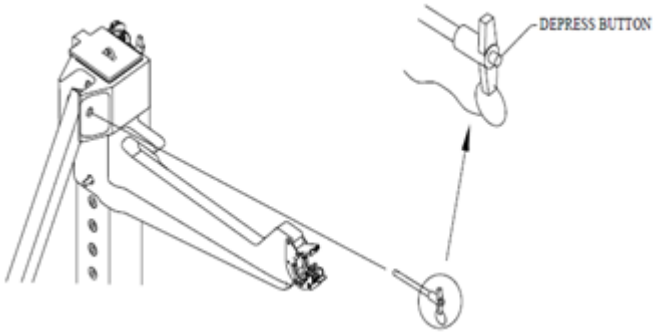
Figure 3.10. Tension Bar Assembly.



3.6.14. Secure tension bar to collar by depressing button on the ball lock pin and inserting ball lock pin into hole of tension bar collar. **(Figure 3.11).**

3.6.15. Ensure that ball lock pin passes completely through tension bar collar and tension bar.

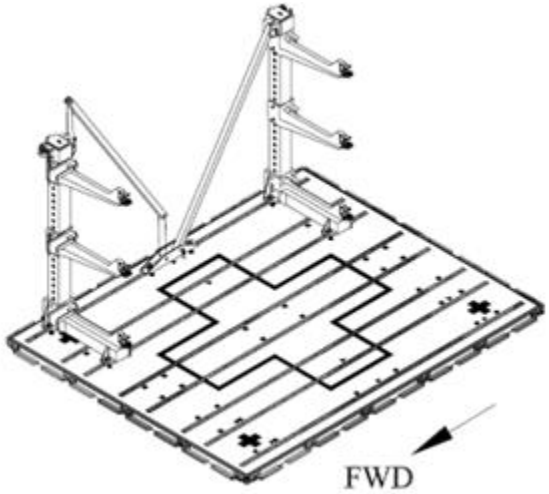
Figure 3.11. Tension Bar Assembly.



3.6.16. On forward stanchion assembly, install tension bar into tension bar collar so that the holes in tension bar align with the holes in channel of tension bar collar. **(Figure 3.12).**

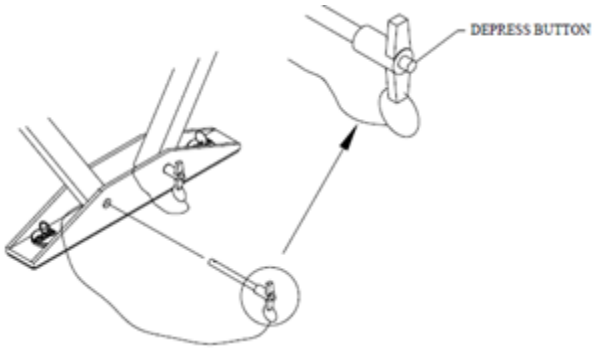
3.6.17. Install the other end of tension bar into baseplate so that the holes in tension bar align with the holes in baseplate.

Figure 3.12. Tension Bar Assembly.



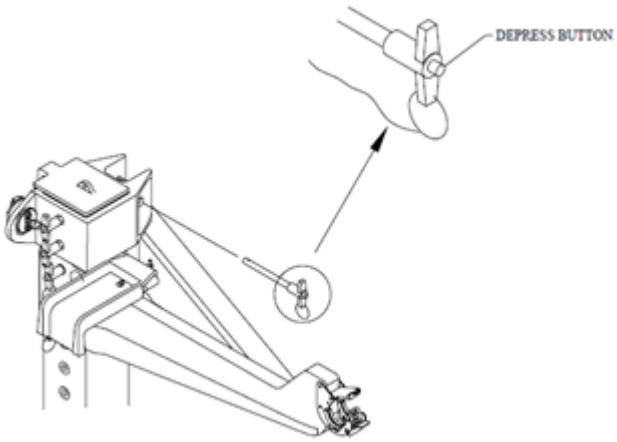
3.6.18. Secure tension bar to baseplate by pressing button on the lock pin & inserting ball lock pin into hole of baseplate. Ensure pin passes completely through baseplate & tension bar. **(Figure 3.13). Note:** When stanchion set assembly is attached to the pallet, ensure that the ball lock pins on the baseplate are inserted on the same side as the stanchion arms.

Figure 3.13. Tension Bar Assembly.



3.6.19. Secure tension bar to tension bar collar by depressing button on the ball lock pin and inserting ball lock pin into hole of tension bar collar. Ensure that ball lock pin passes completely through tension bar collar and tension bar. **(Figure 3.14).**

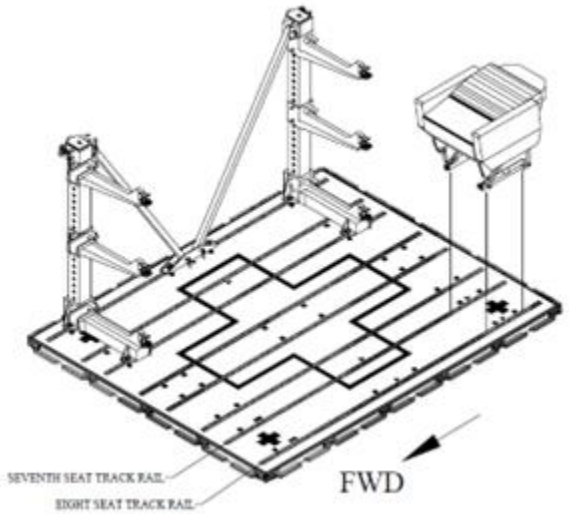
Figure 3.14. Tension Bar Assembly.



3.7. Seat Assembly.

3.7.1. Place seat on pallet over the 7th and 8th seat track rails. Align seat track fitting knobs on seat with painted YELLOW triangles on pallet. **(Figure 3.15).**

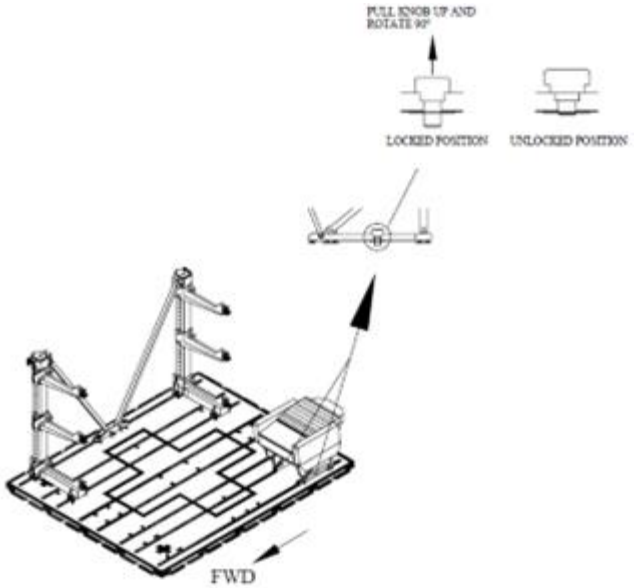
Figure 3.15. Seat Assembly.



3.7.2. Position seat track fitting knobs on seat to the unlocked position by pulling up on both seat track fitting knobs and rotating 90 degrees. **(Figure 3.16).**

3.7.3. Lower seat onto the 7th and 8th seat track rails. Rotate both seat track fitting knobs 90 degrees and move seat FWD and AFT gently until each track fitting locks in seat track rail.

Figure 3.16. Seat Assembly.



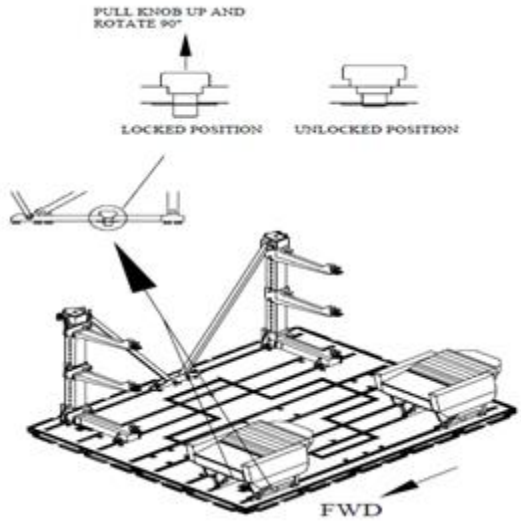
3.7.4. Place seat on pallet over the 7th and 8th seat track rails. **(Figure 3.17)**

3.7.5. Align seat track fitting knobs on seat with painted YELLOW triangles on pallet.

Figure 3.17. Seat Assembly.

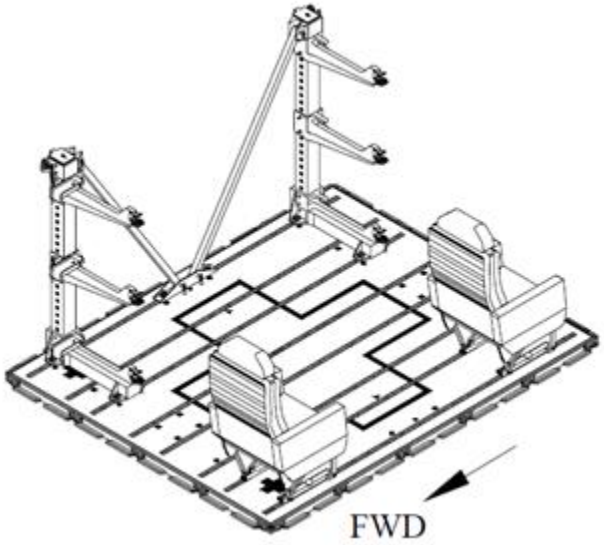
3.7.6. Position seat track fitting knobs on seat to the unlocked position by pulling up on both seat track fitting knobs and rotating 90 degrees. Lower seat onto the seventh and eighth seat track rails. Rotate both seat track fitting knobs 90 degrees and move seat forward and aft gently until each seat track fitting locks in seat track rail. **(Figure 3.18).**

Figure 3.18. Seat Assembly.



3.7.7. A 3rd seat may be placed in the PSP-M configuration between the two seats shown. **(Figure 3.19). Note:** Ensure when seats are broke over they do not extend beyond the pallets edge. This will cause problems during off load.

Figure 3.19. Seat Assembly.

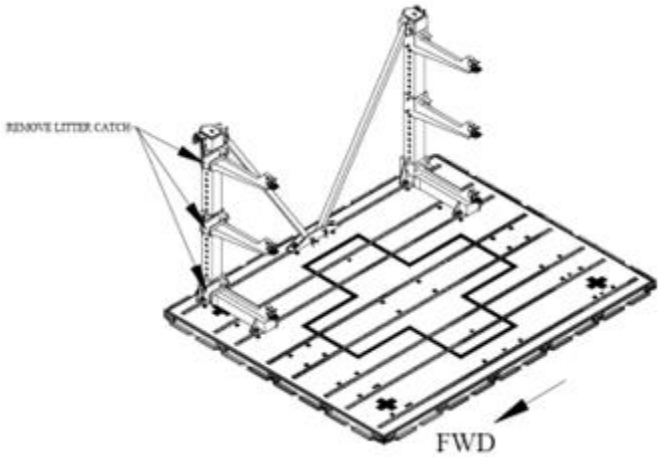


3.8. Litter Installation.

3.8.1. Remove litter catch from the stanchion arm on the FWD stanchion assembly by depressing the button on the ball lock pin & removing ball lock pin from the litter catch.

3.8.2. Set litter catch aside. **(Figure 3.20).**

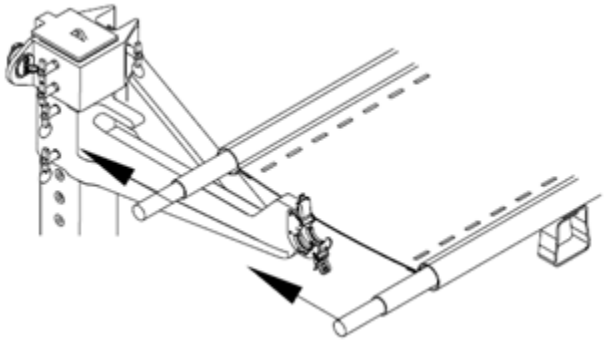
Figure 3.20. Litter Installation.



3.8.3. Slide one end of litter handle under tongue of stanchion arm.

3.8.4. Slide handle on other end of litter under tongue of stanchion arm. **(Figure 3.21).**

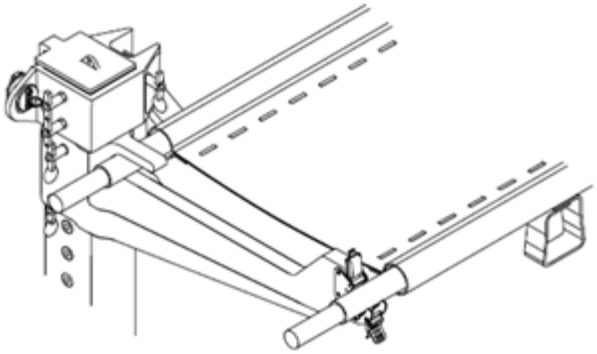
Figure 3.21. Litter Installation.



3.8.5. Place litter handles in litter bracket.

3.8.6. Place handle on other end of litter in litter bracket. **(Figure 3.22).**

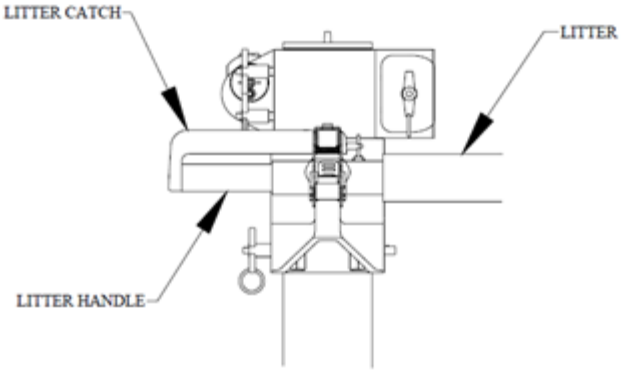
Figure 3.22. Litter Installation.



3.8.7. Reinstall litter catch on tongue of stanchion arm (FWD stanchion assembly).

3.8.8. Ensure the litter handle on each litter fits against litter catch. **(Figure 3.23).** **WARNING:** Ensure litter handles on Army Decon Litter are in the extended position. Retracted litter handles will not allow for a snug fit on the litter catch and can result in injury.

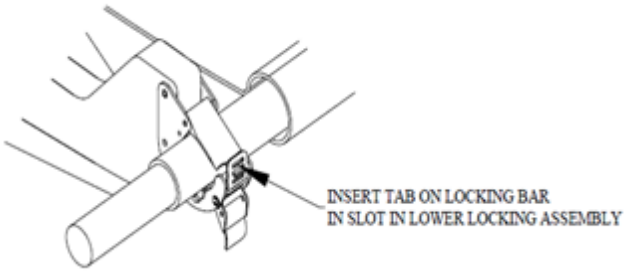
Figure 3.23. Litter Installation.



3.8.9. Insert tab of locking bar in slot of lower locking assembly on both the FWD and AFT litter brackets that contain the litter. **(Figure 3.24).**

3.8.10. Ensure a snug fit on litter handle.

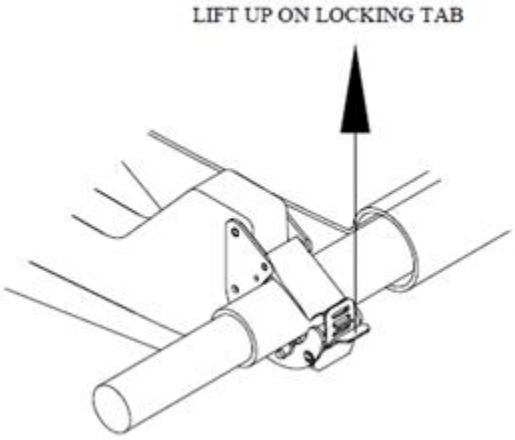
Figure 3.24. Litter Installation.



3.8.11. Lift up locking tab to lock litter bracket in place on litter handle. Lock litter bracket on both the FWD and AFT litter brackets. **(Figure 3.25).**

3.8.12. Ensure snug fit on litter handle.

Figure 3.25. Litter Installation.



3.9. Enplaning and Deplaning. WARNING: AECMS or designated litter barriers will not enplaned or deplaned patients and equipment on the PSP. **(T-3).**

3.9.1. Enplane all litter patients first. Ensure seat backs are folded down during litter enplaning/ deplaning.

3.9.2. Seats may be completely removed to facilitate litter/equipment loading.

3.9.3. Accomplish enplaning/deplaning of ambulatory/litter patients in the most expeditious, safe manner. Full consideration must be given to the availability of material handling equipment and ground support personnel.

3.9.4. The KC-135/KC-10/C-17/KC-46 requires a roller system to roll the PSP on and off the aircraft. These roller systems reduce free walking space on the aircraft and present tripping hazards in many areas. **WARNING:** Every effort shall be made not to enplane/deplane patients across rollers. **(T-3).**

3.9.5. PSP ramps, extensions, and spacers should be used when available to mitigate trip hazards created by uneven surfaces between the PSP(s) and/or the C-17 integral stanchions. Spacers are designed to cover the gap between two pallets. The PSP ramps and extensions attach either to the pallet or to each other to provide a smooth transition from the pallet to the aircraft floor. **Exception:** On the KC-10, location of aircraft seats may prevent use of PSP ramps immediately forward of the PSP to cover exposed rollers. In addition, PSP spacer does not fit between pallets in Configuration I. Ensure two of the five fasteners are in place and secured for proper ramp installation.

3.9.6. Once secured in the roller system, secure PSPs with a cargo tie down strap to the roller system rails to prevent forward-aft pallet movement during flight. **CAUTION:** Do not use seat track/stanchion fitting ring(s) to secure any equipment.

3.9.7. The stanchion arms are designed for non-sequential enplaning/deplaning of individual litter patients.

3.10. Patient Care Procedures.

3.10.1. The AECM should be cognizant of trip hazards (space between pallets, drop off on sides of pallet, and cargo rollers). AECMs shall provide safety briefings to patients, passengers, attendants and litter bearers as needed. **Note:** If patient requirements dictate and additional workspace is needed, the PSP may be configured with only one litter tower. In addition, the second tower may be installed after the patient with increased care requirements is enplaned. **WARNING:** The AECM should instruct seated patients/attendants on the operation of the integral food tray. Improper handling of this tray may result in injury. **WARNING:** Never place a litter on the bottom litter tier without securing a litter above it. **WARNING:** The AECM should be mindful of the potential strike hazard unoccupied cantilever arms present. To eliminate the hazard: Remove cantilever arms and store in a secure location on the aircraft or place an empty litter in the next position. If a secure location is unavailable, cover empty cantilever arms with blankets and secure with litter straps.

3.11. Maintenance.

3.11.1. AECMs shall keep pallets clean to protect equipment, prevent the spread of contamination, and increase the serviceability of the unit. **(T-3).**

3.11.2. AECMs pallet cleaning shall be performed when necessary and cleaning shall be compatible with the type of material to be cleaned and the nature of the substance to be removed. **(T-3).** In most cases, this should be mild soap and water.

3.11.3. Keep seat track clear of any debris that will obstruct the lock engagement.

3.12. Disassembly and Storage. WARNING: When disassembling litter stanchions, one person will support the weight of the stanchion as the second person unlocks and disengages the stanchion from the seat track in the pallet floor. **(T-3).** Failure to support the weight of the stanchion could result in injury.

3.12.1. The stanchion assembly is stored in the horizontal position and secured to the pallet to reduce the PSP system cubic volume during transport and storage.

3.13. PSP Configuration.

3.13.1. Ground Configuration.

3.13.1.1. The PSP is transported to the aircraft by aerial port personnel, positioned and secured on the aircraft by the BO, and configured by AE personnel.

3.13.1.2. Exercise caution when maneuvering the pallet in and around the aircraft.

3.13.1.3. The BO should open the aircraft three hours prior to take off to facilitate AECM aircraft configurations. The BO coordinates with the MCD if the aircraft will not be opened three hours prior to takeoff.

3.13.1.4. In cases when the aircraft is configured at an en route stop, the MCD will coordinate with the PIC and BO, to determine when the aircraft should be configured for the next mission. **(T-3).** When possible, the aircraft should be configured the day prior to the mission, before entering crew rest.

3.13.1.5. The MCD is ultimately responsible to ensure coordination between appropriate agencies has occurred or are in place to deliver PSP(s) to the aircraft. **Note:** Each PSP comes with only two seats. If three or six seat configuration is desired, procure one to four additional seats from another PSP set. Each seat has storage capacity for required prepositioned aircrew flight equipment (EPOS and life preserver).

3.13.2. Flight Configuration.

3.13.2.1. PSP-W: Two litter tiers along the outer aspect of the pallet supporting up to three patients per tier.

3.13.2.2. PSP-M: Three PSP seats and one litter tier along the outer aspect of the pallet supporting up to three litter and three ambulatory patients. During an in-flight medical emergency, seats can be removed and placed off to the side to increase working space. **Note:** Each seat weighs 65 LBS. Combinations of one to three seats may be carried on the PSP-M.

3.13.2.3. Each litter position is rated to hold 320 lbs. Each seat is rated to hold 260 lbs.

3.13.2.4. During preflight, the CMT will estimate equipment/IFK weights in accordance with the abbreviated checklist and provide weights per pallet/floor load station to the BO. **(T-3). Note:** When possible, configure the PSP seats to face aft.

3.13.3. AE-1. One PSP positioned in the number one pallet position, station 504 centroid. All possible Omni rollers should be removed for minimal roller exposure. Utilize PSP-M with litters on the (R) side of the aircraft in pallet position one only. Maximum litter spaces available are three. Airline type seating if required may accommodate 16 ambulatory patients. The (L) aircraft side aisle-way should be kept clear of all obstacles at all times, allowing access to the latrine.

3.13.4. AE-2. Two PSPs in pallet position one & two, stations 504, and 624 centroid respectively. May utilize PSP-M or PSP-W in pallet position two. Maximum litter spaces available are nine. Airline type seating if required may accommodate 16 ambulatory patients. The (L) aircraft side aisle-way should be kept clear of all obstacles at all times, allowing access to the lavatory.

3.13.5. AE-3. Three PSPs placed in pallet position one, two, and three, stations 504, 624, and 774 centroid respectively. May utilize PSP-M or PSP-W in pallet position three. Maximum litter spaces available are 15. Airline seating, if required, accommodates eight ambulatory

patients. Hardware (four extensions and two ramps) should be placed to cover the exposed rollers at the (R) over wing hatch. Attach two extensions to each pallet and cover remaining gap with ramps. **Note:** If pallet two and three are not correctly placed, additional hardware will not fit correctly. The forward edge of pallet three must be positioned at station 720. If sufficient hardware is not available, consult the BO for an alternate means to cover the rollers i.e. utilize plywood secured over the rollers.

3.13.6. Ambulatory. Aft Facing PSP seats are approved seats for use. **WARNING:** AECMs will ensure airline seats are floor mounted to avoid tripping hazards associated with uneven floors with pallets. **(T-3).**

3.13.7. The BO ensures the roller system is properly configured prior to unlocking the pallets during unloading operations.

3.14. PSP Inventory.

3.14.1. 463L Pallet intact and functional

3.14.2. Brackets available and operable

3.14.3. Ramps available and operable

3.14.4. Spacers available and operable

3.14.5. Extenders available and operable

3.14.6. Litter stanchions available and functional

3.14.7. Seats available, clean, and operable

3.15. PSP Spare Parts Repair Kit.

3.15.1. 4 Wire Bolts (P/N 9489T45)

3.15.2. 4 Machine Bolts (P/N AN3-15A)

3.15.3. 2 Bracket Assemblies (litter clamps) (P/N FDC-3835-31)

3.15.4. 4 Nuts (P/N MS21042L3)

3.15.5. 8 Washers (P/N NAS1149D0332J)

3.15.6. 2 Pin Assemblies 7/16 X 5 inch (P/N A7803144500-001)

3.15.7. 2 Pin Assemblies 7/16 X 3 inch (P/N A7803144500-002)

3.15.8. 2 Pin Assemblies 3/16 X 2 inch (P/N A7803144500-003)

3.15.9. 1 Fitting-Quick Disconnect (P/N A7100)

3.15.10. 1 Container to contain the above

3.16. PSP Inspection.

3.16.1. Annotate any missing/broken parts on AFTO IMT 244

3.16.2. Replace/repair broken parts with spare parts kits if able

3.16.3. Ensure ramp and spacers are in place; release lever is equipped with spring

3.16.4. Ensure installed ramps have 2 of 5 operable fasteners. **Note:** To prevent slight forward movement; secure the PSP w/5000 lb. cargo tie down strap.

3.16.5. Ensure tension bars are secured to base plate and locked

3.16.6. Ensure litter stanchion poles and base plate are locked and secured to the PSP

3.16.7. All ball lock pins are inserted on the same side of stanchion arms

3.16.8. Ensure litter catches are installed on forward end of each occupied litter

3.16.9. Aligned seats with proper markings and locked in upright position.

3.16.10. Check seat belts, reclining action and tray table for operation

3.16.11. Ensure each seat has an EPOS and LPU. Annotate inspection date and any discrepancies on the AFTO IMT 244.

Chapter 4

C-130 H/J CONFIGURATIONS

4.1. Aircraft Systems.

4.1.1. Oxygen.

4.1.1.1. Therapeutic oxygen. Not available on the C-130 H/J. Utilize the Portable Therapeutic Liquid Oxygen System (PTLOX)/NextGeneration Portable Therapeutic Liquid Oxygen System (NPTLOX) or compressed oxygen tanks as available.

4.1.1.2. Patient emergency oxygen. Utilize EPOS.

4.1.1.3. Crew oxygen. One 25L liquid oxygen converter in the right-hand side of the nose wheel well which is used to supply emergency oxygen to pressure demand regulators and recharger hoses.

4.1.2. Electrical.

4.1.2.1. Electrical power is provided through either the Galley or Missile Support System cannon plugs. Each of the five outlets provides a max of 20 amps for an aircraft total of 100 amps.

4.1.2.2. Medical equipment rated at 115 Volt/400 Hz can be operated from either the Galley or Missile Support System utilizing an approved C-130 pigtail adaptor located in the Electrical Cord Assembly Set.

4.1.2.3. Utilize the Avionics/Unitron® Frequency Converter through the Missile Support System for medical equipment rated at 115Volt/60 Hz.

4.1.2.4. The C-130 J aircraft has six 3-pin "household type" service outlets that can be used with AE equipment that operates on 115 Volt/400 Hz. Each outlet will provide 15 amps for a total of 90 amps.

4.2. C-130 H/J PATIENT PLANNING FACTORS.

4.2.1. The MCD/Charge Medical Technician is responsible for the AE configuration of the aircraft. The MCD/Charge Medical Technician may modify the AE configuration to meet the mission requirements. **(Table 4.1). ** For the most current and additional AE Mission Design Series configurations refer to AFMAN 11-2C-130H/J-V3 ADDENDA A, *Operations Configurations/Mission Planning*.

Table 4.1. AE Configuration of The Aircraft.

LITTER SPACES	AE-1	AE-2	.	AE-3	AE-4	AE-5
Total Spaces (Note 6)	30	72/92 (J-30)		20	50/60 (J-30)	10
AE Equipment (Note 1)	4	4		4	4	4

Emergency Litter	1	1		1	1	1
Critical Care Air Transport Team (CCATT) (Note 2)	5	5		5	5	5
Actual Spaces (Notes 2 and 5)	25	67/87 (J-30)		15	45/55 (J-30)	5
SEATS	AE-1	AE-2		AE-3	AE-4	AE-5
Total Seats	46/62 (J-30)	6/10 (J-30)		44/62 (J-30)	30/62 (J-30)	31/45(J-30)
AE Basic Crew (Note 3)	5	5		5	5	5
CCATT Crew (Note 3)	3	3		3	3	3
LM	2	2		2	2	2
Actual Seats (Note 4)	39/55	0		37/55 (J-30)	23/55(J-30)	24/38(J-30)

Notes:

1. AECMs will ensure additional equipment/bags are floor loaded unless space is available in litter tiers. **(T-3)**

2. Actual litter spaces may decrease based upon patient requirements and equipment. AECMs will carry an emergency litter on all AE missions. **(T-3)** CCATT vented patients require one litter tier (five litter spaces). Non-vented CCATT patients do not require a litter tier unless equipment prohibits loading of additional patients in the same litter tier.

3. AE and CCATT seats are based on primary crew compliment.

4. Actual seats may decrease based on crew compliment, mission requirements and patient load.

5. Aircraft configured with the LM Crashworthy Seat will lose two aft sidewall seats per side and the sidewall litter stanchions forward of the paratroop doors (the area requiring the use of the paratroop door litter tracks). AECMs will not occupy this seat while in flight. **(T-2).**

6. Due to the unsafe nature of take-off and landing, AECMs will not use the sideways aft litter stanchions located near flight station 1000. **(T-2).**

Chapter 5

C-17 PATIENT PLANNING FACTORS

5.1. Aircraft System.

5.1.1. Oxygen.

5.1.1.1. A minimum quantity of 75 liters of liquid oxygen is required for scheduled AE missions originating from staged/home station in accordance with **AFI/AMFAN 11-2AE Vol 3 table 4.1**.

5.1.1.2. At enroute stops, the MCD in conjunction with the PIC will ensure the total liquid oxygen quantity is sufficient to meet all anticipated patient needs. **(T-2). Exception:** For in System Select (ISS) aircraft or AE alert missions, the MCD in conjunction with the PIC will ensure the total liquid oxygen quantity is sufficient to complete the mission. **(T-2).** The MCD will notify Command and Control of liquid oxygen quantity limitation. **(T-2). WARNING:** Provisions must also be available for an emergency oxygen source if five ventilated patients are transported as each oxygen outlet supports one ventilator. **(T-2).**

5.1.1.2.1. Oxygen is supplied through two 50-psi regulators. The regulators are redundant and provide 100 liters/minute to any one of the therapeutic outlets or 60 liters/minute to all five outlets simultaneously. The five outlets are located on the right side of the cargo compartment sidewalls.

5.1.1.2.2. There are 54 HALO oxygen outlets located on the cargo compartment sidewalls that can be utilized with the adaptor assembly located in the in-flight kits. **WARNING:** ALL HALO outlets are designed to provide 13 LPM without a drop in pounds per square inch gauge. AECMs will not exceed 13 LPM at any of the HALO outlets. **(T-2).** The aircrafts HALO system regulators are sized to maintain 50 +/- 5 pounds per square inch gauge output. Do not exceed a combined 75 LPM from all flow control valves attached to HALO outlets.

5.1.1.3. Patient emergency oxygen. Ambulatory and litter patients utilize the passenger emergency oxygen system. **WARNING:** Floor-loaded patients or patients positioned on integral litter stanchions/Stanchion Litter System (SLS) will be provided an EPOS. Backrest position could obstruct the oxygen panels and mask containers of patients placed in litter tier positions.

5.1.1.4. Crew Oxygen. One 25L liquid oxygen bottle is used to supply emergency oxygen to lavatory emergency regulator/masks, pressure demand regulators, and all aircraft recharger hoses. Two 75L liquid oxygen bottles is used to supply oxygen to passengers, patients and HALO oxygen outlets in the cargo compartment.

5.1.2. Electrical.

5.1.2.1. A primary 115V/60 Hz converter is installed on-board the C-17 which provides 60 Hz electrical power to the six aeromedical electrical outlet panels. There are two 115 VAC/60 Hz outlets on each panel.

5.1.2.1.1. Do not exceed 30 amps total to the 60 Hz system (This includes all 60 Hz outlets on the six aeromedical electrical outlet panels).

5.1.2.1.2. To increase C-17 electrical amp capability, an Avionics Frequency converter/Unitron® may be plugged directly into one of the 115-200V/400 Hz AC outlets located on the six aeromedical electrical outlet panels. Do not exceed 20 amps per aircraft left side and 20 amps per aircraft right side to the 400 Hz system for a total of 40 amps when using the Avionics/Unitron® Frequency converter.

5.2. Patient Planning Factors.

5.2.1. The MCD/Charge Medical Technician is responsible for the AE configuration of the aircraft. The MCD/Charge Medical Technician may modify the AE configuration to meet the mission requirements. **(Table 5.1). (Figure 5.1).** For the most current and additional AE Mission Design Series configurations refer to AFMAN 11-2C-17-V3 ADDENDA A, *Configuration and Mission Planning*.

Table 5.1. AE Configuration of The Aircraft.

LITTER SPACES	AE-1	AE-2	AE-3	AEC-1
Total Spaces	9	36	9	6
AE Equipment (Note 1)	Floor Load	4	4	2
Emergency Litter	Floor Load	1	1	1
CCATT Equip (Note 1)	2	2	2	0
Actual Spaces (Note 2)	9	31	4	3
SEATS	AE-1	AE-2	AE-3	AE-4
Total Seats	54	54	90	49
AE Basic Crew (Note 3)	8	8	8	8
CCATT Crew (Note 3)	3	3	3	0
LM	2	2	2	2
Actual Seats (Note 4)	44	44	80	39

Notes:

1. Other than the spaces allotted, AE and CCATT equipment should be floor loaded. If patient load allows, AE and CCATT equipment may be loaded in litter stanchions.

2. Actual litter spaces may decrease based upon patient requirements and equipment. A CCATT vented patient requires one litter tier (three litter spaces). AECMs will carry an emergency litter on all AE missions. **(T-3).**

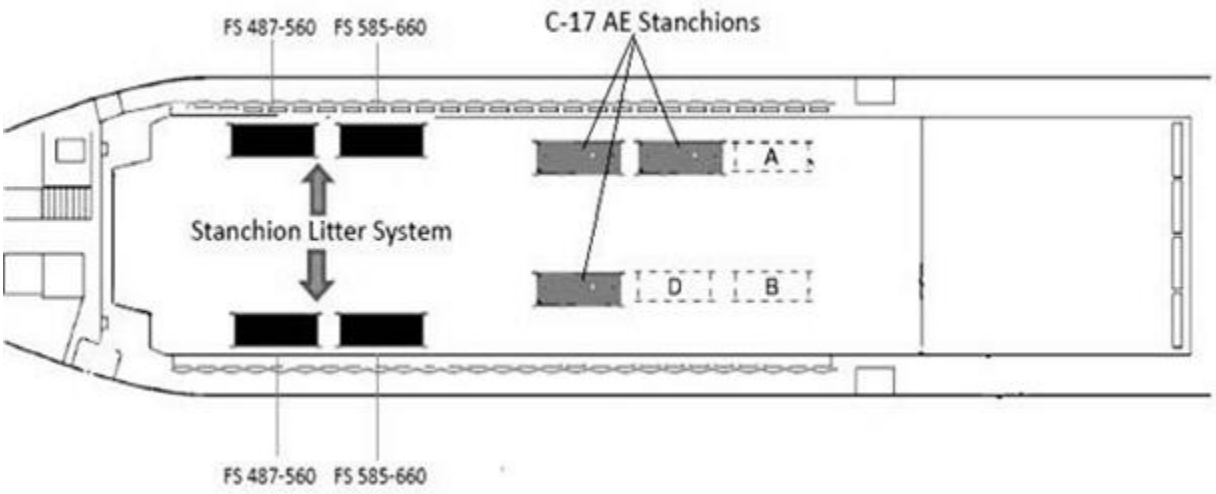
3. AE and CCATT seats are based on primary crew compliment. The MCD/

Charge Medical Technician and the 2nd Flight Nurse/2nd Aeromedical Evacuation Technicians should share one seat each for equipment stowage. The 3rd Aeromedical Evacuation Technicians should have one seat to store equipment. **(T-3)** In the event that space allows, each primary AECM will be provided one seat for equipment stowage. **(T-3).**

4. Actual seats may decrease based on crew compliment, mission requirements and patient load.

5.3. C-17 SLS Configuration.

Figure 5.1. SLS Configuration Placements.



Notes:

1. The SLS augmentation package can be used as a stand-alone configuration or augment the integral C-17 litter stanchion set. Each SLS will provide three litter positions for a total of three litter patients. SLS litter tier placement will be in pallet position 1L/1R and 2L/2R between FS 487 – 560 and FS 585 – 660 in rows A/B or F/G. One additional seat is reserved for primary AECMs for emergency equipment stowage. The MCD will determined the final litter configuration for AECM/CCATT. **(T-3).**

2. The Air Transportable Galley Lavatory (ATGL) cannot be used if an SLS is placed in FS 487- 560.

3. For cargo loading, inboard ramp toes are installed in low position with rollers and guide rails installed. For passenger/patient loading, outboard ramp toes are installed in the high position with rollers removed and stowed. Outboard ramp toes are stowed on the cargo door for taxi/flight.

4. The 60 Hz backup converter may be installed.

5. Additional aircraft equipment may be obtained from other aircraft. Annotate changes in the gaining and losing aircraft's AFTO Form 781-A, *Maintenance Discrepancy and Work Document*.

6. When AE patients are on board, cargo loaded on the ramp is restricted to two pallets in the Aerial Delivery System rail system, and floor loaded cargo is positioned so it does not restrict evacuation routes.

7. Time to configure the SLS is based off how many SLS units are required to meet the mission requirements. One SLS installation with two people is 10 minutes.

WARNING: AECM's will wear flight gloves during SLS assembly. **(T-3).** Hand Tools should never be used to install or remove an SLS or any of the included sub-components.

Note: When the Special Medical Emergency Evacuation Device (SMEED) is required for flight, placing the SMEED on the litter attached to the SLS mid-platform is recommended. For this, the SLS mid-platform position must be lowered using the height adjustment on inserts in order to provide enough space for placing aeromedical equipment on the SMEED.

CAUTION: The SLS has two Litter Stoppers installed on the forward side of its platforms that constrain the patient litter from moving in the forward acceleration (9G) direction. The stoppers are positioned on the forward side with respect to the aircraft. These two Litter Stoppers are to be removed and installed on the symmetrical location on the platform when the SLS is installed on the right side of the aircraft. The platform can also be rotated to ensure that the Litter Stoppers are always on the forward side.

CAUTION: Do not use hammers or miscellaneous tools to force stanchion pins into place.

Chapter 6

KC-135 CONFIGURATIONS

6.1. Mission Execution.

6.1.1. Limit total number of souls on board to 40. **Note**: At no time will souls on board exceed the number of available seat belts and aircrew flight equipment. **(T-2). Exception**: Total souls on board will be 37 for all SLS configurations.

6.1.2. Additional Mission Requirements include: **Note**: If unable to meet the following requirement, notify Tanker Airlift Control Center.

6.1.2.1. SLS based on configuration requirements.

6.1.2.2. Appropriate number aft facing stud mounted seats. (Installed at tanker home station). Coordination is required when MP-2 airline seats are located at the staging point. **Note**: Aircrew will ensure the aircraft departs home station with an operable latrine, a minimum of two urine tubes and two latrine cartridges as applicable. **(T-3). Note**: Aircraft equipped with the Improved Toilet Assembly are not required to depart home station with a minimum of two urine tubes and two latrine cartridges.

6.1.2.3. Ensure there are a minimum of 25 passenger information cards (KC-135 Passenger Emergency Procedures).

6.2. Aircraft Systems.

6.2.1. Oxygen.

6.2.1.1. Therapeutic oxygen. Not available on the KC-135. Utilize the PTLOX/NPTLOX, or compressed oxygen tanks as available.

6.2.1.2. Patient emergency oxygen. Utilize EPOS.

6.2.1.3. Crew Oxygen. Supplied via 12 gaseous oxygen bottles (six primary & six secondary) for demand regulators and recharger hoses.

6.2.2. Electrical. Electrical power for 400 Hz medical equipment is provided by an approved KC-135, 400 Hz pigtail adaptor (P/N8564034-135) located in the Electrical Cord Assembly Set. Electrical power for 60 Hz medical equipment is provided by the portable Avionics or Unitron® Frequency Converter using the Frequency Converter Adapter Electrical Pigtail (P/N 8564034-140).

6.2.2.1. The release of TCTO 1C-135-1806, *Installation of Aero-Medical Power Outlets on KC-135 R/T GATM Aircraft* provides three electrical outlets on the KC-135 R/T block 40 aircraft. Locations of the outlets are at station 445, 645, and 745. Each outlet provides a 115 VAC 3-phase 400 Hz 45 amp. The three outlets and the galley plug provide a total of 180 amps. For AE missions, utilization of the Avionics or Unitron® Frequency Converter and/or KC-135 Electrical Cord Assembly Set adapter(s) are authorized. Any or all of the outlets may be utilized on AE missions, however, do not exceed the 30-amp capability of the frequency converter. The Charge Medical Technician will calculate total equipment amperage prior to connecting equipment to the aircraft or Avionics/Unitron® Frequency Converter. **(T-3).**

6.2.2.2. Coordinate with BO for galley disconnect and pulling of circuit breakers before connecting the pigtail adaptor to the aircraft (**F**ig **6.1**). When connecting the pigtail adaptor to the galley plugs, ensure both circuit breakers marked "GALLEY PWR," "Station 445," "Station 645" and "Station 745" are pulled. The Charge Medical Technician will visually inspect that the galley plug has been disconnected. **(T-3)** Home station maintenance group will lock out/tag all incompatible power receptacles and document on AFTO IMT 781A. **(T-3).**

6.2.2.3. Use the following guidance when connecting/disconnecting the KC-135, 400 Hz pigtail adaptor (P/N 8564034-135) or KC-135 Avionics/Unitron® Frequency Converter, Adaptive Electrical Pigtail (P/N 8564034-140):

6.2.2.3.1. KC-135 R and T models have different labels for the circuit breakers to be pulled when connecting/disconnecting the AE pigtails. AECMs will request the BO to open/reset the appropriate circuit breakers when connecting/disconnecting the AE pigtail adaptor. **(T-3).**

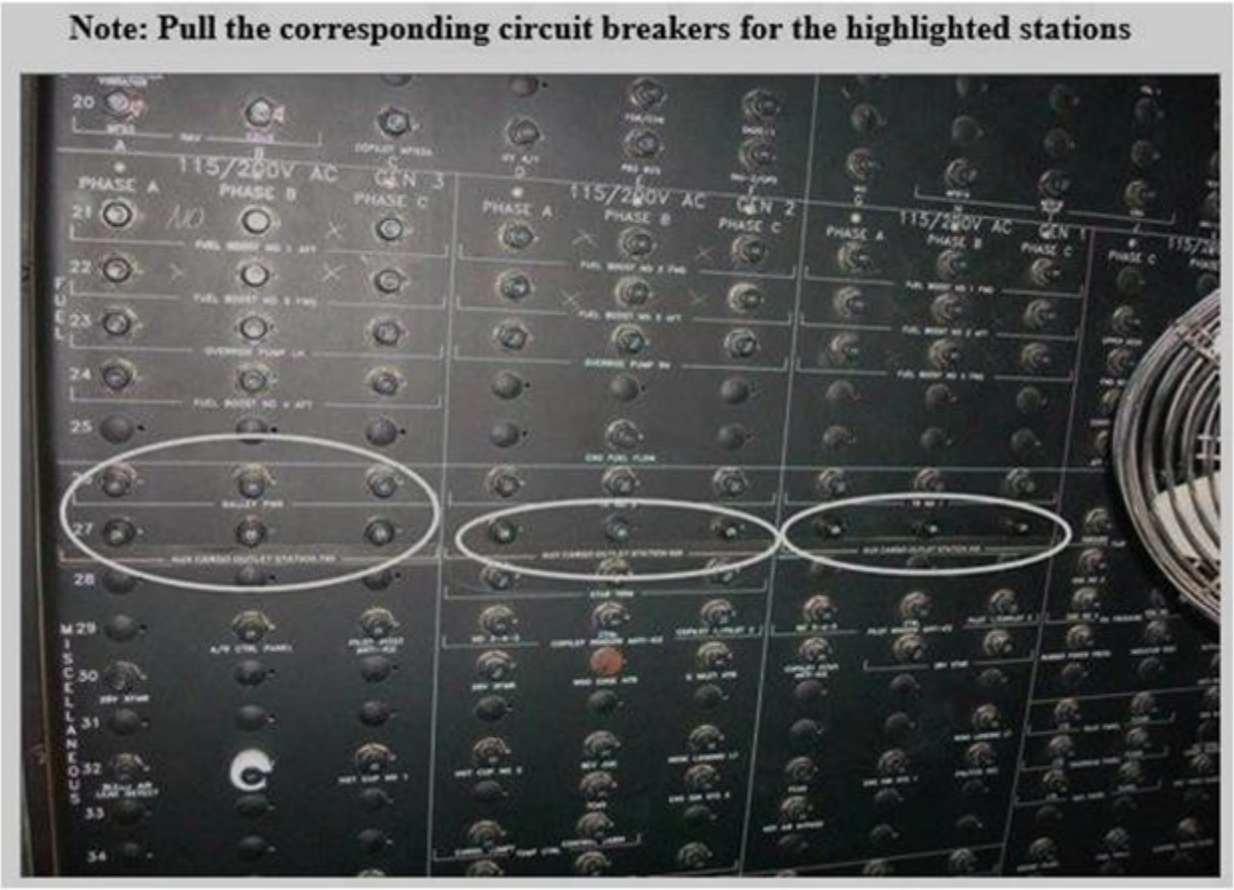
6.2.2.3.1.1. The R and T models identify the three circuit breakers for the Galley Plug, as GALLEY POWER located on the Main Circuit Breaker Panel. BO will pull all three circuit breakers. **(T-3).**

6.2.2.3.1.2. If medical equipment must be removed or plugged in during flight operations, pull the appropriate circuit breakers and ensure equipment is turned off before disconnecting or connecting any plugs from or into Electrical Cord Assembly Set outlets or the Avionics/Unitron® Frequency Converter. Re-secure all plug connections with plastic tie-straps **(**Figure **6.2 and 6.3**) to include AE equipment plugged into the Electrical Cord Assembly Set. **WARNING**: Do not disconnect the pigtail adapter in-flight. **CAUTION**: Ensure all medical equipment is turned off prior to connecting to the Alternating Current Adapter. **Note**: When cords are connected with cannon type plugs, plastic tie-straps are not required.

6.2.2.3.2. Insert KC-135 pigtail adaptor (P/N 8564034-135) from AE Electrical Cord Assembly Set into aircraft receptacle. If using the Avionics/Unitron® Frequency Converter, connect the Adaptive Electrical Pigtail (P/N 8564034-140) securely to the Avionics Frequency Converter's 25 ft. Input Power Cable prior to securing to aircraft power receptacle.

6.2.2.3.3. The BO will reset the circuit breakers. **(T-3)** AECM will visually inspect that the breaker has been reset. **(Figure 6.1). (T-3)**

Figure 6.1. KC-135 Circuit Breaker Panel.



6.2.2.3.4. If using KC-135 pigtail adaptor (P/N 8564034-135), accomplish AC testing in accordance with, Medical Equipment Compendium. Once AC testing is accomplished, secure all Electrical Cord Assembly Set connections at the terminal end of the Electrical Cord Assembly Set with plastic tie-straps **(Figure 6.2)**. Secure the portion of the Electrical Cord Assembly Set cord closest to the pigtail to a non-moving aircraft part **(Figure 6.3)**. **Note**: The Avionics/Unitron® Frequency Converter does not require alternating current testing at or aft of the duplex outlets. Secure medical equipment plugs at the terminal end of the Electrical Cord Assembly Set and alternating current electrical extension cord with tie-straps **(Figure 6.2)**. Tie-straps should be 15 inches in length to adequately cover all circumferences.

6.2.2.3.4.1. When using the Avionics/Unitron® Frequency Converter, aircraft circuit breaker will not be pulled when adding or removing medical equipment. The frequency converter has built in circuit breakers associated with each duplex outlet that provides adequate protection when adding or removing medical equipment. When adding or removing medical equipment, turn off the corresponding duplex outlet. **WARNING**: The Airdyne® 3500 Air Compressor is not approved for use on the KC-135.

Figure 6.2. Plastic tie-straps.

Figure 6.3. KC-135 Pigtail adaptor (P/N 8564034-135).

6.2.3. Temperature. The greatest challenge to ground operations during summer is potential high cabin temperatures. The KC-135 interior heats up very quickly and can place significant thermal stress on patients and crew.

6.2.3.1. The KC-135 air conditioning system is not operated on the ground. PIC/ MCD should request ground air conditioning units when ambient air temperature is 84 degrees or greater.

6.2.3.2. In extreme heat conditions, utilize air conditioning carts to cold soak the aircraft.

6.2.3.3. Other alternatives are: Schedule morning or evening departure/arrivals; open over wing exits to promote air circulation (hatches must be installed prior to engine start); and in extreme situations MCD may request the PIC to declare AIREVAC priority. **Note:** Follow guidance in **6.2.3.1** Use alternative methods as interim or last resort. The PIC may request "AIREVAC priority" for preferential Air Traffic Control handling due to inadequate temperature control during preflight and taxi. AIREVAC priority is only used

for that portion of the flight requiring expedited handling. It is the PIC's responsibility to use this option for bonafide medical situations that demand priority handling.

6.2.3.4. In-flight the aircraft's temperature can be regulated by the BO. Optimal patient locations are mid-cabin, mid-tier for a litter patient.

6.2.3.5. The floor is very cold, and the ceiling area is very warm. Ensure the bottom litter patients have blankets available.

6.3. Lighting. KC-135 lighting consists of ceiling mounted incandescent lights and one positional light, located on (R) hand side, forward cabin (map light).

6.3.1. Some KC-135 models have a second positional light, located on the (L) hand side, forward cabin.

6.3.2. Positional lights are helpful to illuminate specific patients in the litter stanchion area.

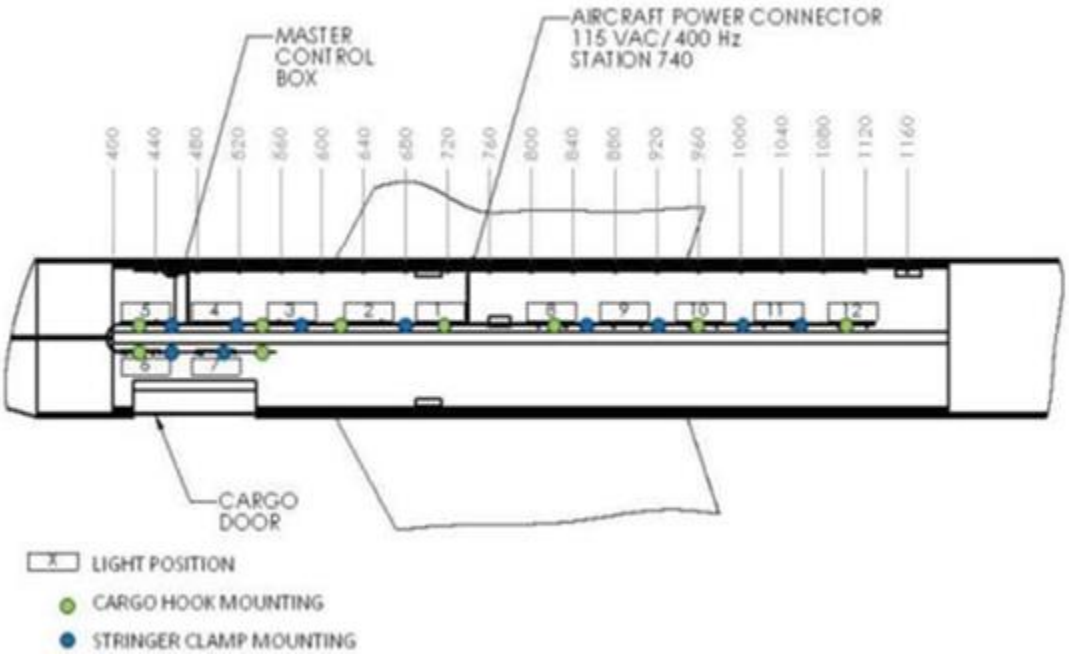
6.3.3. AECMs bring supplemental lighting on board, as required.

6.3.4. The entire crew and all patients and personnel aboard exercise extreme caution when moving in the main cabin.

6.3.5. The KC-135 Patriot® Cargo Light System is an LED lighting system that consists of 12 light bars (each 3ft long) that are clamped to overhead support bars to provide light from the galley to the Auxiliary Power Unit (APU). **(Figure 6.4)**. The lighting system covers 75 percent of the cargo bay. There are 10 along the length of the cargo bay and two additional over the cargo door. **(Figure 6.5)**. The entire system weighs less than 110 lbs. The KC- 135 Portable Cargo Light System connects to the 115 VAC/ 400 Hz power connector at flight station 740 and draws 3.4 Amps. The Master Power/Control unit provides power to all light heads and controls all lights for loading, unloading, and emergency egress. The system can be installed by qualified AE ground support member, or a qualified AECM prior to mission launch. For instructions on installation refer to the Quick Start Guide for 25100-900 KC-135 Portable Cargo Light System Kit manual located in the Electronic Flight Bag.

Figure 6.4. Portable Cargo Lighting System.

Figure 6.5. Light Configuration Diagram.



6.3.6. Operation for Master Control Box. The Master Power Control switch can be in one of three positions. Master Power Control, Off, and Individual Station Control positions. In the Master Power Control position the light intensity for all cargo lights is controlled by the Master Bright / Master Dim switch. Hold the switch up towards Master Bright to increase the cargo light intensity Hold the switch down towards Master Dim to decrease the cargo light intensity. **(Figure 6.6)**.

Figure 6.6. Master Power Control.

6.3.7. Operation for Individual Stations. Switch the Master Power Control switch to the Individual Station Control position. The light intensity will vary by the control knob mounted on each light assembly. Turn the knob on the light assembly to adjust the brightness level. **(Figure 6.7)**.

Figure 6.7. Individual Station Controls.

6.3.8. Operation for Emergency Egress. In order to turn all lights on at full intensity despite any other current settings move the red Egress switch up to the Full Bright On setting. Toggling the Egress switch down returns to the previous mode. Toggle Egress up to ON-all lights go to full brightness. Turn the Egress off-all lights return to dim. **(Figure 6.8.).**

Figure 6.8. Emergency Egress Controls.

6.4. Miscellaneous Information.

6.4.1. The Patient Movement Requirements Center should coordinate with the medical facility nutritional support centers to prepare specialty meals. Schedule meals to arrive to aircraft 1 ½ hours prior to departure.

6.4.2. The appropriate mission support agency (detachment, squadron, etc.) should make arrangements with Fleets Service to obtain coolers for meal storage. Box lunches may be broken down, storing only sandwiches and cold drinks in the coolers, to maximize cooler storage space.

6.4.3. The Charge Medical Technician verifies the latrine knife blade handle is in the open/out position as applicable and that the latrine is fully functional prior to on-loading patients/attendants. Patients and attendants should be encouraged to use available restroom facilities prior to enplaning the aircraft.

6.4.4. Normal soap/water hand washing is not readily available on the KC-135. In-flight kit allowance standards follow infection control guidance and provide chemical hand cleaner. Chemical wipes may also be used.

6.4.5. Ensure chemical hand cleaners are readily available for patient use.

6.5. KC-135 Patient Planning Factors. The MCD/Charge Medical Technician is responsible for the AE configuration of the aircraft. The MCD/Charge Medical Technician may modify the AE configuration to meet the mission requirements. **(Table 6.1). (Figure 6.9 through Figure 6.11).** For the most current and additional Mission Design Series configurations refer to AFMAN 11-2KC-135V3 ADDENDA A, *Aircraft Configurations*.

Table 6.1. AE Configuration of The Aircraft.

LITTER SPACES	AE-1	AE-2	AE-3
Total Spaces	6	9	15
AE Equipment (Note 1)	Bins/Floor Load	3	3
Emergency Litter	Bins/Floor Load	1	1
CCATT (Notes 1 and 6)	2	2	2
Actual Spaces (Note 2)	3	5	11
SEATS	AE-1	AE-2	AE-3
Total Seats (Note 5)	31	28	20
AE Basic Crew (Note 3)	8	8	8
CCATT Crew (Note 3)	3	3	3
BO/Maintenance	3	3	3
Actual Seats (Note 4)	22	19	11

Notes:

1. Other than the spaces allotted, AE and CCATT equipment should be loaded on the aircraft bins or floor loaded. If patient load allows, AE and CCATT equipment may be loaded in litter stanchions. Only increment 1 of the in-flight kit (IFK) and minimum equipment identified in Table 4.1. of AFI/AFMAN 11-2AE Vol 3 will be carried on KC-135 AE missions. Additional equipment on the aircraft will be based on specific patient requirements. Space required for the IFK, medical equipment, and emergency get down litter (EGDL) will not exceed four litter spaces. **(T-3).**

2. Actual litter spaces may decrease based upon patient requirements and equipment. MCD will ensure an emergency litter is carried on all AE missions. **(T-2).**

3. AE and CCATT seats are based on primary crew complement. The MCD/Charge Medical Technician and the 2nd Flight Nurse/2nd Aeromedical Evacuation Technicians should share one seat for equipment stowage. The 3rd Aeromedical Evacuation Technicians should have one seat to store equipment. In the event that space allows, each AECM should be given one seat for equipment stowage.

4. Actual seats may decrease based on crew complement, mission requirements and patient load.

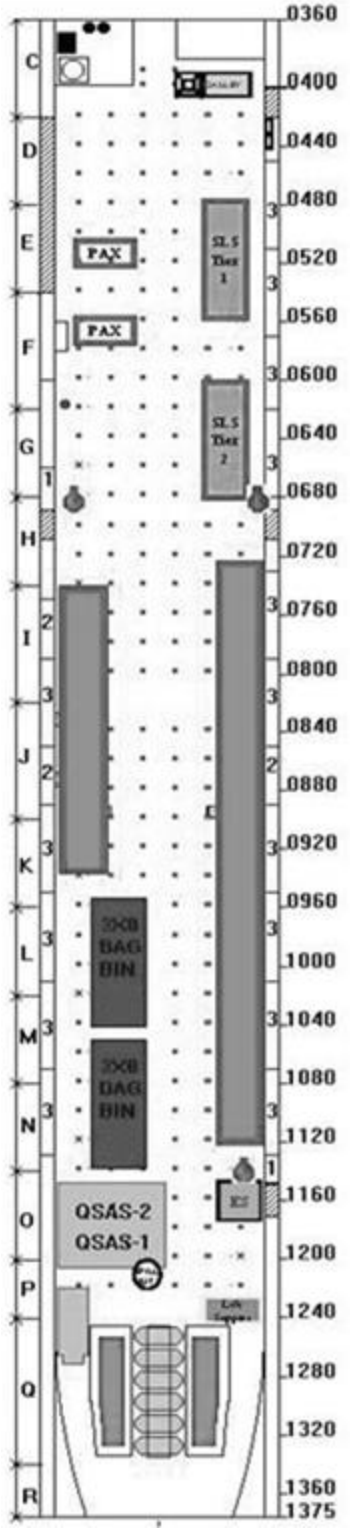
Ensure there are 42 EPOS's (42 LPU's if overwater) available.

5. Sidewall seating can be configured on the left side between pallet position 720 and

840 for two AECMs.

6. Charge Medical Technician provides the BO with final gross weight prior to engine start. Gross weight includes the SLS equipment, AE equipment and patient.

Figure 6.9. KC-135 AE SLS Configuration 1.



KC-135 SLS -1

SLS 1 LOAD PLANNING WORKSHEET

	Aircraft Equipment Section (-21)		
	Weight & Balance Official (Q/A)		
	Air Refueling Program Manager		

** - Adjusted basic WT includes all weights in shoring column (ie. bins, airline seats, shoring etc)*

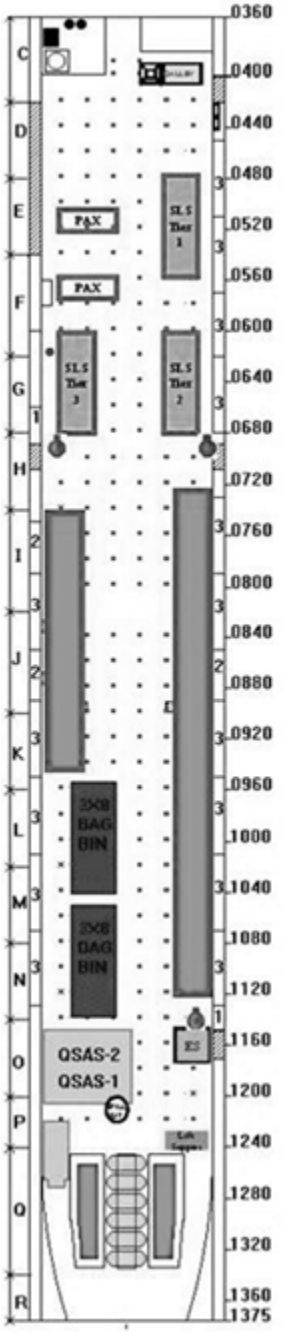
1. Normally provides six litter, 31 web seats for patient and AE crew. The number of AECMs dictates the number of seats available.

2. Patients/Passenger baggage is normally be secured in the KC-135 baggage bins.

3. AE equipment, when not in use, must be secured in accordance with normal tie- down procedures.

4. Do not position cargo, baggage or equipment such that it blocks access to troop doors or cargo ramp. MCD and BO will ensure that clear egress routes are established and maintained. **(T-3).**

Figure 6.10. KC-135 AE SLS Configuration 2.



KC-135 SLS -2

SLS 2 LOAD PLANNING WORKSHEET

	Aircraft Equipment Section (-21)		
	Weight & Balance Offirial (Q/A)		
	Air Refueling Program Manager		

** - Adjusted basic WT includes all weights in shoring column (ie. bins, airline seats, shoring etc)*

Notes:

1. Normally provides six litter, 31 web seats for patient and AE crew. The number of AECMs dictates the number of seats available.

2. Patients/Passenger baggage is normally be secured in the KC-135 baggage bins.

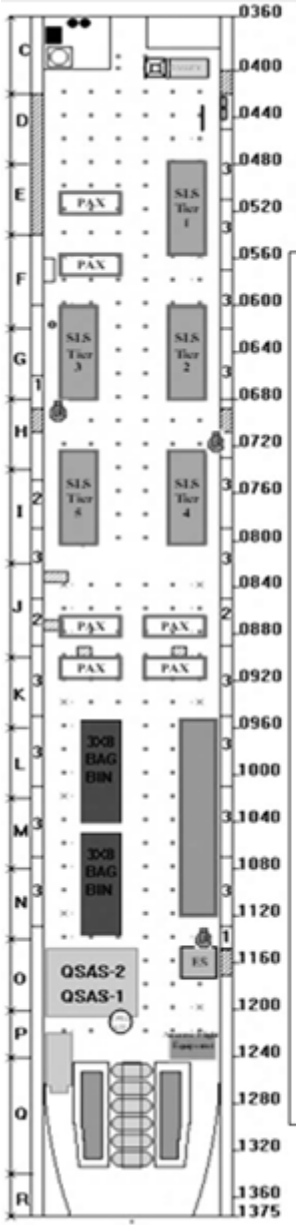
3. AE equipment, when not in use, must be secured in accordance with normal tie- down procedures.

4. Do not position cargo, baggage or equipment such that it blocks access to troop doors or cargo ramp. MCD and BO will ensure that clear egress routes are established and maintained. **(T-3).**

CAUTION: The top litter position is SLS Tier 3 may need to be lowered to accommodate patients and prevent damage to the Emergency Locator Transmitter (ELT) located in (FS 600-680).

Note: Seat airline configuration is based on use of the MP-2 seat.

Figure 6.11. KC-135 SLS Configuration 3.



KC-135 SLS -3

SLS 3 LOAD PLANNING WORKSHEET

	Aircraft Equipment Section (21)		
	Weight & Balance Official (QA)		
	Air Refueling Program Manager		

Notes:

1. Patients/Passenger baggage is normally be secured in the KC-135 baggage bins.

2. AE equipment, when not in use, must be secured in accordance with normal tie- down procedures.

3. Do not position cargo, baggage or equipment such that it blocks access to troop doors or cargo ramp. MCD and BO will ensure that clear egress routes are established and maintained. **(T-3).**

4. Seat airline configuration is based on use of the MP-2 seat.

5. Litter spaces are authorized for medical patients only.

6. Crew Compartment Jump Seat is not authorized seat for occupation without an available crash certified position.

WARNING: When using SLS configuration 3, do not install a sixth SLS tier aft of FS 960 with baggage bins in place until the new baggage bin securing device is approved for use. Current securing procedures for the baggage bins does not allow adequate aisle space and produce a tripping hazard adjacent to a litter tier installed aft of FS 960.

CAUTION: The top litter position is SLS Tier 3 may need to be lowered to accommodate patients and prevent damage to the Emergency Locator Transmitter (ELT) located in (FS 600-680).

Chapter 7

C-21 CONFIGURATIONS

7.1. Aircraft Systems.

7.1.1. Oxygen.

7.1.1.1. Therapeutic oxygen. Available if SPECTRUM unit is in place. If SPECTRUM unit is not in place, utilize PTLOX/BMOS or compressed oxygen tanks as available.

7.1.1.2. Patient emergency oxygen. Utilize aircraft passenger emergency oxygen system or pre-positioned EPOS.

7.1.1.3. Crew Oxygen. Supplied via one high pressure oxygen storage cylinder for demand regulators located on the flight deck. C-21 aircraft normally have two PBE and eight EPOS permanently pre-positioned on the aircraft. The PBE or EPOS can be used as a primary oxygen source for AECMs on the C-21.

7.1.2. Electrical. 28 VDC for power to the Spectrum. **Note**: Equipment operates on battery power and must have enough sustainability for duration of mission if SPECTRUM unit is not in place.

7.2. Spectrum Preflight.

7.2.1. If aircraft power is not on, direct PIC to turn aircraft power on.

7.2.2. Turn on oxygen supply valve, located on the lower aft end of the unit, to full counterclockwise position. Check oxygen pressure gauge to ensure it reads at least 1700 psi.

7.2.3. Turn on panel and overhead light switches to check for proper operation. **Note**: If overhead light does not function ensure C-21 cabin lighting is operational.

7.2.4. Turn on vacuum pump switch. Ensure both vacuum gauges read at least 14 Hg.

7.2.5. Turn on air compressor switch. Ensure both air gauges read at least 46-52 psi.

7.2.6. Turn on electrical inverter switch "A." Wait 15 seconds to ensure inverter turns on. Connect test load (if available) of AC power, not to exceed 3.0 amps. Disconnect the test load and shut off the inverter. Perform same check on electrical inverter "B."

7.2.7. Ensure all circuit breakers are in operating position.

7.2.8. Check for proper operation of stretcher locks.

7.2.9. Turn off all switches and ensure the oxygen supply valve is closed until needed. **Note**: Notify the PIC and maintenance if preflight problems are encountered. To ensure the safety of the patient and to prevent damage to the aircraft, an AECM must directly supervise ground support or medical personnel loading patient or equipment. **(T-3).**

7.2.10. Ensure the backrest and patient safety belt restraints are operational.

7.2.11. Inspect the mattress for rips/tears. **Note**: If tear is more than one inch, AECM should use a barrier between the mattress and the patient (e.g. sheet or blanket) for infection control.

7.3. Performance. Ensure aircraft power is available.

7.3.1. Electrical. Turn on the switch to inverter A or B. Connect equipment into the appropriate outlet. Do not exceed 3.0 amps per outlet (6.0 amps total with use of A and B).

7.3.2. Air Compressor. Turn on the air compressor switch. Attach equipment hose to receive compressed air.

7.3.3. Vacuum Pump. Turn on the vacuum pump. Insert the Ohio suction regulator with SPECTRUM adaptor. Determine suction setting requirements and set to desired setting.

7.3.4. Lighting. Turn on the overhead light switch.

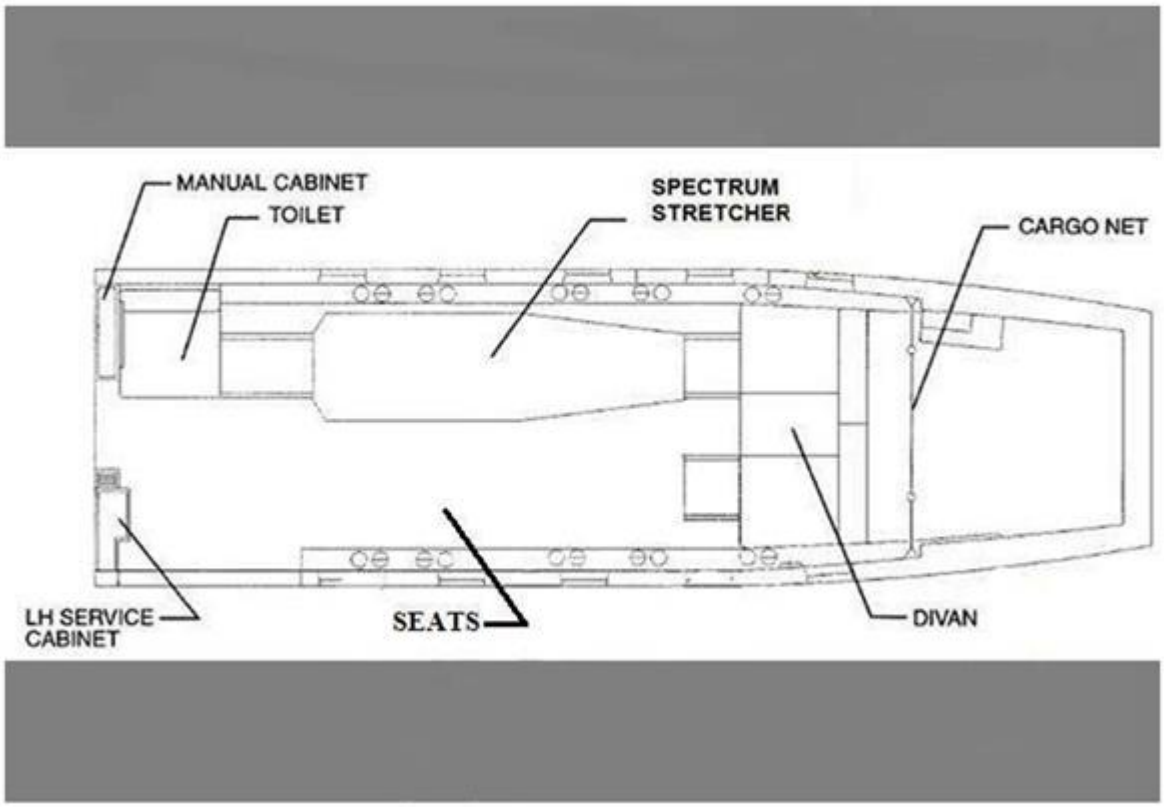
7.3.5. Oxygen. Insert oxygen regulator with the SPECTRUM adaptor. Open valve on top of the oxygen tank. Listen for any audible leaks. Select desired oxygen setting. Monitor the oxygen gauge.

7.4. Patient Planning Factors. (Refer to **Table 7.1** and **Figure 7.1)**.

Table 7.1. AE 1 Planning Factors.

Litter Spaces	1
Seats	5
AE Basic Crew	2
Notes: 1. This AE configuration provides one litter spaces and a total of five seats. The MCD/ Charge Medical Technician is responsible for the AE configuration of the aircraft. The MCD/Charge Medical Technician may modify the AE configuration to meet the mission requirements. For the most current and additional AE Mission Design Series configurations refer to T.O. 1C-21A-1-1 **(Figure 7.1.)**. 2. For C-21 transports with a Neonatal or Critical Care Air Transport Team (CCATT), the AE crew may be limited to one AECM due to weight and space limitations. 3. AE/CCATT/NICU equipment/supplies, crew baggage and patient baggage should be stored in the aft compartment. Patient baggage should be kept to one piece of baggage per person and no more than 60 pounds.	

Figure 7.1. AE-1 Configuration.



7.4.1. Additional C-21 Configuration (AE-2 Configuration (1 Stretcher) in accordance with TO-1C-21A- 1-1

7.4.2. Electrical and oxygen resources are very limited in this configuration.

7.4.3. Maintenance should install stretcher on left side of the aircraft. (Right side installation is labor intensive and thus not practical for this use.)

7.4.4. Ambulatory only, low-risk patients who require minimal nursing care are good candidates for transport. Patients will be able to ambulate on and off the aircraft without assistance. **Note**: Stretcher serves as emergency get-down litter only.

7.4.5. The MCD/Charge Medical Technician is responsible for the AE configuration of the aircraft. The MCD / Charge Medical Technician may modify the AE configuration to meet the mission requirements. For the most current and additional AE Mission Design Series configurations refer to TO 1C-21A-1-1. **Note**: Patient Movement Regulating Center consult validating theater flight surgeon to establish low-risk patient parameters.

7.5. Litter Patient Loading.

7.5.1. Patient Loading System. To mount the system, release the stretcher locks at the forward end of the modular base.

7.5.2. With the patient loader in the folded position, insert the round yoke pin in the equipment mount.

7.5.3. Unfold the patient loader and legs. Place the unit into the ground support plate. Ensure the short support legs are down and secure.

7.5.4. Enplaning the patient. Engage the lock along the patient loading ramp.

7.5.5. Position the stretcher on the patient loader using a four-man lift. The head of the patient may be positioned either forward or aft based on senior medical personal preference. Ensure all armrests are stowed in the litter unit.

7.5.6. Raise the level of the loading ramp using the spring-loaded foot release.

7.5.7. Push the stretcher onto the base from the patient loader.

7.5.8. Insert the stretcher pins through the aft locking plate.

7.5.9. Close and lock the forward stretcher plate, ensuring pins are firmly located within the stretcher lock. Assess the patient.

7.5.10. Deplaning the patient. Open the forward stretcher plate, disengaging the locks.

7.5.11. Mount the patient loading system in accordance with **para 7.5.1** Engage the lock along the patient loading ramp.

7.5.12. Raise the level of the loading ramp using the spring-loaded foot release.

7.5.13. Slide the litter out of the aircraft along the loading ramp. Lower the ramp to the lowest position. Remove the stretcher from the ramp using a four-man lift.

7.5.14. Dismounting. Lower the telescoping legs to the lowest position.

7.5.15. With palms flat and thumbs out, raise the leg assembly out of the ground support plate.

7.5.16. Fold the loading ramp keeping palms flat and thumbs out. When fully folded, remove the mounting yoke from the modular base. Stow the loading ramp for flight.

7.6. Loading Instructions for Neonatal Transport System onto SPECTRUM Unit.

7.6.1. Ensure all loading crewmembers, including pilot, are briefed and fully understand loading procedures and individual responsibilities.

7.6.2. Ensure NTS is sled unit type and is strapped in place, on a support gurney. **Note**: To allow for NTS space needed, the Overhead Pneumatic Console may need to be removed.

7.6.3. Loading requires five individuals: one aircrew member (pilot) inside the aircraft to guide the unit, and four individuals on the outside of the aircraft to slowly slide the unit up the ramp. AECMs will prepare the aircraft with the SPECTRUM-specific loading ramp placed into the appropriate location with the bolt in front of the ramp inserted into the hole at the head of the SPECTRUM base unit. **(T-3).** Ensure the ramp is angled such that it does not touch the sides of the doorway and does not contact the toilet in front of the SPECTRUM unit.

7.6.4. If available, the triangular ramp extension should be secured to the SPECTRUM unit and the ramp, extending toward the seat directly across from the SPECTRUM unit. Remove seat cushions from the forward left passenger seat.

7.6.5. The legs of the ramp must be placed into the steel support stand. The ramp should be in the high position (the height is adjustable), such that it is similar in height to the gurney at full- up position. The gurney is wheeled into place, with the monitors of the NTS facing toward

the rear of the aircraft (the rubber wheel will be at the front left when the gurney is pulled up to the ramp).

7.6.6. Release the support straps of the sled to the gurney.

7.6.7. The four crewmembers on the outside of the aircraft slowly advance the sled up the ramp. The gurney may be pulled away when the sled is completely on the ramp. The two crewmembers closest to the cabin door will exercise caution not to damage the doorframe and left, forward seat armrest when loading. The flight crewmember on-board must be obeyed for changes in loading tempo to prevent damage to aircraft inside far wall.

7.6.8. Once stabilized on the ramp, the aft left crewmember on the outside of the aircraft follows the aft end of the NTS into the aircraft to help guide the unit in and lock the unit into the base.

7.6.9. The flight crewmember inside the aircraft ensures that the sled angles onto the base unit as it advances.

7.6.10. The remaining outside crewmember and the crewmember, which followed the NTS into the aircraft, removes the ramp and supplement lateral support after the NTS sled is secured to the base unit by the spring-loaded metal plate mechanism on each end.

7.6.11. Insert the power cord into the spectrum power outlet.

7.6.12. If a patient is in the NTS, open the base unit oxygen tanks (located under the rear end of the base unit). Plug the oxygen and air intake hoses of the NTS into the appropriate access ports on the spectrum base.

7.6.13. When cleared by the PIC, turn the spectrum base power on. Check the NTS to ensure the alternating current power source is recognized.

7.6.14. After all personnel are on-board, load the ramp and lateral stabilizer supplement up and place on board.

7.6.15. For NTS deplaning, reverse the steps above.

Chapter 8

C-12J CONFIGURATIONS

8.1. Aircraft Systems.

8.1.1. Oxygen.

8.1.1.1. Therapeutic Oxygen. Available if SPECTRUM unit is in place. If SPECTRUM unit is not in place, utilize BMOS/NPTLOX. Oxygen lines may run along the floor as long as they do not pose a tripping hazard for patients or passengers. **CAUTION**: Condensation in humid environments cause excessive dripping from the centerline spine of the overhead framing. Do not secure NPTLOX in areas prone to dripping.

8.1.1.2. Patient Emergency Oxygen. Utilize aircraft passenger emergency oxygen system or pre-positioned EPOS.

8.1.1.2.1. Emergency oxygen is available via two 76.6 cubic foot gaseous oxygen tanks located in the nose of the aircraft. The cylinders are actuated by a push-pull control knob (labeled OXYGEN PULL ON) located at the upper left corner of the pilot's subpanel. The push-pull knob governs oxygen flow to passenger outlets. The passenger emergency oxygen system is equipped with "Dixie cup style" masks located on the aircraft's side wall adjacent to each seat position. In order to initiate oxygen flow from the mask, a lanyard valve pin must be pulled out. The pin must be reinserted to stop the flow of oxygen. The oxygen is delivered to the passengers at a varied rate and has a minimum flow time of 60 minutes based on souls on board and flight altitude.

8.1.1.3. On flights carrying patients/passengers, an EPOS will be available for and positioned near each patient/passenger seat.

8.1.1.4. Crew Oxygen. The C-12J has two PBEs installed as standard aircraft equipment. All AECMs will have one PBE per crew member. **(T-2).** The PBE is the primary oxygen source for AECMs.

8.1.1.5. The EPOS is not a substitute for the required aircraft's emergency passenger supplemental oxygen system used in the event of cabin depressurization (above 10,000 feet) but rather as a temporary measure to provide oxygen to passengers in a toxic environment (smoke/fumes).

8.1.1.6. Concurrent servicing is not authorized for C-12J aircraft.

8.1.2. Electrical.

8.1.2.1. Some C-12J aircraft have been modified with two 3-pin "household type" service electrical outlets that can be used with AE equipment that operates on 115 VAC/400 Hz. Each electrical service outlet provides 15 amps for a total of 30 Amps, available for AE use. **WARNING**: Do not use if Spectrum is plugged in.

8.1.2.2. The SPECTRUM unit operates on the C-12J 28 VDC generator. The SPECTRUM provides 4.3 amps per outlet (8.6 amps total with use of both receptacles). If the SPECTRUM is not in place and the C-12J is unmodified with "household type" service outlets, AECM's will ensure the medical equipment has adequate battery life for mission duration, to include scheduled ground time. **(T-2).** In order to supply power to the

SPECTRUM unit the "AEROMED PWR" and "AEROMED ALTERNATING CURRENT OUTLETS" located on the Aero Medical Master Control Panel **(Figure 8.1)** in the Forward Cabin Baggage Compartment is switched to the on position. **WARNING**: Prior to engine shutdown the aircrew will turn off the "AEROMED PWR" and "AEROMED ALTERNATING CURRENT OUTLETS." **(T-2).** Ensure all equipment has enough battery power to last until patients are offloaded.

Figure 8.1. Aero Medical Master Control Panel.

8.2. C-12J Patient Planning Factors. (Refer to **Table 8.1** and **Figure 8.2** through **Figure 8.3**).

Table 8.1. Configuration Planning Factors.

LITTER SPACES	AE-1
Total Spaces	1
SEATS	AE-1
Total Spaces	10
AE Basic Crew	2
Ambulatory/Attendant	7/8

Notes:

This AE configuration provides one litter spaces and a total of 10 seats. The number of seats offered for ambulatory patients/attendants are based on the basic C-12J Aircrew Complement.

For C-12J transports with a CCATT, the AE crew may be limited to one AECM due to weight and space limitations.

AE/CCATT/NICU equipment/supplies, crew baggage and patient baggage should be stored in the aft compartment, behind the half bulkhead area between fuselage station 407 and 513.5 on the aircraft right.

To secure the NPTLOX remove the seat from station five and utilize four "D" rings from allowance standard 887F. **WARNING:** Do not block emergency egress or exits.

Figure 8.2. C-12J Configuration.

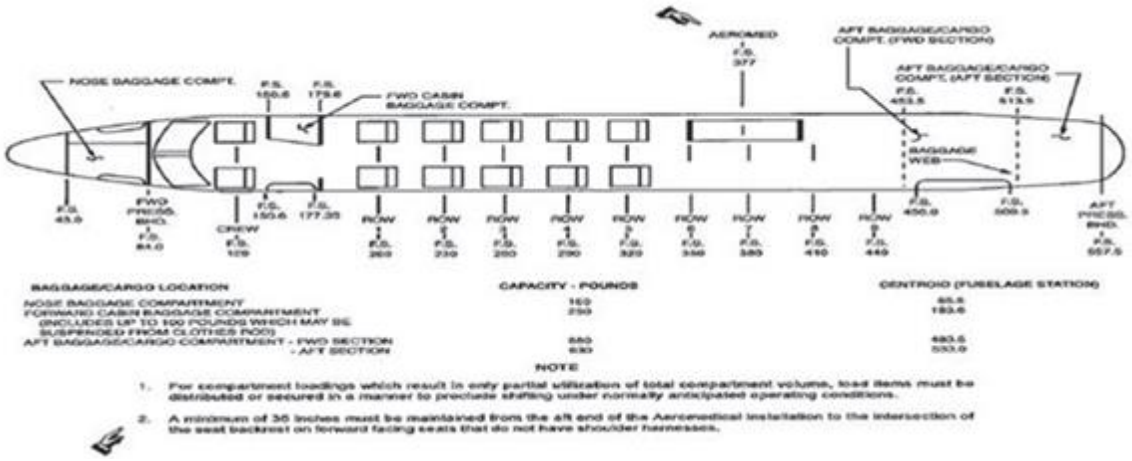


Figure 8.3. Floor-loading Configuration.

WARNING: Litters will be secured to the aircraft floor with 5" inch plywood shoring.

8.2.1. Seats. 10 seats can be arranged in five rows of two on each side of the passenger compartment installed on continuous tracks. Seats at station six through nine must be removed on all AE Missions.

8.2.2. AE-1 Configuration. If the SPECTRUM unit is installed on the aircraft, follow guidance in accordance with **para 8.3**.

8.2.3. AE-2 Configuration. Limited to carrying ambulatory, low-risk patients who require minimal nursing care as electrical resources are limited in this configuration. Patients must be able to ambulate on and off the aircraft without assistance.

8.2.3.1. The emergency get down litter (EGDL) is secured on the right side of the aircraft at seat station six through nine. When securing the EGDL to the side wall and seat tracks the cargo tie down strap must have both ratchet ends connected to the side wall track and not the floor track utilizing four "D" Rings as well as two NTS blocks under the midline litter stirrups. Wrap the cargo tiedown strap around the handles one time then secure to "D" ring and ratchet until secured with the ratchet facing inboard.

8.2.3.2. Secure the NPTLOX by removing the seat from station five and utilizing four "D" Rings from Allowance Standard 887A. **WARNING**: Do not block emergency egress or exits.

8.3. Patient Loading.

8.3.1. Enplaning/Deplaning Procedures. **WARNING**: At a minimum, the left engine will be shutdown during all enplaning/deplaning procedures. If operationally feasible, the patient's condition warrants, or safety is in question; shutdown both engines.

8.3.2. Ambulatory patients are enplaned/deplaned via the air stair door. At least one AECM should be positioned on the ground at the bottom of the air stair door.

8.3.3. Litter patients are loaded utilizing the Cargo Door and the Patient Loading System. Enplaning/deplaning is completed in accordance with **para 7.5**. **Note**: When enplaning/deplaning litters through the cargo door and if the SPECTRUM unit is not in place, a minimum of four people must be employed on the ground with an additional two to three people inside the aircraft.

8.3.4. All occupants must have an assigned seat with a seatbelt. **(T-2).**

8.3.5. Passengers may hand carry a Department of Transportation-approved Infant Car Seat (ICS) aboard the aircraft to use in assigned seats. The ICS will be secured to the seat using seat belts. The PIC is the final authority in determining if the ICS is adequately secured. **Note**: Vest and harness type child restraint systems, and lap held child restraints are not approved for use in the aircraft. Adults may hold infants under the age of two in lap for any critical phase of flight. In the event of turbulence or an emergency landing, it is highly recommended for infants to be secured in an ICS.

8.3.6. AECMs use sound judgment and follow prescribed guidance when enplaning/deplaning litter patients.

8.4. Communications.

8.4.1. The primary means of communication from the flight deck to the cabin is the intercom system. The secondary means is audible verbal communication as not all C-12J aircraft are equipped with an intercom system. **Note**: In-flight or ground emergency notification will occur via the intercom system or verbal.

8.4.2. The MCD will monitor communication with the flight deck during critical phases of flight by connecting into the communication port at flight station 200. **(T-2).**

8.4.3. AECMs should use the Aircraft Wireless Intercom System (AWIS) during all phases of flight. When the AWIS transceiver is not in use it must be shut off. **Note**: If the AWIS is in use and not being carried (i.e. using restroom), ensure the transceiver's antenna maintains a distance of 8 inches from aircraft cable connectors and avionics equipment.

8.5. Miscellaneous Information.

8.5.1. Crew Complement. The crew complement should be one Flight Nurse and 2nd Aeromedical Evacuation Technicians. The Chief Nurse has the authority to adjust the crew complement in accordance with AFI/AFMAN 11-2AE Vol 3. Actual seats may decrease based on crew compliment, mission requirements and patient load.

8.5.2. Alerting Procedures.

8.5.3. C-12J aircrew alert time is 3+00 hours before scheduled takeoff time (allows one hour for reporting and 2+00 hours for mission preparation).

8.5.4. The MCD will coordinate with PIC on alert times in coordination with Command and Control. **(T-3).**

8.5.5. Patient Movement Factors

8.5.6. Litter and Ambulatory patients are approved for flight based on validating flight surgeon concurrence of aircraft acceptability for the patient.

8.6. Airlifting Hazardous Cargo. Cargo (including hazardous cargo) and passengers may be carried with patients on the C-12J unless a clear detriment to the health and well-being of the patient or passengers can be demonstrated. The decision will be made by the PIC/MCD, considering the need for maximum utilization of the aircraft. **(T-3).** Refer to AFMAN 24-204, *Preparing Hazardous Materials for Military Air Shipments* for hazardous product special provisions rating. P4 and P5 rated hazardous material have no AE restrictions. Conflicts will be referred to the respective tasking AE command element for decision. **(T-2).** Litter patients will be positioned forward of cargo pallets. **(T-2).**

Chapter 9

FLOOR LOADING

9.1. C-130 Floor Loading.

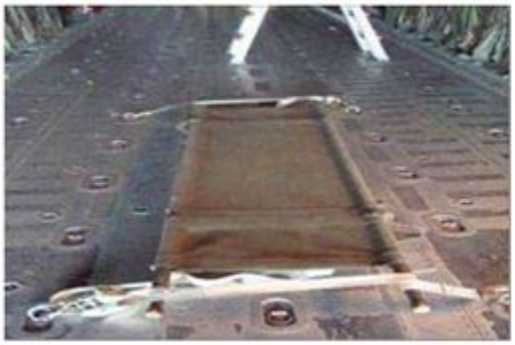
9.1.1. Floor-loading procedures for loading patients are authorized for all contingency operations when a time critical environment exists (i.e. non-secure landing zones, areas faced with enemy siege/hostile fire, humanitarian reasons, etc.), and minimum ground time is essential. Floor-loading procedures can be practiced and trained during Aeromedical Readiness Missions (ARM), joint training operations, exercises, etc. Aircrew will configure the cargo area floor with all rollers stowed. **(T-3).**

9.1.2. Ambulatory Patients: If available, any cushioning material may be used for seating, to prevent the patient from having to sit on the bare cargo area floor. Seat ambulatory patients so they face forward in the aircraft. Attach a cargo tie-down strap for each row of patients, in a manner that it provides forward restraint and body stability. See MDS TO 1C-130A-9 or TO 1C-130J-9 *Cargo Loading Manual* for proper use of the tie-down device.

9.1.3. Litter Patients: Two crewmembers are required to work simultaneously in securing the opposite sides of the litters to the floor (applies when securing two or three litters together). Position litters side-by-side and longitudinally on the cargo area floor, with the patient's head toward the aft of the aircraft. A total of 15 litter patients can be floor-loaded on the C-130. This is comprised of five rows of three litters. Medical equipment can be secured on a litter(s) on the aircraft floor, sidewall litter tiers or on the ramp. Secure the litters to the aircraft floor using the following procedures. **(See** Figures **9.1 – 9.3**). **Note**: Maximum altitude for floor-loaded patients is Flight Level 350. **Note**: An additional two pallet positions are available on the C-130J model that can accommodate an additional six litter patients.

9.1.3.1. One litter: Use one tie-down device at each end of the litter. Center litter over tie down ring column. Connect ratchet end of device to tie down ring, and run strap webbing over the litter handles, wrapping once around each handle. Attach the hook end of the tie-down device to tie down ring. Remove slack from strap webbing and ratchet the device. Repeat process at other end of litter. Ensure ratchets have a minimum of 1½ turns of webbing around the spindle.

Figure 9.1. C-130 One Litter.



9.1.3.2. Two litters: Use one tie-down device at each end of the litter. Align inboard litter handles over tie down ring. Connect ratchet end of device to tie down ring, and run strap

over outside handle, wrap once around center handles, strap over outside handle. Attach the hook end of the tie-down device to tie down ring. Remove slack from strap webbing and ratchet the device. Repeat process at other end of litter. Ensure ratchets have a minimum of 1½ turns of webbing around the spindle.

Figure 9.2. C-130 Two Litters.

9.1.3.3. Three Litters: Use one tie-down device at each end of the litter. Connect ratchet end of device to tie down ring. Pass over first handle, wrap center handles, and pass strap over last handle. Attach the hook end of the tie-down device to tie down ring. Ensure ratchets have a minimum of 1½ turns of webbing around the spindle.

Figure 9.3. C-130 Three Litters.

9.2. C-17 Floor Loading.

9.2.1. Floor-loading procedures for loading patients are authorized for all contingency operations when a time critical environment exists (i.e. non-secure landing zones, areas faced with enemy siege/hostile fire, humanitarian reasons, etc.), and minimum ground time is essential. Floor-loading procedures can be practiced/trained during Aeromedical Readiness Mission (ARM), joint training operations, exercises, etc. The cargo area floor will be configured with all rollers stowed.

9.2.2. Ambulatory Patients: If available, any cushioning material may be used for seating, to prevent the patient from having to sit on the bare cargo area floor. Seat ambulatory patients so they face forward in the aircraft. Attach a cargo tie-down strap for each row of patients, in a manner that it provides forward restraint and body stability. See T.O. 1C-17-9A for proper use of the tie-down device.

9.2.3. Litter Patients: Two crewmembers are required to work simultaneously in securing the opposite sides of the litters to the floor (applies when securing two or three litters together). Position litters side-by-side and longitudinally on the cargo area floor, with the patient's head toward the aft of the aircraft. A total of 48 litter patients can be floor-loaded on the C-17. This is comprised of eight rows of two groups of three litter patients. The first row of litters starts at FS 360. In addition 12 litter patients can be placed on the ramp for maximum utilization of the aircraft. Maximum altitude for floor-loaded patients is Flight Level 350.

9.2.3.1. One litter: Use one tie-down device at each end of the litter. Center litter over tie down ring column. Connect ratchet end of device to tie down ring, and run strap webbing over the litter handles, wrapping once around each handle. Attach the hook end of the tie-down device to tie down ring. Remove slack from strap webbing and ratchet the device. Repeat process at other end of litter. Ensure ratchets have a minimum of 1½ turns of webbing around the spindle. **(Figure 9.4)**.

Figure 9.4. C-17 One Litter.

9.2.3.2. Two litters: Use one tie-down device at each end of the litter. Align inboard litter handles over tie down ring. Connect ratchet end of device to tie down ring, and run strap over outside handle, wrap once around center handles, strap over outside handle. Attach the hook end of the tie-down device to tie down ring. Remove slack from strap webbing and ratchet the device. Repeat process at other end of litter. Ensure ratchets have a minimum of 1½ turns of webbing around the spindle. **(Figure 9.5)**.

Figure 9.5. C-17 Two Litters.

9.2.3.3. Three Litters: Use one tie-down device at each end of the litter. Position outside litters to create a center aisle. Connect ratchet end of device to tie down ring. Pass over first handle, wrap center handles, and pass strap over last handle. Attach the hook end of the tie-down device to tie down ring. Ensure ratchets have a minimum of 1½ turns of webbing around the spindle. **(Figure 9.6)**.

Figure 9.6. C-17 Three Litters.

9.2.3.4. Side wall seats remain usable with this floor-load configuration. In-flight kits, medical equipment, and baggage will need to be secured on side wall seats. Equipment litters may be used if factored into 48-60 floor-loaded litter capacity. A sufficient number of side wall seats must be maintained for AECMs.

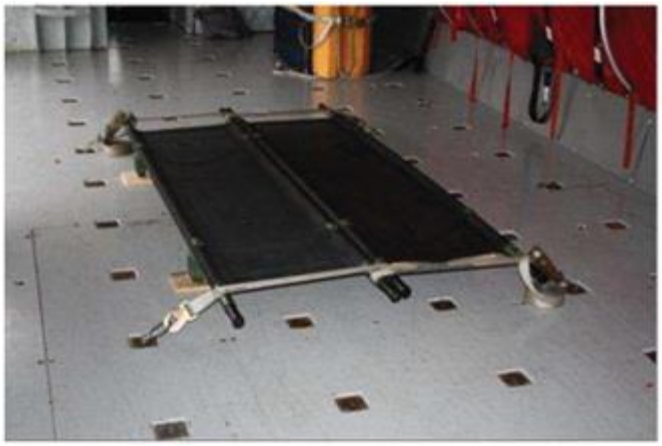
9.3. KC-135 Floor Loading.

9.3.1. Patients may be floor-loaded with standard cargo tie-down straps, in coordination with the BO.

9.3.2. Do not place litters in front of exits or on top of landing gear inspection window covers (marked in red, yellow, or black).

9.3.3. Maximum floor-loaded litter capacity is eight patients. There is no set litter floor loading configuration standard for the KC-135. **(See Figure 9.7)**. Maximum ambulatory capacity depends on aircraft configuration. Maximum altitude for floor-loaded patients is Flight Level 350. **Note**: To prevent damage to the aircraft floor, appropriate shoring must be used under floor-loaded litter stirrups. Coordinate with the BO to secure appropriate shoring material. An aircraft pallet may also be used to secure the litter(s).

Figure 9.7. KC-135 Two Litters.



Chapter 10

OPPORTUNE AIRCRAFT SYSTEMS

10.1. KC-10 Systems.

10.1.1. Oxygen.

10.1.1.1. Therapeutic oxygen. Not available on the KC-10. Use PTLOX/NPTLOX, or compressed oxygen tanks as available. Oxygen lines may run along the floor as long as they don't pose a tripping hazard for patients or passengers. **CAUTION**: Condensation in humid environments cause excessive dripping from the centerline spine of the overhead framing, do not secure PTLOX/ NPTLOX in areas prone to dripping.

10.1.1.2. AECM emergency oxygen. AE crew will use the high-pressure portable oxygen cylinders located in the crew bunks. **(T-2).** AECMs will coordinate with the BO to obtain a 5th high pressure portable oxygen cylinder from the Air Refueling Operator's Station. **(T-3).** AECMs may place the high-pressure portable oxygen cylinders with attached quick don mask near their seat. **Note:** AECMs will not store baggage or personal items in crew bunks. **(T-3).** Coordinate with the PIC/BO for access and use. Attach quick don mask to bottle, but do not perform PRICE check. Tasked AECMs will be required to provide their own quick don masks. **(T-3). Note**: There are no recharger hoses on the KC-10. **Note:** Bunk occupants use EPOS in place of the portable oxygen cylinders.

10.1.1.3. Patient emergency oxygen. Ambulatory patients will utilize the aircraft drop down/seat or wall mounted emergency oxygen system. **(T-3).** Dixie cup masks provide 22 minutes of oxygen regardless of cabin altitude. Litter tier and floor-loaded patients will use EPOS. **(T-3).** Charge Medical Technicians ensure Aircrew Flight Equipment (eight EPOS, eight LPU, four infant cot and EPOS demonstration kit) are enplaned at originating station.

10.1.2. Electrical.

10.1.2.1. Electrical power for medical equipment is provided by an approved Frequency Converter and Adaptive KC-10 Electrical Pigtail (P/N 8564034-145). **Note**: Additional KC-10 pigtails are required when accessing more than one outlet at the same time.

10.1.2.2. Coordinate with the BO prior to electrical outlet use and prior to electrical frequency converter placement. Electrical lines may run along the floor as long as they don't pose a tripping hazard for patients or passengers. **CAUTION**: Condensation in humid environments cause excessive dripping from the centerline spine of the overhead framing, do not secure frequency converter in areas prone to dripping. Ensure electrical outlets are protected from dripping.

10.1.2.3. There are four electrical outlets available in the cargo compartment which may be used for AE and they provide a source of 115-200V/400 Hz. These outlets are installed along the right-hand cargo compartment wall, approximately 10 inches above the floor, aft of the cabin doors (including the deactivated over wing door).

10.1.2.4. 115 V/400 Hz outlets. Outlets located at positions 1R (FS 462), 2R (FS 864), and 3R (FS 1311) provide a combined total of 20 Amps. The outlet located at position 4R (FS 1909) provides an individual total of 20 Amps. **Note**: Use of the 100ft power cable is

required when accessing the 4R outlet. Maximum amperage capability for the KC-10 aircraft is 40 Amps. Due to the distance of the 4R outlet from the patient care area, the frequency converter is not easily monitored in flight. The 4R outlet should only be used if more than 20 amps are required. An additional frequency converter is required to access more than 20 amps.

10.1.3. Communications.

10.1.3.1. The KC-10 cockpit does not use interphone for communication. The primary means of communication is the PA system on the aircraft in accordance with AFI/AFMAN 11-2AE Vol 3. **Exception**: If the PA is inoperative on the KC-10, the inter-phone cable will not be available for the MCD to use during take-off and landing.

10.1.3.2. There are no bells or horns on the KC-10 to signal an in-flight or ground emergency. Emergency notification occurs over the intercom system.

10.1.3.3. The MCD must borrow a headset from the KC-10 crew in order to connect to the interphone system. **(T-3).** MCD will be used the interphone in the event of a patient emergency. **(T-3).** Other communications with the pilot/BO should be accomplished face-to-face. **Note**: Only five crewmembers are allowed in the KC-10 cockpit at any given time.

10.1.4. Configurations.

10.1.4.1. There are no standard configurations for the K-10. Coordinate with BO to determine configuration requirements.

10.1.5. Enplaning/Deplaning Procedures.

10.1.5.1. AECMs follow enplaning/deplaning guidance in accordance with AFI/AFMAN 11-2AE Vol 3.

10.1.5.1.1. Door 2R is the only approved entrance for loading litter patients.

10.1.5.1.2. Door 1L or 1R should be used to enplane/deplane ambulatory patients via air stairs. Door 2R may be used to enplane/deplane ambulatory patients using a HDPLP or similar vehicle.

10.2. C-5 Systems.

10.2.1. Oxygen.

10.2.1.1. Therapeutic oxygen. Not available on the C-5. Use the NPTLOX/PTLOX or compressed oxygen tanks as available. Coordinate with LM prior to therapeutic oxygen placement. **Note**: Patient transport in courier compartment. Secure NPTLOX/PTLOX in the cargo compartment and run oxygen lines through the hand hold in the floor escape hatch. If using compressed oxygen tanks (H-tanks), secure tanks in the closet across from the courier seat. For patient transport in troop compartment, secure NPTLOX/PTLOX in the cargo compartment and run oxygen lines up the side of the troop stairwell. If using compressed oxygen tanks, secure tanks to the stairwell guard.

10.2.1.1.1. The NPTLOX/PTLOX requires up to 300 feet of additional oxygen connecting hose from the cargo compartment to the patient.

10.2.1.2. AECM emergency oxygen. The P/N 358-1506 series quick-don oxygen mask with goggles or full-face mask attached connected to a walk around bottle will be the primary oxygen source for AECMs.

10.2.2. Electrical systems.

10.2.2.1. Electrical power for medical equipment is provided by using the Avionics or Unitron® Frequency Converter.

10.2.2.2. Coordinate with the LM prior to electrical outlet use and prior to electrical frequency converter placement. The Avionics/Unitron® Frequency Converter may be plugged into an aircraft 115-200V/400 Hz AC outlet.

10.2.2.2.1. The 400 Hz outlets can maximize the 30 amp limit of the Avionics/Unitron® Frequency Converter. (There are 35 amps available on the right side of the aircraft and 55 amps available on the left side of the aircraft). Secure the electrical frequency converter(s) to the cargo floor. Distribute the power via the Electrical Cord Assembly Set to either the courier or troop compartments.

10.2.2.2.2. Patient transport in courier compartment. Secure the converter near cargo compartment station 1320 and route the Electrical Cord Assembly Set cord through the hand hold in the floor escape hatch.

10.2.2.2.3. Patient transport in troop compartment. Secure the converter near cargo compartment station 1820 and route the Electrical Cord Assembly Set cord up the side of the troop stairwell.

10.2.3. Communication. The AE crew should use AWIS to communicate to each other during the mission and will wear hearing protection at all phases of flight.

10.3. KC-46 Systems.

10.3.1. Oxygen.

10.3.1.1. Therapeutic oxygen. Not available on the KC-46. Utilize the Portable Therapeutic Liquid Oxygen System (PTLOX)/Next Generation Portable Therapeutic Liquid Oxygen System (NPTLOX) or compressed oxygen tanks as available. **Note:** To prevent damage to the aircraft floor, appropriate shoring must be used under the NPTLOX with four A-7000 floor fittings. One piece of shoring is required. A 24x24 inch piece of shoring will provide adequate weight distribution of 6.5 PLI (Pounds per linear inch) and 39 PSF (Pounds per square feet). Other shoring options may be used as long as linear and area load limits are not exceeded. (Follow KC-46 aircraft configuration guidance)

10.3.1.2. Patient emergency oxygen. Utilize EPOS. EPOS for patients should be requested in Global Decision Support System (GDSS) comments. Requests are coordinated through controlling command and control (C2) agency. **Note**: Integral patient emergency oxygen is only available on the Integral Litter Stanchion sets on this aircraft (pallet positions 8 and 9). This emergency oxygen does not provide eye protection in the event of heavy smoke/fumes in the cargo compartment. Ensure EPOS are readily available for all patients.

10.3.1.3. Crew oxygen. A gaseous oxygen system supplies oxygen to the flight compartment, aircrew member compartment (ACMC), Air Refueling Operator Station

(AROS), and main deck cargo compartment (MDCC). Three independent primary oxygen systems are installed:

10.3.1.3.1. The flight deck oxygen system supplies oxygen to the flight compartment via two high pressure gaseous oxygen cylinders.

10.3.1.3.2. The main deck oxygen system supplies oxygen to the ACMC (including AROS) and the MDCC. The ACMC has six high pressure oxygen cylinders which supply oxygen to masks near the AROS seats, crew seats in the multi-purpose area, integral AE litter stanchions and recharger ports.

10.3.1.3.3. A chemical oxygen generation system supplies oxygen to the lavatory and crew bunks. The generators supply oxygen for a minimum of 22 minutes.

10.3.2. Electrical.

10.3.2.1. A 115VAC/60 Hz converter is installed on-board the KC-46 and powers eleven service outlets located on the left and right sidewalls at approximately every other pallet position. Each of the outlets provides a max of 20 amps.

10.3.2.2. The Unitron portable power system cannot be utilized on the KC-46. AE crews will carry frequency converter in the event of a tail swap. **(T-1)**

10.3.2.3. Plastic tie straps are not required for securing electrical connections.

10.3.3. Mission Execution.

10.3.3.1. Loading.

10.3.3.1.1. Air stairs are the preferred method to enplane/deplane ambulatory patients.

10.3.3.1.2. Follow general litter loading considerations IAW AFMAN11-2AEV3. The primary means to enplane/deplane litters weighted with equipment, supplies, or manikins is a high-lift capable vehicle. Litter patients should be enplaned utilizing the High Deck Patient Loading Platform (HDPLP) or Patient Loading System (PLS) through the cargo door. If the HDPLP is not available, request a hi-lift truck, Halverson Lift, Tunner (K-Loader). Litter patients should be loaded headfirst and deplaned feet first.

10.3.3.1.3. Ensure all enplaning/deplaning activities are coordinated with boom operator. **WARNING:** Secure forward blank pallets at the cargo entry door together utilizing 5K ratchet tie-down straps to prevent shifting.

10.3.3.2. Unique Aircraft Flight Equipment/Emergency Equipment Information.

10.3.3.2.1. Life Rafts. There are two 10-man life rafts (overload capacity is 15) located next to the left forward entry door against the lavatory wall. The aft left and right entry doors are equipped with evacuation slides that are also configured as 60-man life rafts (overload capacity is 76). **WARNING:** To deploy aft emergency evacuation slide/raft, the aft door arming lever must be in the SLIDE ARMED position.

10.3.3.2.2. Emergency Evacuation Slides. The left and right overwing emergency exit doors are equipped to automatically deploy and inflate a ramp/slide when opened. **CAUTION:** There is no way to disarm the overwing exit ramp/slide deployment from

inside the aircraft. Only open overwing emergency exit doors in the event of an emergency.

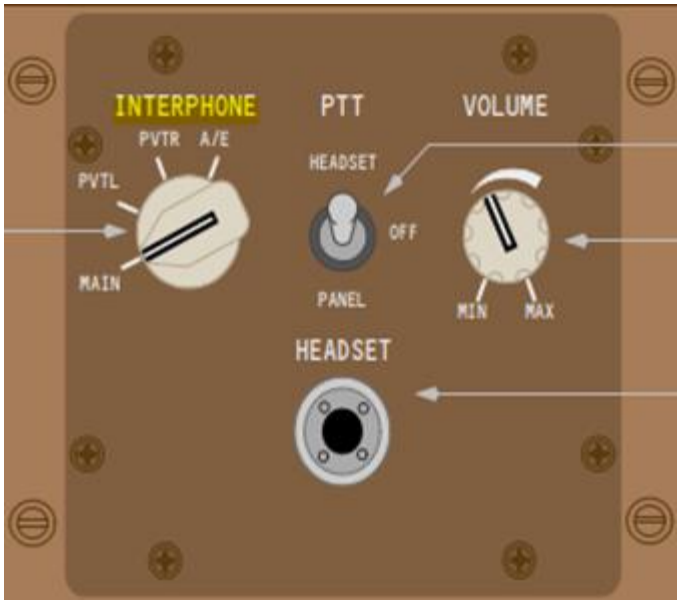
10.3.3.2.3. Life Preservers. Additional Life Preservers should be requested for patients in GDSS comments.

10.3.3.2.4. Fire Extinguishers on board the KC-46 are unique and differ from the HALON 1211. There are 10 fire extinguishers installed on the KC-46. Two water fire extinguishers and eight non-ozone depleting carbon dioxide fire extinguishers. **WARNING:** The concentrated agent in the carbon dioxide fire extinguishers can produce toxic byproducts. Avoid inhalation of these materials by evacuating and ventilating the area. Reference KC-46A Flight Crew Operations Manual for further information.

10.3.3.3. Litter Stanchion Augmentation Set (LSAS). Due to the curvature of the fuselage walls, integral litter stanchion intravenous (IV) polls cannot be extended and LSAS doors cannot be opened past 90 degrees. **CAUTION:** Extending past these limitations will damage fuselage walls.

10.3.4. Communications**.** The audio control panels (ACPs) are used to control transmission and reception of radio and the interphone audio. There are eight ACPs in the airplane. Four ACPs are installed in the flight deck. Two are installed at the AROS, ACMC, and two are installed adjacent to the crew seating in the aft of the aircraft. The MCD should monitor the MAIN interphone channel during critical phases of flight. The aeromedical/evacuation interphone channel can be utilized for discussion with front end crew if directed. See (**Figure 10.1**) for an example ACP.

Figure 10.1. Audio Control Panel.



10.3.5. Miscellaneous Information.

10.3.5.1. Crew members should exercise heightened awareness as people transit around the omni-rollers and brief passengers/patients/personnel on the potential hazards that exist.

Additionally, crews should be available to assist where necessary to prevent any potential injuries from occurring. **WARNING:** Gaps in coverage of the omni-roller mats create a tripping or slipping hazard when personnel, passengers, or patients are moving through this area.

10.3.5.2. **CAUTION:** KC-46 aircraft flooring is highly susceptible to damage from excessive weight or dropped items. Report all damages to BO.

10.3.5.3. Ensure all passengers/patients have ear protection available to them before departure. **WARNING:** Noise levels in excess of 85 decibels in the MDCC have been noted and can create unacceptable noise exposure to passengers and patients.

10.3.5.4. There is not a place to secure a water container on this aircraft. Ensure proper planning for nutrition and hydration needs are accomplished in accordance with DAFI 48-107V1, *En Route Care and Aeromedical Evacuation Medical Operations.*

10.3.6. Floor Loading.

10.3.6.1. **CAUTION:** Floor loading for litter patients and equipment will only be done on an empty aircraft pallet. **(T-2)** The NPTLOX is the only item allowed to be floor loaded to the aircraft floor with shoring.

10.3.6.2. Utilize blank standard aircraft pallets in place of shoring. Aircraft pallets will be moved and secured by the BO. **(T-2)** Two crewmembers are required to work simultaneously in securing the opposite sides of the litters to the pallet. Position one, two, or three litters side-by-side and longitudinally on the empty pallet. Secure with cargo tie down straps to the D-rings on the edges of the pallets. Preferably on the left and right of pallet to decrease forward and aft movement of secured items. See **Figure 10.2** for floor loading example.

10.3.6.3. One Litter: Use one tie-down device at each end of the litter. Connect one end of the ratchet device to the pallet D-rings and run strap webbing over the litter handles, wrapping once around each handle. Attach the hook end of the tie-down device to the tie down ring. Remove slack from strap webbing and ratchet the device. Repeat process at other end of litter. Ensure ratchets have a minimum of 1½ turns of webbing around the spindle.

10.3.6.4. Two Litters: Use one tie-down device at each end of the litter. Center inboard litter handles on pallet. Connect one end of the ratchet device to the pallet tie down ring, and run strap over outside handle, wrap once around center handles, strap over outside handle. Attach the hook end of the tie-down device to the tie down ring. Remove slack from strap webbing and ratchet the device. Repeat process at other end of litter. Ensure ratchets have a minimum of 1½ turns of webbing around the spindle.

10.3.6.5. Three Litters: Use one tie-down device at each end of the litter. Connect one end of the ratchet device to the pallet tie down ring. Pass over first handle, wrap center handles, and pass strap over last handle. Attach the hook end of the tie-down device to the tie down ring. Ensure ratchets have a minimum of 1½ turns of webbing around the spindle.

Figure 10.2. KC-46 Litter Floor Loading Example.

10.3.7. KC-46 Patient Planning Factors. The MCD/CMT are responsible for the AE configuration of the aircraft. Modifications or deviations from standard configurations require coordination with BO and PIC **(Table 10.1)**. **WARNING**: Rollers in all walkways will be removed from floor to prevent tripping hazards. **(T-2)** For current AE configurations onboard the KC-46. (See Figures **10.3** through **10.7**).

Table 10.1. AE Configuration of KC-46 Aircraft.

LITTER SPACES	AE-1	AE-2 (Note 5) (LSAS)	AE-3-(Note 6) (Floor Load)	AE-4 (Note 6) (PSP)
Total Spaces	6	15	21	12/24
AE Equipment (Note 1)	Floor Load (Pallet)	1	1	1
Emergency Litter	Floor Load (Pallet)	1	1	1
Critical Care Air Transport Team (CCATT) (Note 1&2)	2	3	3	3
Actual Spaces (Note 2)	6	13	19	10/22
SEATS	AE-1	AE-2	AE-3	AE-4

Total Seats	10	32	10	20
AE Crew (Note 3)	8	8	8	8
CCATT Crew	3	3	3	3
BO	2	2	2	2
Actual Seats (Note 4)	0	22	0	10

Notes:
1. AECMs and specialty teams will ensure additional equipment/bags are floor loaded on a blank pallet unless space is available in litter tiers. **(T-2)**
2. Actual litter spaces may decrease based upon patient requirements and equipment. AECMs will carry an emergency litter on all AE missions. **(T-1)** CCATT vented patients require one litter tier (three litter spaces). Non-vented CCATT patients do not require an entire litter tier unless equipment prohibits loading of additional patients in the same litter tier. There are no provisions for a crew member to sit next to their patient during takeoff and landing. If necessary, secure crewmember in accordance with guidance in the AFMAN11-2AEV3.
3. AE and CCATT seats are based on primary crew complement. In the event space allows, each AECM should be given one seat for emergency equipment stowage. If space is limited, the MCD/CMT and the 2nd flight nurse/2nd aeromedical evacuation technicians should share one seat for equipment stowage. The 3rd aeromedical evacuation technicians should have one seat to store equipment.
4. Actual seats may decrease based on crew complement, mission requirements and patient load.
5. For missions with specialty teams, a single patient support pallet (PSP) may be placed in position 5C for use with AE-2 configuration. The PSP allows specialty teams to be closer to their patients and provides a location to secure specialty teams equipment such as incubators and H-tanks.
6. AE-3 and AE-4 are not approved for use until further guidance from A3VM and A3VK.

Figure 10.3. KC-46 AE-1 (Integral Litters + Pallets).

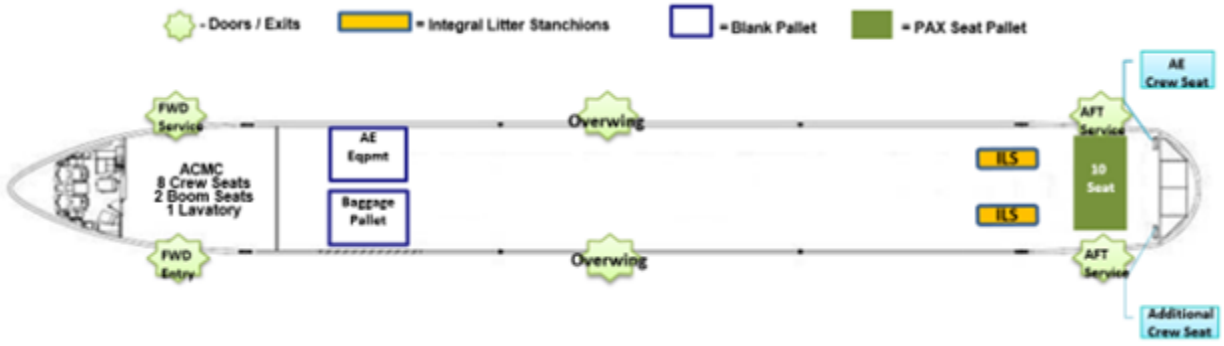


Figure 10.4. KC-46 AE-2 (LSAS).

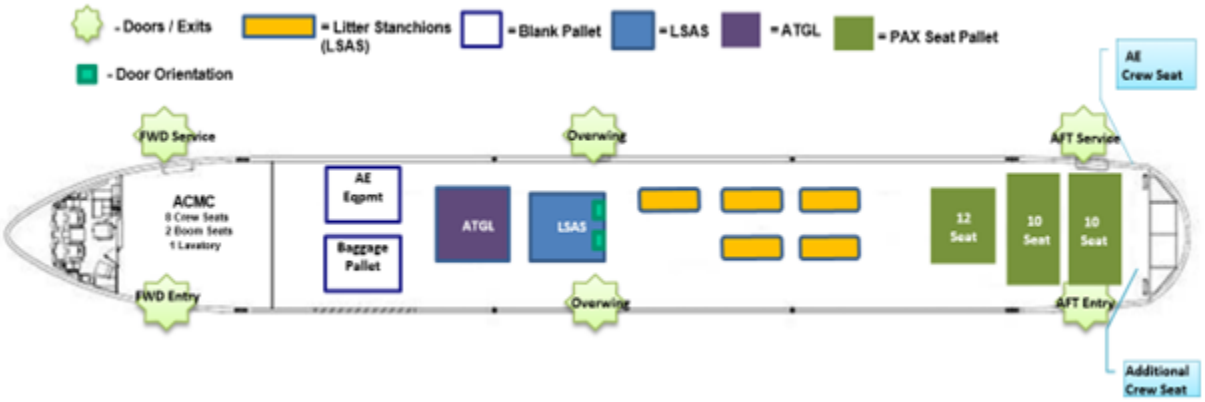


Figure 10.5. KC-46 AE-2 (LSAS + PSP).

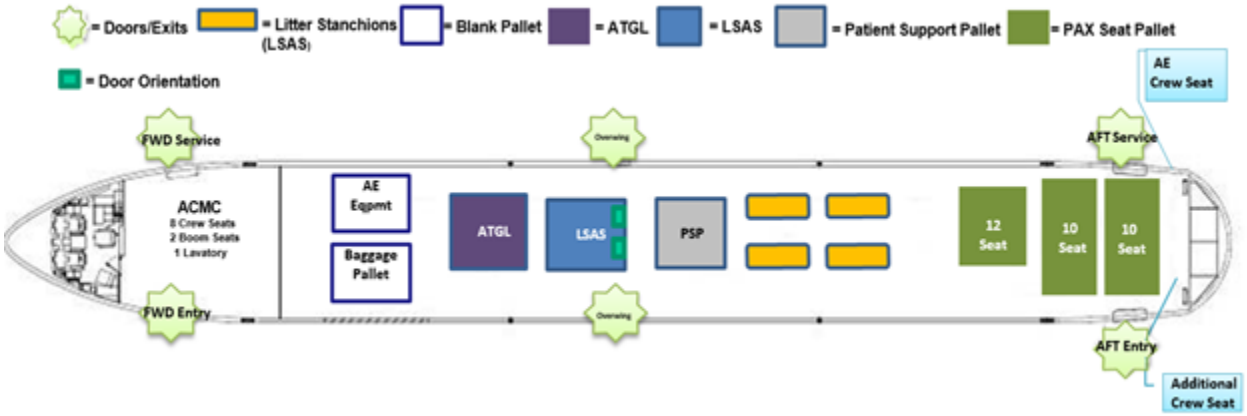


Figure 10.6. KC-46 AE-3 (Floor load).

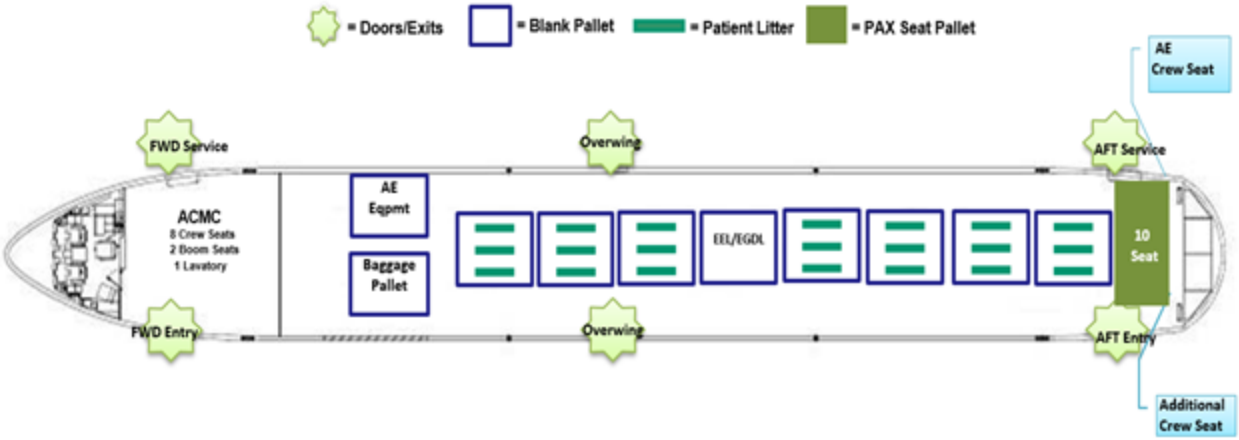
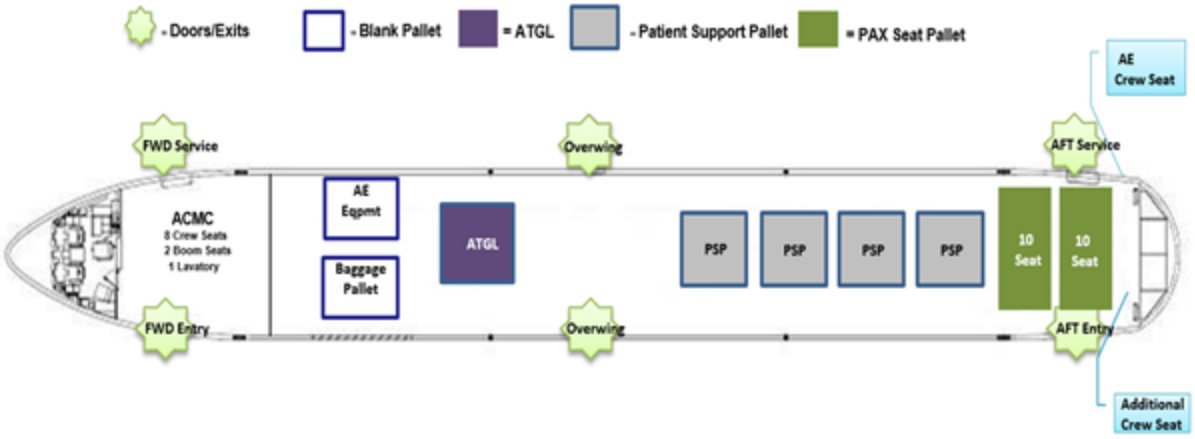


Figure 10.7. KC-46 AE-4 (PSP).



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Attachment 1

GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION

References

AFI 11-2AE Vol 3, *Aeromedical Evacuation (AE) Operations Procedures,* 15 Aug 2014

AFI 33-360, *Publications and Forms Management,* 1 Dec 2015

AFI 33-322, *Records Management and Information Governance Program*, 23 March 2020

AFMAN 11-2C-130J Vol 3 ADDENDA A, *C-130J Operations Configuration/Mission Planning*, 19 Dec 2019

AFMAN 11-2C-17 Vol 3 ADDENDA A, *C-17 Configuration and Mission Planning,* 08 Aug 2018

AFMAN 11-2KC-135 Vol 3 ADDENDA A, *C/KC-135 Aircraft Configuration*, 07 Jan 2020 AFI 11-215, *Flight Manuals Program (FMP),* 25 Mar 2019

AFMAN 11-301, Vol 2, *Management and Configuration Requirements for Aircrew Flight Equipment (AFE),* 13 February 2020

AFMAN 24-204, *Preparing Hazardous Materials for Air Shipments,*13 July 2017, Change 1, 24 July 2018

AFPD 11-2, *Aircrew Operations,* 31 Jan 2019

DAFI 48-107V1, En Route Care and Aeromedical Evacuation Medical Operations, 15 December 2020

TO 1C-17A-1, *Flight Manual,* 1 April 2019

TO 1C-17A-9, *Loading Instructions,* 1 Jun 2017, Change 4, 01 Nov 2019

TO 1C-130A-9, *Cargo Loading Manua*l, 04 September 2018

TO 1C-130J-9, *Cargo Loading Manual*, 01 July 2019

TO 1C-21A-1, *Flight Manual,* 1 Oct 2007, Change 7, 31 Dec 2017

TCTO 1C-135-1806, *Installation of Aero-Medical Power Outlets on KC-135 R/T GATM Aircraft*

Adopted Forms

AFTO Form 244, *Industrial/Support Equipment Record*

AFTO Form 781A, *Maintenance Discrepancy and Work Document*

AF Form 847, *Recommendation for Change of Publication*

DD Form 1149, *Requisition and Invoice/Shipping Document*

AF Form 673, *Air Force Publication/Form Action Request*

AFTO Form 350, *Repairable Item Processing Tag*

Abbreviations and Acronyms

ACP—Audio Control Panel

ACMC—Aircrew Member Compartment

AE—Aeromedical Evacuation

AEC—Aeromedical Evacuation Crew

AECM—Aeromedical Evacuation Crewmember

AECT—Aeromedical Evacuation Control Team

AFI—Air Force Instruction

AFMAN—Air Force Manual

AMC—Air Mobility Command

AOC—Air Operations Center

AROS—Air Refueling Operator Station

BO—Boom Operator

CCATT—Critical Care Aeromedical Transport Team

EPOS—Emergency Passenger Oxygen System

GDSS—Global Decision Support System

ICAO—International Civil Aviation Organization

IV—Intravenous

LM—Loadmaster

LPU—Life Preserver Unit

LSAS—Litter Station Augmentation Set

MAJCOM—Major Command

MCD—Medical Crew Director

MDCC—Main Deck Cargo Compartment

NPTLOX—Next Generation PTLOX

PACAF—Pacific Air Forces

PBE—Protective Breathing Equipment

PIC—Pilot in Command

PLS—Patient Loading System

PSP—Patient Support Pallet

PTLOX—Portable Therapeutic Liquid Oxygen System

SLS—Stanchion Litter System

SPINs—Special Instructions

TO—Technical Order

USAFE—United States Air Forces in Europe

Terms

Aeromedical Evacuation (AE)—The movement of patients under medical supervision to and between medical treatment facilities by air transportation. (Joint Pub 4-02)

Aeromedical Evacuation Crew Members (AECM)—Qualified flight nurses, aeromedical evacuation technicians, and unqualified student trainees under the direct supervision of a qualified instructor or flight nurse, performing AE duties.

Aircrew Flight Equipment—The AFE program encompasses the support of male and female aircrew, used to describe the personnel and equipment related to the specialty's core mission and customers. AFE enhancing male and female aircrew and operator performance, and protecting and sustaining human life during operations.

Passenger—Individual aboard aircraft for the purpose of transportation.

Shoring—Plywood, board, or planking on the cargo floor or pallet to spread the load over a larger area or to prevent damage

Theater—The geographical area outside the continental United States for which a commander of a combatant command has been assigned responsibility.