

CHAPTER 16

HIGH-PERFORMANCE TRANSPORT AIRCRAFT

The C-5, MC/C-130, and C-141 are US Air Force high-performance aircraft for paratroop drops. These high-performance transport aircraft, provided by the USAF are configured to meet the needs of the unit mission request. These configurations are termed tactical airdrop personnel (ZAP) for the C-130 and the C-141 in USAF publications. The initial JA/ATT mission request from the airborne unit determines aircraft configuration. The USMC version of this aircraft is the KC-130; characteristics and parachute procedures are similar

- *Tactical mass airdrop (both jump doors)—full seating configuration,*
- *In-flight rigging-tactical mass airdrop (both doors)—full seating configuration; comfort pallet with/without litters.*
- *Other load considerations-combination of air-land and airdrop mission; single door—reduced seating configurations.*
- *Over-the-ramp—combination equipment and personnel.*

Section I

C-130 HERCULES

The C-130 (Figure 16-1) is a medium-range, high-wing transport aircraft powered by four turboprop engines. Parachutists may be dropped using either the two jump doors or the ramp. (See note reference over-the-ramp operations at paragraph 16-3.) The TAP configurations for the C-130 are shown in Figure 16-1.

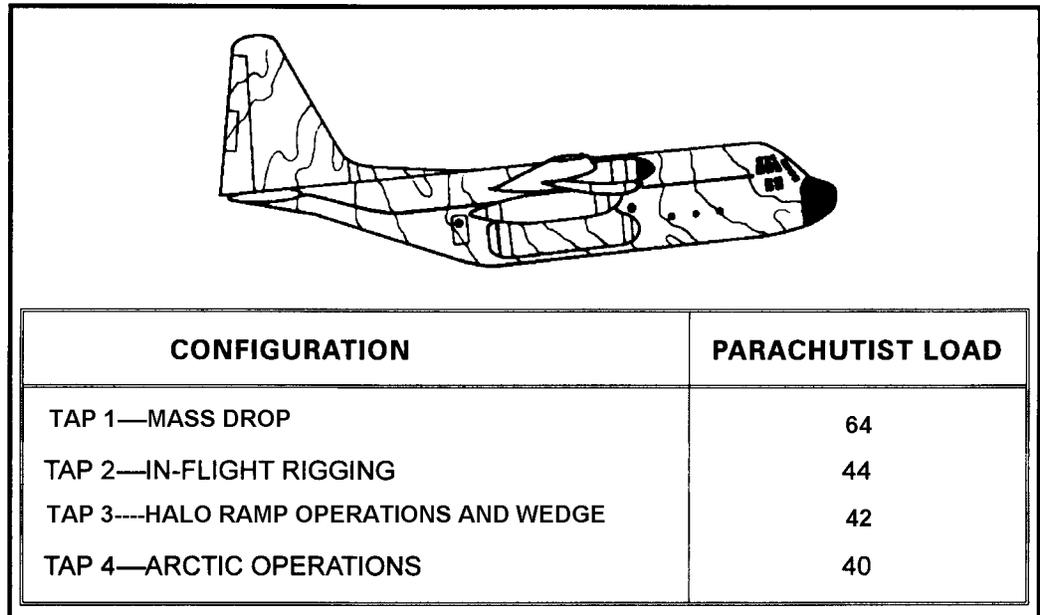


Figure 16-1. C-130 Hercules.

16-1. SEATING CONFIGURATION

The seating configuration for the C-130 Hercules is as follows:

a. **Peacetime Training (TAP 1).** A total of 64 parachutists can be seated in two sticks of 32. Numbers 1, 2, and 3 are seated outboard aft of the wheel well; 4 through 23 are seated on the inboard seats; and numbers 24 through 32 are seated outboard forward on the wheel well (Figure 16-2). Jumpers are normally loaded over the aft end loading ramp.

b. **Supervisory Personnel Required.** Six personnel supervise parachutists and ensure safety measures are followed.

- One PJM.
- One AJM.
- Two safety personnel.
- Two airdrop certified loadmasters.

c. **Jump Commands.** Jump commands are given in the following sequence:

- GET READY.
- OUTBOARD PERSONNEL, STAND UP.
- INBOARD PERSONNEL, STAND UP.
- HOOK UP.
- CHECK STATIC LINES.

- CHECK EQUIPMENT.
- SOUND OFF FOR EQUIPMENT CHECK.
- STAND BY.
- GO.

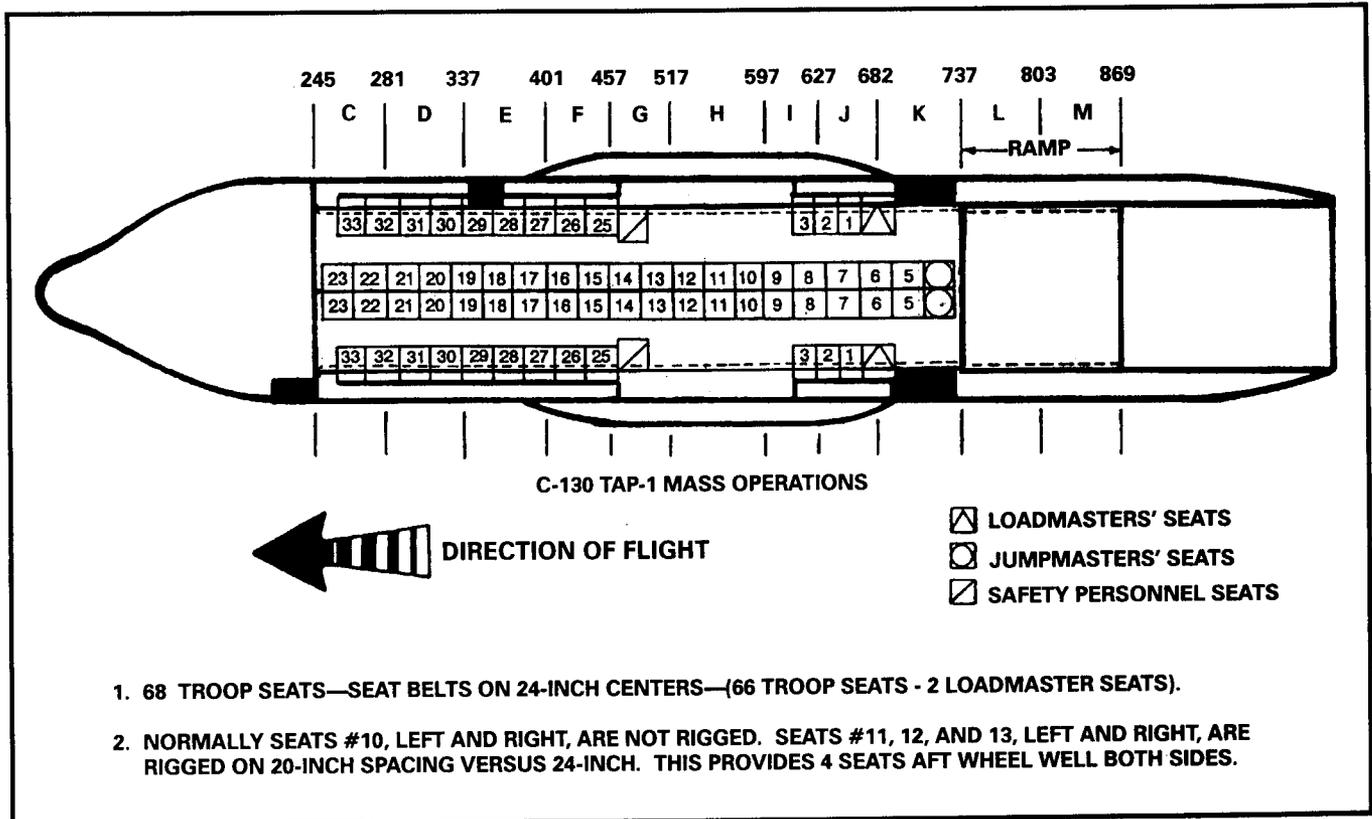


Figure 16-2. C-130 seating configuration.

16-2. IN-FLIGHT RIGGING PROCEDURES

In-flight rigging procedures include the following:

a. **Personnel.** These procedures provide in-flight rigging for the airdrop of 44 personnel (with equipment) including one PJM and four AJMs. Three AJMs are designated from the parachutists on board to assist in rigging. Two nonjumping safety personnel are also required.

b. **Briefing.** All parachutists must be briefed and rehearsed on their actions before executing this type mission. The preferred method for in-flight rigging is *buddy rigging*. This allows faster rigging and reduces parachutists' movement in the aircraft. The other method, station rigging, is seldom used. (See paragraphs 16-2e and f.)

c. **Aircraft Configuration.** The aircraft is TAP 2 configured to seat a total of 48 personnel to include 2 loadmasters, 2 nonjumping safeties, and 44 parachutists (Figure 16-3).

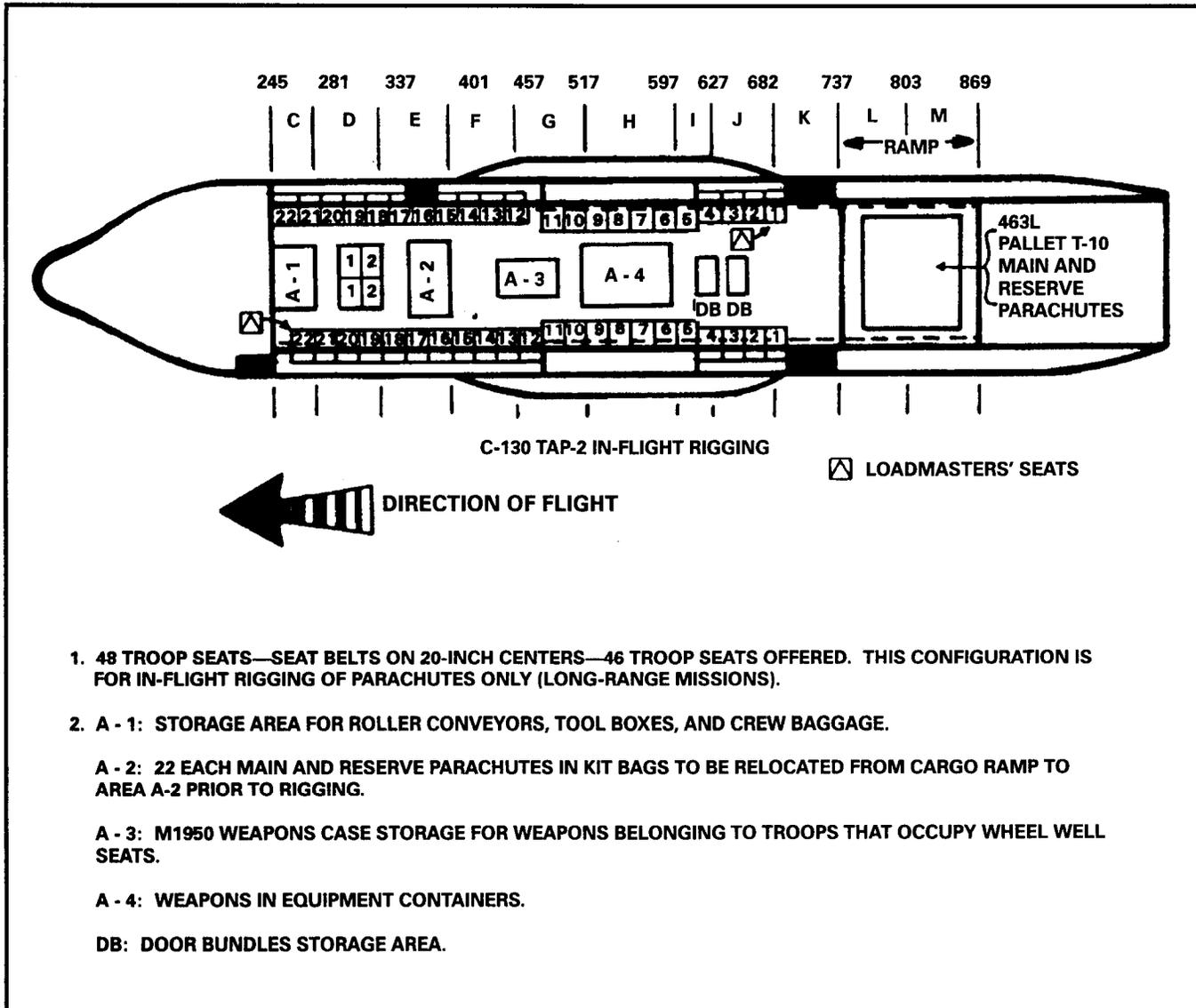


Figure 16-3. C-130 configuration for in-flight rigging (48 seats).

d. **Storage of Equipment.** Storing equipment involves the following:

- (1) Forty-four parachutes and reserves, in kit bags, are palletized (covered with a cargo net or tie-down devices) on the ramp.
- (2) Door bundles are placed in the center aisle just forward of the ramp.

(3) CWIEs and DMJPs are placed in the center aisle just forward of the door bundles.

(4) M1950 weapons cases should be placed behind individual seats. Weapons cases for personnel occupying wheelwell seats are placed on the floor at Station 477.

(5) Individual equipment should be placed under seats or, if too large, may be placed in the center aisle forward of the CWIEs and DMJPs.

(6) All equipment placed in the center aisle must be secured.

e. **Buddy Rigging.** Buddy rigging begins 2 hours and 20 minutes before drop time. Rigging must be completed by the 20-minute warning.

(1) The main and reserve parachutes, with kit bags, are passed forward until each man has a parachute. Once everyone has his parachute, buddy rigging begins under the supervision of the JMs, designated JM qualified parachutists, and safety personnel. Each parachutist must know who his rigging partner is.

(2) Once a parachutist is rigged, he sits down and waits to be inspected by one of the JMs. The safety personnel serve as roving correction inspectors. The attachment of the static line snap hook to the top carrying handle of the reserve signifies an inspected parachutist.

(3) The PJM supervises the entire rigging operation and assists, as needed.

(4) Once all the parachutists have been inspected, the JMs rig up and safety personnel inspect them.

Other JM qualified parachutists maybe used to speed up the rigging process.

f. **Station Rigging.** One rigging station is established forward of the jump doors; another station is established forward in the cargo compartment. The forward station is manned by a safety and the AJM. As the forward rigging station is established, 22 parachutes (in kit bags) are passed forward to the safety personnel. One JM kit bag must be present at each station.

(1) Starting in the center of the stick, two parachutists (one on each side of the aircraft) pick up their combat equipment. Each jumper moves to the designated rigging station to don the parachute and equipment, assisted by the safety.

(2) When completely rigged, the parachutist moves to the AJM (stationed nearby) for inspection. The AJM attaches the static line snap hook to the top carrying handle of the reserve parachute when he reaches that portion of the inspection sequence. Only the PJM or AJM removes the snap hook from the reserve before the command HOOK UP, since this indicates that the jumper has received JMPI.

(3) After JMPI, the jumper returns to his proper seat (or stick position). To ensure minimum time loss, the next parachutist is waiting to be rigged by the safety personnel.

16-3. OVER-THE-RAMP OPERATIONS

These procedures provide for over-the-ramp airdrop of 40 personnel including one PJM, one AJM, and two nonjumping safety personnel (Figure 16-4).

NOTES:

1. IAW message Headquarters, USAF AMC, DTG 021431Z MAY 1990, subject: C-130 Tailgating; over-the-ramp C-130 airdrop operations are restricted “to combination airdrops, tests requiring over-the-ramp operations to satisfy a specific objective, jumpers required to jump with snow skis, support for special operations forces training, MC- 130, pathfinder and SOLL II operations.” SOF were defined as “USA Special Forces (Green Berets), Ranger units and Ranger Training Brigade, Navy Seals, USAF Combat Control Teams, Pararescue Teams, and those assigned to special tactics units.” Message further stated, “These forces will continue to train for over-the-ramp operations which is their normal method for deployment.”
2. IAW message Headquarters, USAF AMC, DTG 111345Z JUL 1991, subject: Authorization of Arctic Equipped Parachutists to Tailgate; authorization was granted “to allow arctic equipped parachutists with large field pack and/or skis to tailgate from C-130 aircraft.” (Large field pack mentioned in message DTG 111345Z JUL 1991 is the FPLIF.)
3. IAW letter CG, Marine Corps Combat Development Command C42 over 5600, dated 22 August 1995, USMC Force Reconnaissance and Air Naval Gunfire Liaison Company (ANGLICO) personnel are authorized to conduct C-130 over-the-ramp parachute operations if required by their mission. These units train for over-the-ramp parachute operations as a normal method of employment.
 - a. **Equipment Drop.** Over-the-ramp operations can include the combination of an equipment drop followed by parachutists. Equipment is defined as heavy equipment rigged for airdrop, or equipment packaged and contained in the A-7A or A-21 containers. Parachutists may be dropped over the ramp without an equipment drop (maximum of 20 parachutists for each pass).
 - b. **Aircraft Operation.** The anchor line cables (only two are used—one on each side) are rigged from the forward outboard anchor line cable attachments to the aft inboard anchor line cable attachments. The anchor line cable stop (a clevis, padded and taped) must be installed on the anchor line cable (20 inches aft of the center anchor line cable support bracket). The center anchor line cable support brackets at the door are disconnected and secured at the top of the fuselage. The static line retriever cables are tied or taped to the sides of the fuselage aft of the doors to ensure that they remain secured.

c. **Jump Commands.** Jump commands are given in the following sequence:

- GET READY.
- STAND UP.
- HOOK UP.
- CHECK STATIC LINES.
- CHECK EQUIPMENT.
- SOUND OFF FOR EQUIPMENT CHECK.
- STAND BY. Parachutists maintain a reverse bight in the static line while maintaining balance with the hand nearest the aircraft fuselage.
- GO. On the command GO, movement onto the ramp is a normal walking or shuffle pace. Exits are made at an angle of about 30 degrees toward the side of the aircraft and are not vigorous. Parachutists place their hands on the ends of their reserve parachute prior to exit.

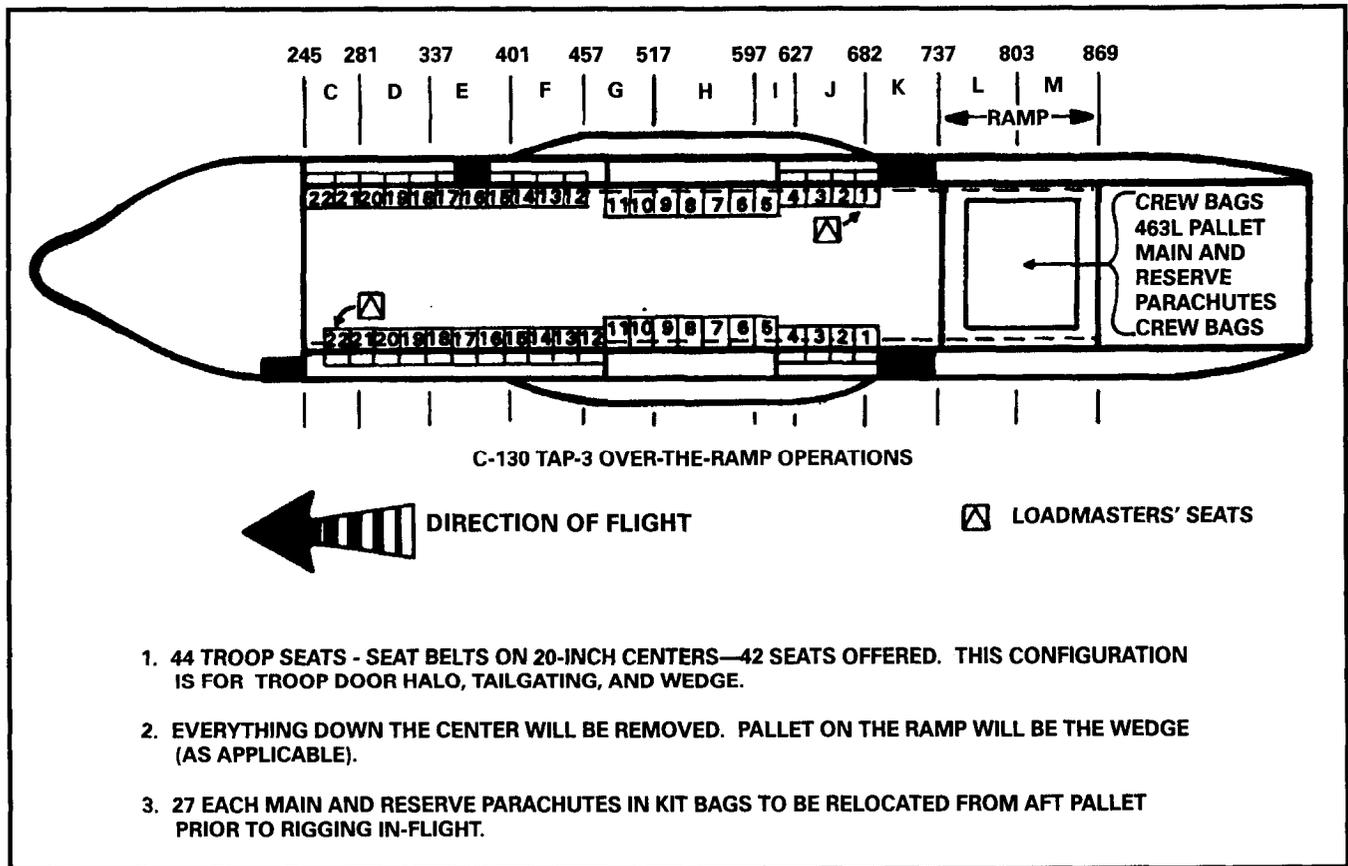


Figure 16-4. C-130 configuration for over-the-ramp operations.

d. Jump Procedures. If the PJM and AJM elect to jump, they will be the number 1 parachutist of each stick. Therefore, the safeties control the flow of the parachutists.

(1) An oral 10-minute warning is given, and the JM begins the jump commands. Prior to the 10-minute warning, the JMs hookup to the anchor line cable, hand the static line to the safety, and announce, SAFETY, CONTROL MY STATIC LINE. The PJM then issues the jump commands. The same sequence of jump commands and the same procedures are used for the door and ramp.

(2) Jumpers hook up to the appropriate anchor line cable with the open side of the snap hook facing outboard toward the skin of the aircraft. They maintain a reverse bight (Figure 16-5).

(3) Door check is not required. If using GMRS, the PJM must spot the ground marking from the left side of the ramp.

(4) After giving the command STAND BY, the JM moves to the center edge of the ramp and exits on green light. The safety positions himself immediately behind the hinged portion of the ramp and controls the flow of parachutists.

(5) Each parachutist walks off toward the center of the ramp at an angle away from the anchor line cable (Figure 16-6).

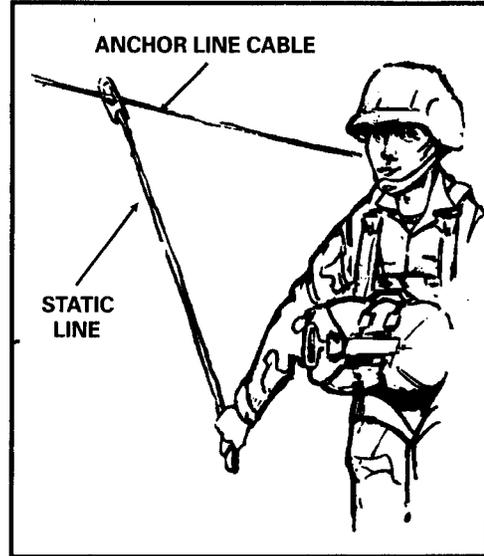


Figure 16-5. Static line grasped with reverse bight.

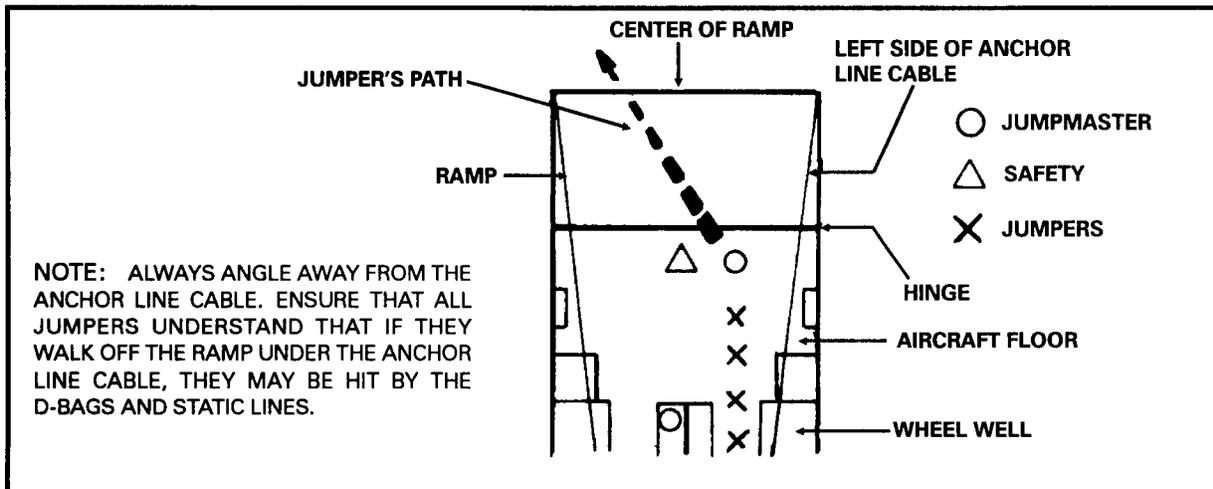


Figure 16-6. Personnel locations.

16-4. COMBAT CONCENTRATED LOAD SEATING CONFIGURATION

A maximum of 80 parachutists can be dropped when these procedures are used for wartime emergency operations. Concentrated parachutist loading is used when not enough C-130 and C-141B aircraft are available. Combat procedures reduce individual space inside the aircraft; crowded conditions restrict freedom of movement and present potential hazards if not supervised. Flight time beyond 1.5 hours may intensify adverse effects on parachutists. Data and seating schematics are included under appropriate aircraft titles. When the sticks are over 40 parachutists for each pass, additional safety personnel maybe used to complete required safety inspections within the time warnings.

a. **Supervisory Personnel Required.** Six personnel supervise parachutists and ensure safety measures are followed.

- One PJM.
- One AJM.
- Two (jumping) safety personnel.
- Two loadmasters.

b. **Loading Procedures and Seating Arrangement.** The aircraft is configured to provide 19 outboard seats and 21 inboard seats with seat belts installed on 20-inch centers (Figure 16-7).

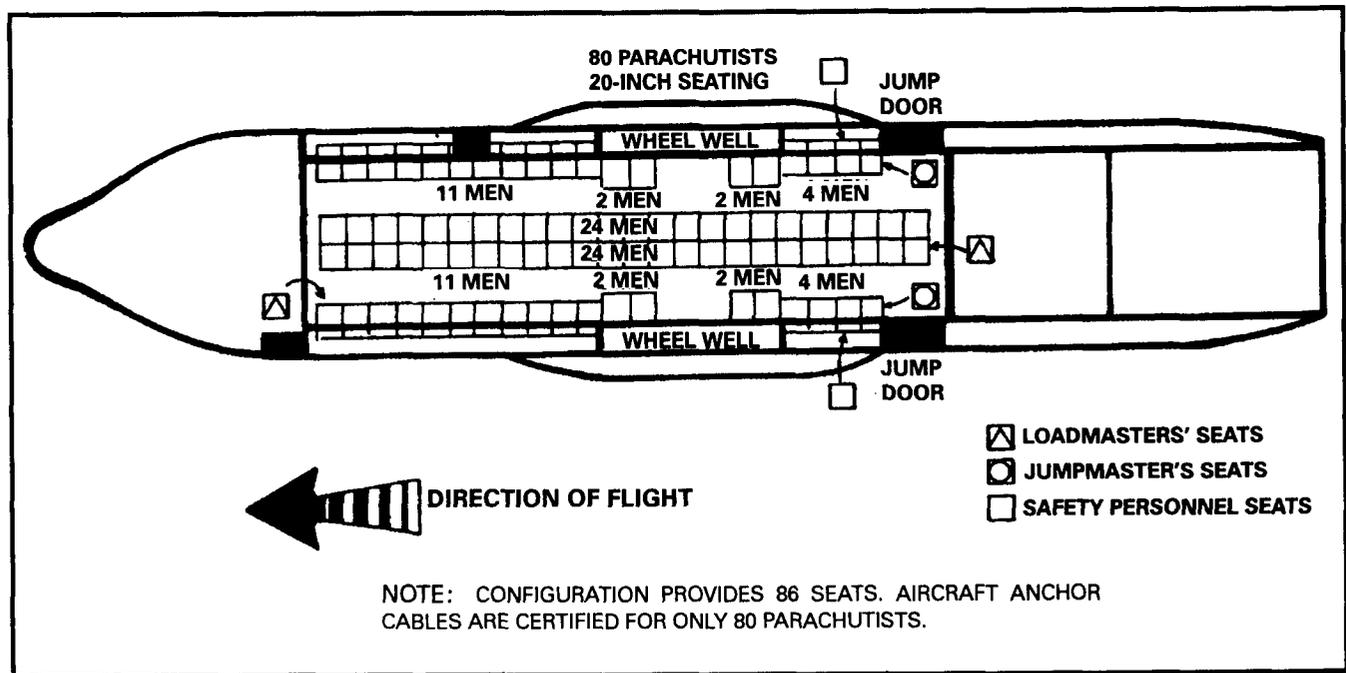


Figure 16-7. C-130 combat concentrated load.

(1) Jumpers are loaded through the aft end loading ramp and seated in two sticks of 40 jumpers each. Before entering the aircraft, all jumpers release equipment leg safety straps so they can lift their equipment over the seats. These safety straps are retied when the jumper is seated with seat belt in place.

(2) Each jumper must be assisted in seating by the AJM or safety personnel. They ensure that jumpers select the correct seat belt and that it is properly fastened.

NOTE: Parachutists sitting in outboard wheel well seats must place their knees forward or aft in the space of the raised seat. The area is not spacious enough to allow inboard or outboard parachutists to face each other.

c. **Jump Procedures.** The jump procedures for the C-130 remain the same with the following exceptions:

(1) The 30-minute warning replaces the 20-minute warning, and the 15-minute warning replaces the 10-minute warning.

(2) On the command STAND UP, inboard parachutists stand up and then stand on their seats, supporting themselves by grasping the center stanchion seat support rail. They remain in this position until outboard parachutists stand up and raise and secure their seats in the up position. On the command GET DOWN, inboard parachutists step off their seats, then raise and secure them in the up position. Standard jump commands are then resumed.

(3) On the command HOOK UP, no more than 20 parachutists hookup and exit on any single anchor line cable.

(4) When the command GO is given, outboard personnel exit in numerical sequence, followed by inboard personnel.

d. **Safety Procedures.** The standard safety procedures for the C-130 apply, with the following changes:

(1) Concentrated parachutist loading is used only for wartime emergency operations. It allows the maximum number of combat troops to jump. This includes parachutists designated as safety personnel who conduct inspections before donning their equipment, which allows them to move freely about the aircraft. This inspection begins at the 30-minute warning to allow the safeties time to don their parachutes.

(2) Parachutists jumping with equipment containers are seated aft of the wheel well in outboard seats; the equipment containers are stowed on the aircraft ramp. Jump rigging of containers begins at the 30-minute warning.

(3) During movement in the aircraft and execution of jump commands, each parachutist protects the reserve parachute rip cord grip to prevent activation of the reserve inside the aircraft.

(4) Execution of jump commands begins at the 15-minute warning. This allows for more time to stow all seats and to ensure that no more than 20 parachutists are hooked on a single anchor line cable.

(5) When preparing for airborne operations, JMs should provide latrine facilities. To minimize individual movement during flight, jumpers are encouraged to use the latrine before boarding the aircraft.

16-5. C-130 JUMPMaster CHECKLIST

The JM inspects the aircraft for the following:

a. Seats.

- Enough seats are available for troop load.
- All seats have safety belts.
- Seat backs are secured.
- Seats are not torn.
- No seat projections are present.
- Seat legs are locked into floor.
- Diagonal leg brace is attached in each set section (if required).
- Seats along the wheel well are removed (if required).

b. Floor.

- Nonskid covering is in good condition.
- Floor is clean and safe to walk on.
- All cargo compartment roller conveyors and dual rail system floor sections are removed when jumping the door.
- Loose equipment is lashed and does not interfere with movement or comfort.

c. Jump Platform.

- Nonskid surface is present.
- No cracks or bends are present.
- Hinge plate slots are engaged by tie-down studs and screw (with washer) so that the hinge fittings do not slide off the tie-down studs. When the screw and washer are missing, the hinge plate must be safety wired with four turns of stainless steel wire to the tie-down ring bracket.
- Two spring-down lock catches engage the edge of the door.
- Clutch mechanism is present on the spring-down lock catches.

d. Jump Doors.

- No excessive grease is on the door tracks.
- No sharp edges or protrusions are on door frames.

- Pip pin in top, forward edge of door frame is present.
- Auxiliary hydraulic ramp pump handle is secured (after takeoff).
- Doors open and close easily. (Doors are operated in flight by aircrew members.)

e. Air Deflectors.

- No sharp edges are on trailing edge.
- Deflectors operate electrically.
- No items or trash are stored in wells.

f. Jump Caution Lights. (Check all seven sets for operation.)

- Set 1—crew entrance door.
- Sets 2 and 3—top leading edges of right and left doors.
- Sets 4 and 5—trailing edges of right and left doors, waist high.
- Sets 6 and 7—right and left anchor cable aft supports.

g. Anchor Cable System.

(1) Forward support beam.

- Four U-bolts, with self-locking nuts or nuts with cotter pins, are attached.
- Anchor cables are attached to first and second U-bolts right and left of center line for personnel jump.
- Forward latch assembly is in the locked position and secured with locking pins.

(2) Anchor cable.

- No breaks (within acceptable tolerances of TO 1C-130A-9), frays, or kinks exist.
- Cable is clean and free of rust.

(3) Anchor cable intermediate center support.

- Cables run through slots after ramp is closed.
- Quick-release retaining pins are present.

(4) Anchor cable aft support.

- Aft latch assembly is closed.
- U-bolts, nuts, and safety pins are present.
- Support anchor bolts, nuts, and safety pins are present.

(5) **Static line retrievers.**

- Motor is operational.
- Retriever cables are not broken (within acceptable tolerances of TO 1C-130A-9), frayed, kinked, dirty, or rusty.
- Spool clamp and shackle are attached forward of intermediate cable support and are tied to support with two turns of ¼-inch cotton webbing.
- Retriever cables are secured with two turns of ¼-inch webbing to litter brackets at station 627. If cable clips are installed on the wheel well, the tie at station 627 is not used. (Retriever cable must be at least 4 inches above the anchor line cable.)

h. Emergency Equipment.

- First aid kits (4) are present.
- Fire extinguishers (3) are present.
- CGU1-B cargo tie-down straps (2) (for retrieval of towed parachutists) are present.
- Alarm system is operational.
- Emergency exits are operational and accessible.
- Sufficient emergency parachutes are available.

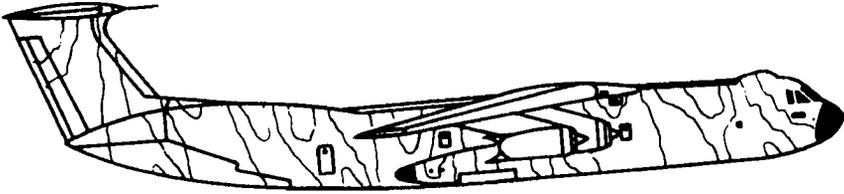
i. Miscellaneous.

- Lighting system is operational.
- airsickness bags are available.
- Comfort facilities are available.
- JM kit bag (extra equipment) is on board.

Section II C-141B STARLIFTER

The C-141B (Figure 16-8, page 16-14) is a swept-wing, long-range transport powered by four turbofan jet engines and equipped for in-air refueling. The aircraft can be configured in different peacetime troop-carrying modes for airborne operations. Parachutists jump from the

two aft doors of the aircraft. The TAP configurations for the C-141B are shown in Figure 16-8.



TACTICAL TRAINING	
CONFIGURATION	PARACHUTIST LOAD
TAP 1—WITHOUT COMFORT PALLET	152
TAP 2—IN-FLIGHT RIGGING WITH COMFORT PALLET	130
COMBAT OPERATIONS	
CONFIGURATION	PARACHUTIST LOAD
CONCENTRATED LOADING	180
NOTE: THE C-141B IS NOT USED FOR PERSONNEL JUMPING (STATIC LINE) OVER THE RAMP.	

Figure 16-8. C-141B Starlifter.

16-6. SEATING CONFIGURATION WITHOUT COMFORT PALLET

The seating configuration for the C-141B is as follows:

a. **Peacetime Training (TAP 1).** In this configuration, the C-141B seats 156 personnel: 152 parachutists, 2 static safety personnel, and 2 airdrop qualified loadmasters (Figure 16-9). The maximum number of personnel for each anchor cable is 45.

b. **Supervisory Personnel Required.** Six personnel supervise parachutists and ensure safety measures are followed.

- One PJM.
- One AJM.
- Two static safety personnel.
- Two airdrop qualified loadmasters.

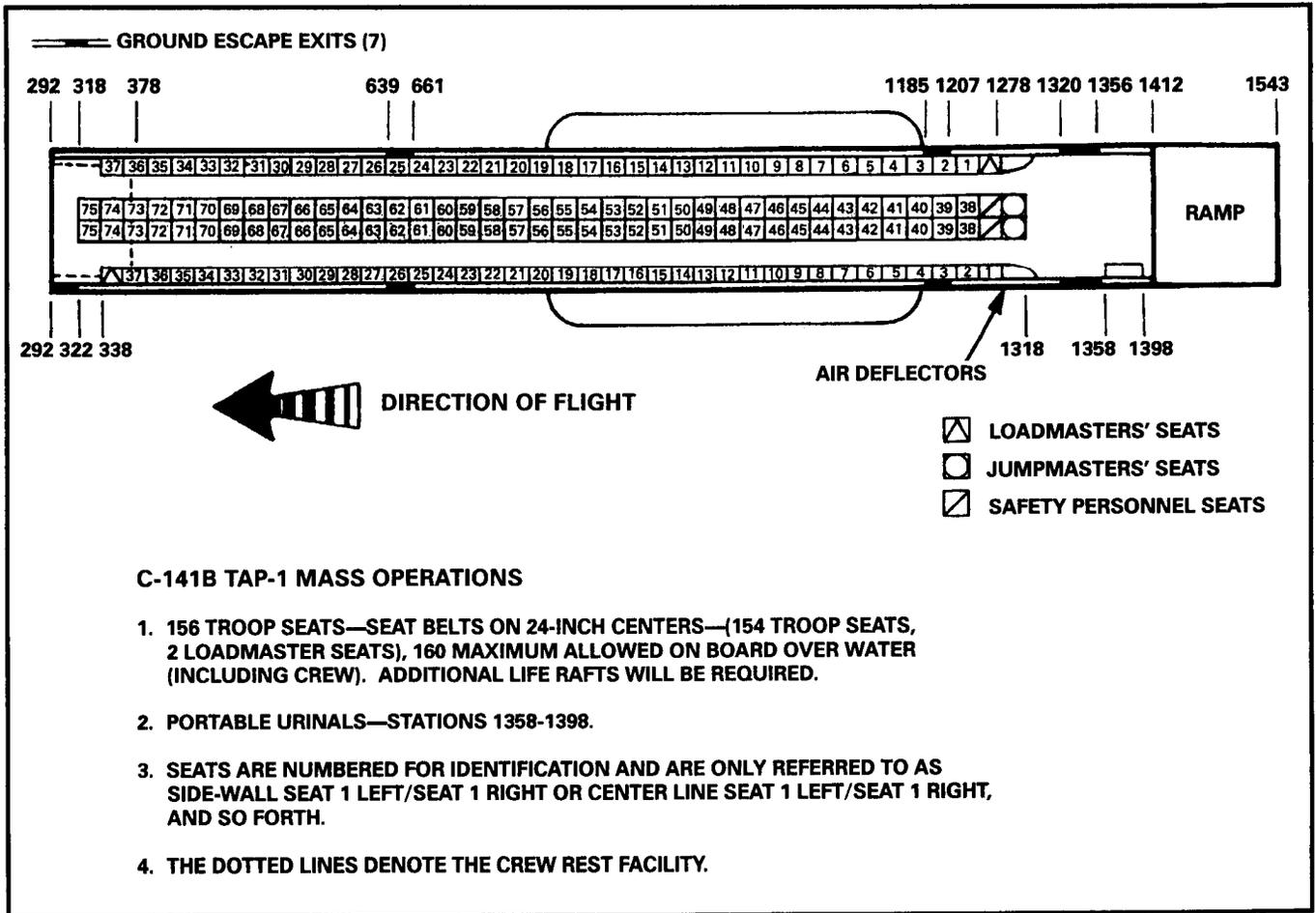


Figure 16-9. C-141B seating configuration without comfort pallet.

c. Time Warnings. Time warnings include the following:

(1) The 20-minute warning may be increased to 30 minutes to provide enough time for static safety personnel to complete safety checks and to rig equipment containers.

(2) The 10-minute warning may be increased to 15 minutes to allow time for parachutists to release and stow troop seats and for static safety personnel to complete safety checks before the 1-minute warning. Prior to the 10-minute warning, the JMs hook up to the inboard anchor line cable (or anchor line cable if only one is available), hand the static line to the safety, and announce, SAFETY, CONTROL MY STATIC LINE. The PJM then issues the jump commands. If the aircraft is configured with only one anchor line cable, the JMs hook up to the one cable.

d. **Jump Commands.** An oral 10-minute warning is given to the JM by the loadmaster. Emphasis is on using a public address system to give jump commands, since parachutists in the forward end of the cargo compartment may not be able to see JM hand-and-arm signals.

- GET READY.
- OUTBOARD PERSONNEL, STAND UP.
- INBOARD PERSONNEL, STAND UP.
- HOOK UP.
- CHECK STATIC LINES.
- CHECK EQUIPMENT.
- SOUND OFF FOR EQUIPMENT CHECK.
- STAND BY. Parachutists maintain a bight in the static line while maintaining balance with the hand nearest the aircraft fuselage.
- GO. On the command GO, movement into the door is a normal walking pace and exits are not vigorous. Parachutists pass the static line to safety personnel, place their hands on the ends of the reserve parachute, and exit.

e. **Safety Considerations.** Safety personnel are seated aft to aid the JMs, at the 20-minute warning, in positioning door bundles and performing other duties.

(1) Static safety personnel must complete their 20-minute checks and arrive at the forward end of the cargo compartment before the 10-minute warning.

(2) No more than 45 parachutists are hooked to any one anchor cable.

(3) Deployment bags may be trailed between passes on single drop zones, or when dropping on multiple drop zones with less than 10 minutes flight time between drop zones.

16-7. IN-FLIGHT RIGGING SEATING CONFIGURATION WITH COMFORT PALLET

In this TAP 2 configuration, the C-141B seats 134 personnel: 130 parachutists, 2 static safety personnel, and 2 loadmasters. Floor space is provided forward, midway, and aft for stowage of parachute assemblies. Seats are on a 24-inch center (Figure 16-10).

a. **Supervisory Personnel Required.** Fifteen personnel supervise parachutists and ensure safety measures are followed.

- One PJM.
- Six AJM.
- Six safety personnel (two static).
- Two loadmasters.

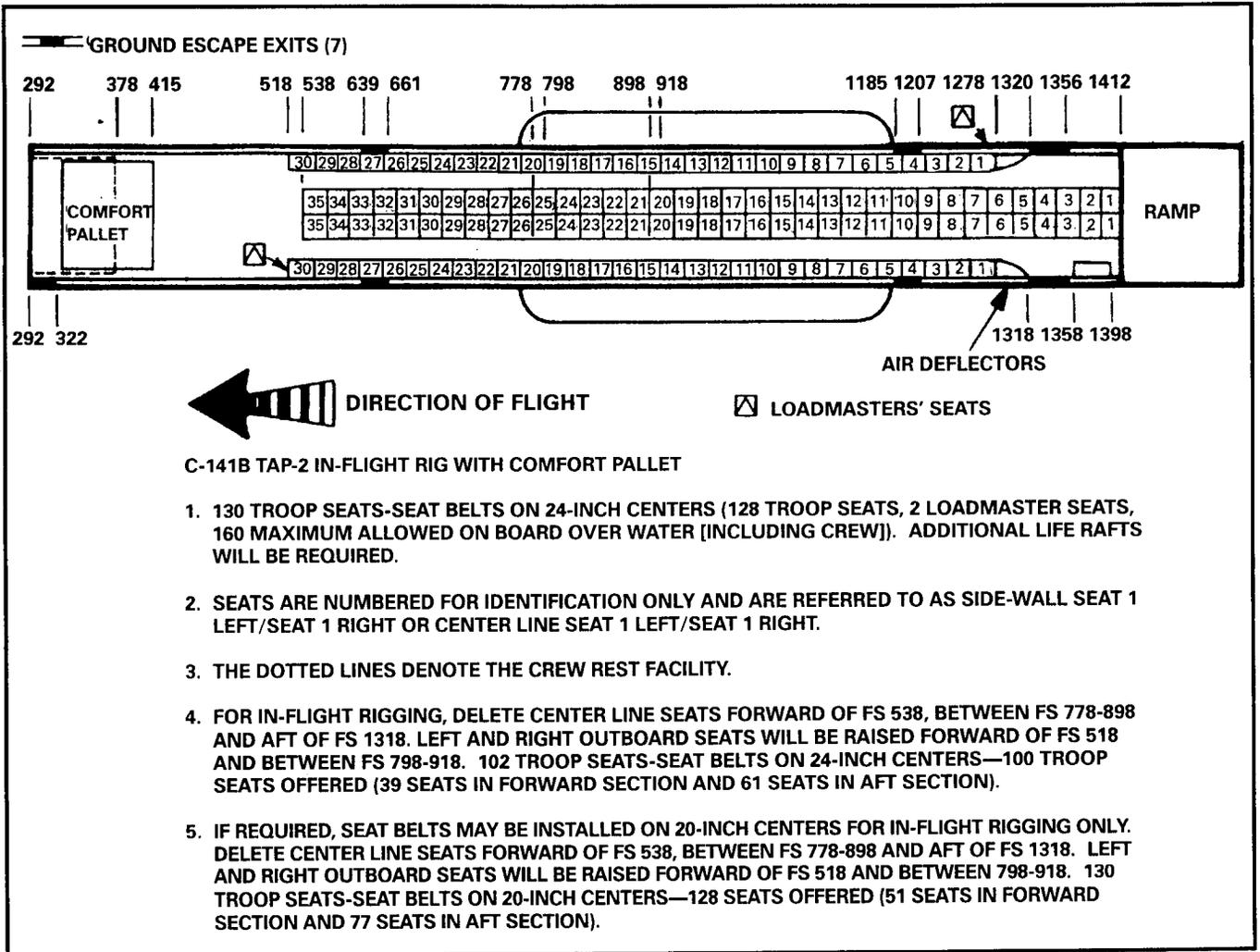


Figure 16-10. C-141B seating configuration with comfort pallet.

b. **Storage of Equipment.** Parachute assemblies (133) are placed in kit bags and stowed and secured in three locations on the cargo floor. There are 130 parachutists seated in two sticks of 65 each on the left and right.

(1) Door bundles are stowed on the cargo ramp.

(2) Individual equipment, web gear, helmets, and ALICE packs are stowed under the troop seats; weapon containers are stowed behind the seats; and individual equipment containers (CWIE, DMJP) are stowed in the aisles or with the parachutes.

(3) One JM kit bag is stowed at each of the six rigging stations (two forward, two midway, and two aft).

c. **Buddy Rigging.** The PJM initiates in-flight buddy rigging 2 hours before the 20- or 30-minute warning. Parachutists unzip the seats, place their equipment on the seats, and sit on top of the equipment. This clears the aisle for the parachutists to stand while buddy rigging.

(1) Parachutes are passed out from each of the three locations until each person has one. Then buddy rigging begins.

(2) Each parachutist must know exactly who he will rig up with. The JMs, safety personnel, and designated JM qualified parachutists supervise. Once a parachutist has been rigged, he sits down and waits to be inspected by one of the JMs.

(3) Safety personnel serve as roving correction inspectors. Attaching the static line snap hook to the top carrying handle of the reserve indicates an inspected parachutist.

(4) The PJM supervises the operation. If there are other currently qualified JMs, they maybe used.

(5) Once all the parachutists have been inspected, the JMs rig up and safety personnel inspect them.

d. **Station Rigging.** Station rigging involves the following:

(1) Six AJMs and six safety personnel (two static and four jumping safety personnel) are required to man the six rigging stations.

(2) Parachutists are divided into three segments and assigned to rigging stations.

(3) The PJM initiates in-flight rigging 2 hours before the 20- or 30-minute warning.

(4) Before initiation of in-flight rigging, jumpers are instructed to unzip the troop seats, place their equipment on the seats, and sit on it. Placing equipment on the seats clears the aisles for jumpers moving to and from the rigging stations.

(5) AJMs and safety personnel at each rigging station stow their seats to provide more rigging space.

(6) Starting with two parachutists from the end of the divided sticks, each parachutist moves to a designated rigging station and is rigged by safety personnel. When completely rigged, the parachutist moves to the AJM (stationed nearby) for inspection. The AJM attaches the static line snap hook to the top carrying handle of the reserve parachute when he reaches that portion of the inspection sequence.

(7) Only the PJM or AJM removes the snap hook from the reserve (before the command HOOK UP) since this indicates that the parachutist has received the JM's inspection.

**16-8. COMBAT CONCENTRATED
LOAD SEATING CONFIGURATION**

In this configuration, the C-141B seats 182 personnel: 180 parachutists and 2 loadmasters (Figure 16-11). Personnel are seated on the side-facing seats on 20-inch centers. Parachutists (180) are seated in two sticks of 90 each on the left and right sides. If 45 parachutists cannot be seated on the outboard seats, the overflow may be seated inboard aft on available center seats. The JM must ensure that only 45 parachutists hookup to the outboard/inboard anchor cables.

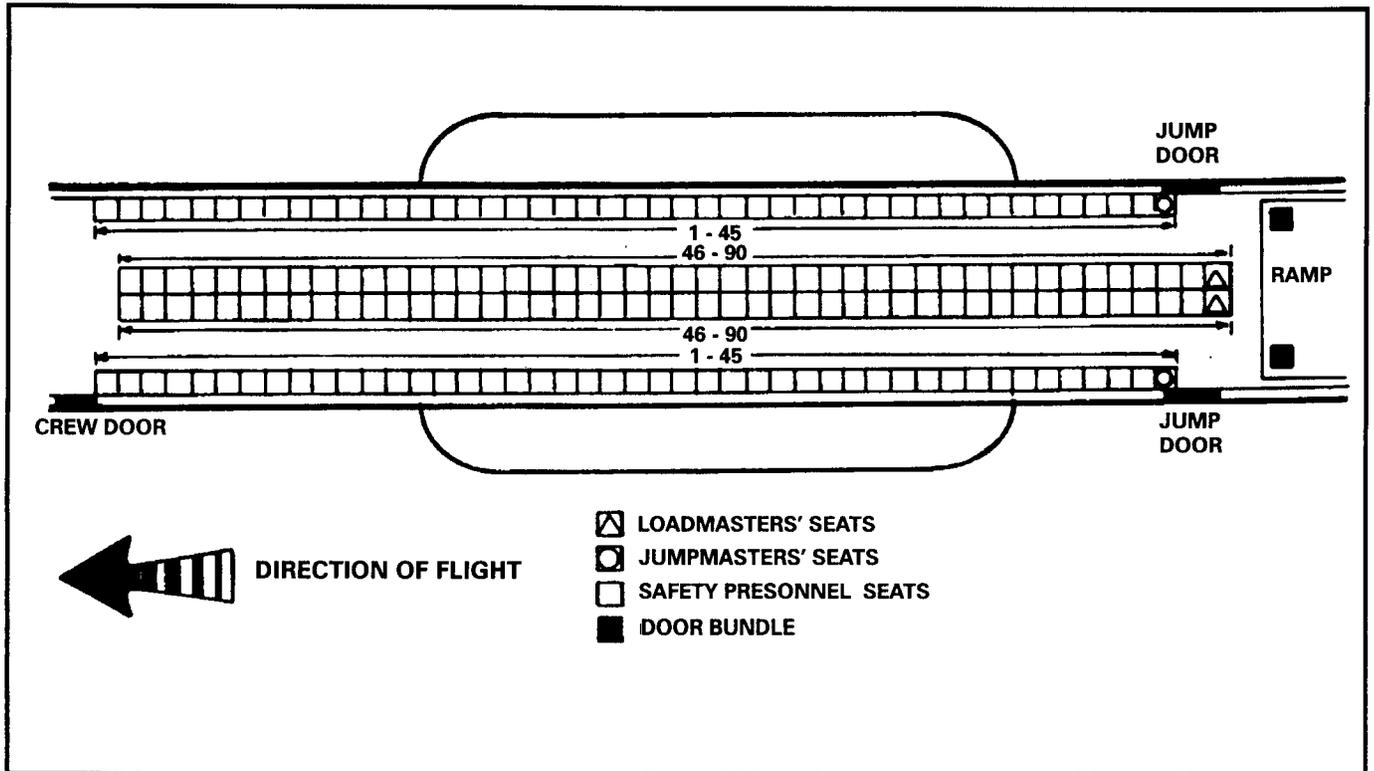


Figure 16-11. C-141B configured for combat load (182 seats).

NOTE: Concentrated parachutist loading is used in wartime emergency operations when not enough C-130 and C-141B aircraft are available. These procedures reduce individual space inside the aircraft. Crowded conditions restrict freedom of movement and present a potential safety hazard if jumpers are not supervised. Flight time beyond 1.5 hours may intensify adverse effects on parachutists. Data and seating schematics are included under appropriate aircraft titles. Additional safety personnel may be used (if the sticks have over 40 personnel for each pass) to complete the required safety inspection within the time warnings.

a. **Supervisory Personnel Required.** Six personnel supervise parachutists and ensure safety measures are followed.

- One JM.
- One AJM.
- Two (jumping) safety personnel.
- Two airdrop qualified loadmasters.

b. **Jump Procedures.** Jump procedures involve the following:

(1) Jump procedures for the C-141B remain the same with the following exceptions: the 30-minute warning replaces the 20-minute warning, and the 15-minute warning replaces the 10-minute warning.

(2) Jump commands are echoed by jumpers since parachutists in the forward end of the cargo compartment cannot see the JM's arm-and-hand signals.

c. **Safety Considerations.** At the 30-minute warning, safety personnel are seated aft to aid the JMs in positioning door bundles and in performing other duties. The JMs ensure that no more than 45 parachutists are hooked to any one anchor line cable.

(1) The standard safety procedures for the C-141B apply with the following changes:

(a) Concentrated parachutist loading is used only for wartime emergency operations and allows the maximum number of combat troops to jump. This includes parachutists designated as safety personnel who conduct safety inspections before donning their equipment, which allows them to move freely about the aircraft. This inspection begins at the 30-minute warning to allow adequate time to complete inspection and to provide time for safety personnel to don their parachutes.

(b) During movement in the aircraft and execution of jump commands, each parachutist protects the reserve parachute rip cord grip to prevent activation of the reserve inside the aircraft.

(2) There is no time to retrieve, detach, and stow the deployment bags and rerig the retrieval system between passes or drop zones. Deployment bags are trailed between passes on single drop zones, or when airdropping on multiple drop zones with less than 10 minutes flight time between drop zones.

16-9. C-141B JUMPMaster CHECKLIST

The JM inspects for the following:

a. **Seats.**

- Enough seats for troop load are present.
- All seats have safety belts.

- Seat backs are secured.
 - Seats are not torn.
 - No projections exist through seats.
 - Legs are locked into floor.
- b. Floor.**
- Nonskid covering is in good condition.
 - Floor is clean and safe to walk on.
 - Roller conveyors are stowed.
 - Loose equipment is secured in the cargo ramp area and does not interfere with troops.
- c. Jump Platforms.**
- Nonskid surface is present.
 - No cracks or bends exist.
 - Studs are locked in seat track receptacles.
 - Tie-down fitting is locked.
 - All bolts and nuts are present.
 - Platforms swing in and out easily.
 - The two spring-down lock catches engage the edge of the door.
- d. Jump Doors.**
- No excessive grease on the door tracks exists.
 - No sharp or protruding edges exist on door frames or on loading strut door (aft and down from jump door).
 - Doors open and close easily.
 - Door lever catches are operational.
- e. Air Deflectors.**
- No sharp edges present.
 - Deflectors operate electrically.
- f. Jump Caution Lights.** (Check seven sets for operation.)
- Set 1—crew entrance door.
 - Sets 2 and 3—top leading edges of right and left doors.
 - Sets 4 and 5—trailing edges of right and left doors, waist high.
 - Sets 6 and 7—right and left anchor cable aft supports.

g. Anchor Cable System.**(1) Forward support beam.**

- Bolts and nuts are present and tight.
- Anchor cables are attached to first and third anchor points right and left of center line for personnel jumps.
- Cable, bolts, nuts, and safety wire are present.
- Turnbuckle is secured with safety wire.

(2) Anchor cable.

- No breaks (within acceptable tolerances of TO 1C-141B-9), frays, or kinks exist.
- Cable is clean and free of rust.
- Cable swage is present.

(3) Anchor cable intermediate support.

- Cables run through slots after ramp is closed.
- Quick-release retaining pip pins are present.

(4) Static line retrievers.

- Motor is operational.
- Retriever spools are secured forward of intermediate cable support and tied to supports with one turn of double ¼-inch cotton webbing.
- Retriever cables are not broken (within acceptable tolerances of TO 1C-141B-1), frayed, or kinked.
- Retriever cables are secured in spring clips.
- Retriever bars are available (one for each door).

NOTE: Retriever cable must be at least 4 inches above the anchor line cable.

h. Emergency Equipment.

- Public address system is operational.
- First aid kits (4) are present.
- Fire extinguishers (3) are present.
- Alarm system is operational.
- Emergency exits are operational and accessible.
- Sufficient emergency parachutes are available.

i. Miscellaneous.

- Lighting system is operational.
- airsickness bags are available.
- Comfort facilities are present.
- JM kit bag (extra equipment) is on board.

Section III C-5 A/B/C GALAXY

The C-5 A/B/C Galaxy is a swept-wing, long-range transport powered by four turbofan jet engines and equipped for in-flight refueling. The aircraft can be configured in different peacetime troop-carrying modes for airborne operations. Parachutists jump the two aft doors of the aircraft.

16-10. SEATING CONFIGURATION WITHOUT COMFORT PALLET

The configuration for the C-5 A/B/C for peacetime training is TAP-1. This configuration offers seats for 73 parachutists in the troop compartment and provisions for personnel airdrop as follows: 71 jumpers and 2 static safety personnel. The maximum number of personnel for each anchor line cable is 40.

16-11. IN-FLIGHT RIGGING SEATING CONFIGURATION WITH COMFORT PALLET

This configuration offers a partial palletized seat kit (8 seat pallets and 1 comfort pallet) for 78 jumpers in the cargo compartment and provisions for personnel airdrop. It does not provide ditching exits or sufficient ground emergency exits. Therefore, this configuration should be carefully evaluated when considered for use. This configuration should be used only during over-land missions.

16-12. JOINT PREFLIGHT INSPECTION (JPI)

The purpose of the joint inspection is to verify the readiness of the aircraft for the conduct of aircraft missions and to take actions necessary to achieve this readiness.

a. Supervisory Personnel Required. To ensure command and control, a JM, AJM, and two safety personnel are used for C-5 A/B/C airdrops.

b. Jumpmaster/Aircraft Commander/Loadmaster Coordination. It is the responsibility of the JM to inform the aircraft commander and loadmaster of the exact time sequence of prejump procedures. Following preliminary orientation and before loading personnel on board the aircraft, the JM and loadmaster make a joint inspection of the aircraft.

c. **Exterior Inspection.** An external inspection of the aircraft is made to detect hazards to the airdrop of personnel. Particular attention is directed to the rear of the aft paratroop doors. Any protruding objects and sharp edges must be removed or padded and taped.

d. **Interior Inspection.** This inspection is conducted to detect and correct any interior safety hazards.

(1) Any sharp edge or protrusion is securely taped and padded, as required.

(2) All equipment in the cargo compartment is securely stowed and lashed.

(3) The floor is clean and free of lubricants; no obstructions are on the walkway or along the paratroop exit route (outboard area between the safety fence and fuselage).

(4) Anchor line cables are installed and under correct tension. Maximum deflection of the cable at midpoint (FS 1465) must produce a minimum cable height of 73 inches above the cargo compartment floor.

(5) A seat and seat belt are available in the troop compartment for each parachutist.

(6) The retrieval system is installed in the aircraft with the winch cable retained in clips and free of the anchor line cable. The retriever spool is secured to the aft support frame with one turn of double 80-pound, ¼-inch cotton webbing. A phenolic (plastic) block is installed on the leading edge of the paratroop doors at the retriever bar level.

(7) Troop compartment lavatory units are installed and operational.

(8) Air deflector systems are installed.

(9) Jump platforms are installed.

(10) Jump signal lights are operational.

(11) Cargo compartment and troop compartment lights are operational.

(12) The public address intercomm system is operational.

NOTE: To reduce confusion in loading, the safety fence can be numbered at this time.

e. **Jumpmaster Preload Inspection of Parachutists.** The JM/AJM inspects each parachutist, parachute, and parachutist's equipment prior to loading the aircraft. The JM/AJM inspects—

(1) Parachutist's helmet.

(2) Parachutist's ID tags and ID card.

(3) Rigging of parachutist's equipment.

- ALICE pack with H-harness, AIRPAC, and PIE/R2, or CWIE containers.
- Dragon missile jump pack, Stinger missile jump pack, or AT4 jump pack.
- M1950 weapons case.
- Lowering lines.

f. **Parachute Stowage.** Personnel stow parachutes in kit bags, secure all equipment, and move to the aircraft.

g. **Aircraft Loading Sequence.** Loading is determined by the USAF loadmaster.

h. **Aircraft Loading Through Forward Ramp.** When loading through the forward ramp, parachutists enter in normal sequence (1 through 36 right side, 1 through 37 left side). When loading through the aft right door, parachutists enter in reverse sequence (36 through 1 right side, 37 through 1 left side).

16-13. PERSONNEL AND EQUIPMENT CONFIGURATION

Personnel seating configuration and equipment stowage for the C-5B Galaxy are as follows:

a. **Seating Configuration.** Parachutists are assembled into two sticks: 37 parachutists for the left door and 36 parachutists for the right door. Each parachutist is assigned a number in the stick. This number is the parachutist's rigging station and seat number. Each parachutist is issued a main and reserve parachute. Each parachutist must inspect his own parachute for safety wires and for fitting of the parachute harness.

b. **Equipment Configuration.** Personnel face inboard, cover on the nylon net assembly equipment stowage sections, and place their equipment on the floor of the cargo compartment. Equipment is stowed on the safety fence under the parachutist's assigned stick number. To facilitate equipment stowage on the safety fence, the two top retaining straps of the nylon net assembly must be fully extended. The individual parachutist's equipment (load-bearing equipment, weapons, and main and reserve parachutes) is stowed under the retaining straps. Equipment rigged in H-harnesses is attached to the safety fence with the H-harness snap hooks.

16-14. MOVEMENT TO THE TROOP COMPARTMENT

On jumpmaster order, parachutists begin movement to the troop compartment as follows:

a. **Left Stick.** The left stick faces aft, moves in stick order, and ascends the aft stair/ladder to the troop compartment. Upon reaching the troop compartment, the stick leader faces the forward end of the aircraft and moves to the forward row of seats on the left side. The left stick is seated row by row. Seats are occupied in the following forward to aft order: outboard, center, and aisle.

b. **Right Stick.** As the left stick begins to ascend the aft stair/ladder, the right stick faces aft, moves past the end section of the safety fence, crosses the airdrop system guide rails/rollers to the left side of the cargo compartment, and moves to the base of the stair/ladder. Parachutists must exercise caution to avoid tripping over the rails and rollers of the airdrop system. The right stick ascends the

stair/ladder into the troop compartment and is seated on the right side, row by row, forward to aft, outboard to inboard in the same manner as the left stick.

NOTE: The troop compartment contains 75 seats: 73 seats are for parachutists and the remaining 2 are reserved for USAF loadmasters.

16-15. LOADMASTER BRIEFING

As soon as all parachutists are seated, the loadmaster uses the public address/intercomm system to brief the parachutists on aircraft safety, emergency procedures, and comfort facilities.

16-16. MOVEMENT TO THE CARGO COMPARTMENT FOR IN-FLIGHT RIGGING PROCEDURES

Movement to the cargo compartment for in-flight rigging proceeds as follows:

a. Movement of Left and Right Sticks.

(1) The loadmaster alerts the jumpmaster 1 hour 20 minutes prior to drop time. At that time, the JM moves the two sticks to the cargo compartment, right stick followed by left stick, both sticks in reverse stick order.

(2) Each stick descends the stair/ladder to the floor of the cargo compartment and moves to the equipment stowed on the safety fence. Routes used are the same as those used in moving to the troop compartment. The right stick must exercise care in crossing the airdrop system rails and rollers.

NOTE: The 1 hour 20 minute warning can be modified to a shorter time depending on the situation and number of parachutists.

CAUTION

EACH PARACHUTIST MUST DESCEND TO THE CARGO COMPARTMENT FACING THE TROOP LADDER WITH BOTH HANDS ON THE HANDRAIL, USING CAUTION AT EACH STEP.

b. In-Flight Rigging Procedures.

(1) Individuals face inboard and cover on their stowed equipment.

(2) Using the buddy system, half of the parachutists in each stick don their parachutes and equipment. After the first group have completed donning their equipment, the second half don their parachutes and equipment.

(3) JMPI begins as soon as rigging is complete. The JM and AJM inspect each parachutist and correct any errors. As the JM/AJM completes inspection of each parachutist, the rigged parachutists are seated on the walkway. Safeties assist the JM/AJM during JMPI.

CAUTION

WHEN ON, LIGHTS LOCATED UNDER THE WALKWAY CAN GET HOT ENOUGH TO MELT NYLON.

16-17. JUMP COMMANDS

The following eight jump commands are used:

- a. GET READY.
- b. STAND UP.
- c. HOOK UP.
- d. CHECK STATIC LINES.
- e. CHECK EQUIPMENT.
- f. SOUND OFF FOR EQUIPMENT CHECK.
- g. STAND BY.
- h. GO.

16-18. JUMP PROCEDURES

The jump procedures for the C-5 A/B/C are as follows:

a. **Jumpmaster and Assistant Jumpmasters.** The JM and AJM hook up to the anchor line cable and stand adjacent to the rear of their respective aft personnel door. The JM and AJM face their sticks to give jump commands. The JM initiates the jump commands, which are then relayed by the AJM.

b. **Parachutists.** All parachutists are hooked up to the paratroop anchor line cable. Personnel must close up tightly, reserve to backpack, to the aft end of the aircraft to permit sufficient room for all parachutists to hook up to the anchor line cable. The number 1 parachutist in each stick does not move aft of the air deflector while it is positioned inside the aircraft. When parachutists are rigged with combat equipment, it may become necessary to stagger the parachutists to have enough room for all parachutists to hook up.

c. **Commands.** The following commands are used:

(1) **SOUND OFF FOR EQUIPMENT CHECK.** At this command, the two safety personnel move from forward to aft, checking each parachutist's static line. The safety personnel report to the JM or AJM at the completion of the check, hook up, and then position themselves by the aft personnel door to control the static lines of exiting parachutists. The two safety personnel should be JM qualified and may jump at the end of the stick. The JM may jump from either aft personnel door. He should jump from the door from which he can best observe checkpoints and the drop zone.

(2) **STAND BY.** At this command, the number 1 parachutist moves toward the door and assumes a normal number 2 man position.

(3) GO. At this command, parachutists' movement into the door will be at a normal walking pace, without shuffling. Exits from the troop doors are not vigorous and are made at an angle of about 70 to 80 degrees to the tail of the aircraft. Each parachutist passes his static line to the safety, places both hands on the ends of his reserve parachute, and exits the aircraft.

16-19. TIME WARNINGS

The following actions occur at each time warning:

1 Hour 20-Minute Warning. Parachutists are moved from troop compartment to cargo compartment under the supervision of the JM, AJM, and safeties. In-flight rigging and JMPI begins.

20-Minute Warning. The JM makes necessary checks of personnel and equipment. Dragon missile jump packs and CWIE are attached to the parachutists, and door bundles are moved to the vicinity of the personnel doors.

6-Minute Warning. JMPI of all parachutists is complete. A verbal and visual 6-minute warning is given to the JM by the loadmaster, and the JM begins his jump commands.

Slow-Down Warning. Approximately 3 minutes from drop time, the jump commands are completed. Personnel doors are opened, air deflectors deployed, and jump platforms extended and locked.

1-Minute Warning. Troops are alerted. The JM and AJM make safety checks from personnel doors. The AJM informs the JM that the AJM's side is clear and that it is safe to jump.

10-Second Warning. The loadmaster gives the JM a visual 10-second warning. At this time, the JM gives the command STAND BY, and the first parachutist assumes a normal number 2 position. The remainder of the stick moves aft to close up the stick.

Green Light, GO. At the green light signal, the JM taps out the first man. If T-10 type parachutes are issued, the AJM taps out the first man in the opposite door.

16-20. SAFETY PRECAUTIONS

Safety precautions for the C-5 A/B/C are as follows:

a. **Platforms, Air Deflectors, Aft Cargo Door.** The JM ensures that jump platforms are extended and locked and that the air deflectors are fully deployed. The aircraft will not be jumped unless these conditions are met. These conditions are mandatory for each aft personnel door that is to be used.

b. **Door Bundles.** When personnel are to follow door bundles, the door bundle static line is outfitted with three drogues.

c. **Movement Into the Door.** Parachutists must exercise caution as they move to the door to avoid becoming entangled with the static lines of

preceding parachutists. This precautionary action may slow movement into and out of the door.

d. **MC1-1 Type Parachutes.** Single door exits only will be executed when MC 1-1 B or -1 C type parachutes are used.

e. **Ramp Exits.** Static line parachutists are not authorized to make aft ramp exits of the C-5 A/B/C aircraft.

16-21. C-5 A/B/C JUMPMaster CHECKLIST

The jumpmaster inspects the following at the departure airfield:

a. **Seats.**

- Enough seats are available for troop load.
- All seats have safety belts.

b. **Safety Fence.**

- Safety fence is installed.
- Sufficient equipment restraint nets are available for troop load.

c. **Floor.**

- Nonskid surface covering is in good condition.
- Floor is clean and safe to walk on.
- Roller conveyors are stored.
- Loose equipment is secured in the cargo ramp area and does not interfere with troops.

d. **Jump Platforms.**

- Nonskid surface covering is present and in good condition.
- No cracks or bends are present.
- Studs are locked in seat track receptacles.
- Tie-down fitting is locked.
- All bolts and nuts are present.
- Platforms swing in and out easily.

e. **Jump Doors.**

- No excessive grease is on door tracks.
- No sharp or protruding edges are on door frames or on loading strut door (aft and down from jump door).
- Doors open and close easily.
- Door level catches operate.

- Phenolic (plastic) block is installed on leading edge at retriever bar height.

f. Air Deflectors.

- No sharp edges are present.
- Deflectors operate electrically.

g. Jump Lights. (Check five sets for operation.)

- Set 1—crew entrance door.
- Sets 2 and 3—leading edges, top of right and left doors.
- Sets 4 and 5—trailing edges, right and left doors, waist high.

h. Static Line Anchor Cable System.

(1) *Forward support beam.*

- Bolts and nuts are present and tight.
- Cable, bolts, nuts, and safety wire are present.
- Turnbuckle is secured with safety wire or tied with ¼-inch cotton webbing.

(2) *Anchor line cable.*

- Cable has no breaks.
- Cable has no frays.
- Cable has no kinks.
- Cable is clean and free of rust.
- Cable swage is present.
- Cable is at least 73 inches above floor.

(3) *Static line retrievers.*

- Motor is operational.
- Retriever spools are secured and tied to supports with one turn of double ¼-inch cotton webbing.
- Retriever cables are not broken, frayed, or kinked.
- Retriever cables are secured in spring clips.
- Retriever bar is available.

NOTE: Retriever cable must be in position, not less than 4 inches above the anchor line cable.

i. Emergency Equipment.

- Public address system is operational (upper deck only).
- First aid kits (4) are present.
- Fire extinguishers (3) are present.
- Alarm system is operational.
- Emergency exits are operational and accessible.
- Sufficient emergency parachutes are available.

j. Miscellaneous.

- Lighting system is operational.
- airsickness bags are available.
- Comfort facilities are available.
- JM kit (extra equipment) is on board.

k. Aircraft Slowdown Warning(about 3 minutes).

- Doors are opened and locked in place.
- Air deflectors are extended.
- Jump platforms are locked in place.

l. Loadmaster/Jumpmaster Safety Checks.**(1) Equipment.**

- Door bundles employ 15-foot long static lines with 3 drogue parachutes.

(2) Aircraft.

- Jump platform is secure and will sustain parachutist's weight.

NOTE: The C-5 A/B/C aircraft cannot be used for aft ramp static line jumping except by HALO personnel. Due to the number of jumpers that can be hooked up to one anchor line cable, the C-5 A/B/C aircraft have not been certified for combat concentrated loads. Any deviation to the listed configurations requires authorization from HQ, AMC/DOT/DOV.