CHAPTER 25 - EQUIPMENT/FURNISHINGS

TABLE OF CONTENTS

LIST OF FIGURES

GENERAL

Interior fittings include all those components and devices that, while not belonging to a specific system, can be located inside the aircraft in order to ease operations and missions. Elements are fitted in the two main cabins: cockpit and cargo cabin.

The cockpit is located at the foremost part of the aircraft, and fits for two pilots. Cockpit interior fittings include crew seats, third seat for observer third crew-member and diverse components.

The cargo cabin can be furnished according to the type of mission to perform:

- Cargo transport: items such as rails and trays are installed. For cargo transport, the ramp zone can be used too.

- Passengers transport: items such as troop and passengers seats, stretchers and VIP seats are installed.

- Aerial Delivery

The aircraft has an optional galley, a toilet, and a variety of stowage compartments.

COCKPIT

The cockpit is properly equipped to meet any operational requirement and ensure acceptable comfort to the crew.

DESCRIPTION

Interior fittings include:

– ***Seats:*** there are one seat for the C/M-1 (left side), one seat for the C/M-2 (right side) and another one for an observer or C/M-3.

  Positions of the adjustment controls on the pilot and co-pilot seats differ, as both seats are symmetrical. Position and height of each seat can be adjusted, both seats recline, and have adjustable armrests as well as a safety harness. Seats can be moved back and forward, and are fitted with a locking lever. Seat adjustments for height and inclination are controlled using levers located on each side of the base of the seat. Seats have also levers for lumbar adjustment. Armrests are adjusted using a control located under each rest. Safety harnesses are fully adjustable, and have an unlocking lever that permits the person to lean forward when actuated with the harness on, while it locks the harness if extremely forced. Both seats have a box at the back, for a life jacket.

  Observer seat and its safety-harness, are mounted on two articulated brackets, and stows near the cockpit door (between frames FR 9 and FR 10). This seat has a locking mechanism to hold it on position when in use, and a box for the observer's life jacket.

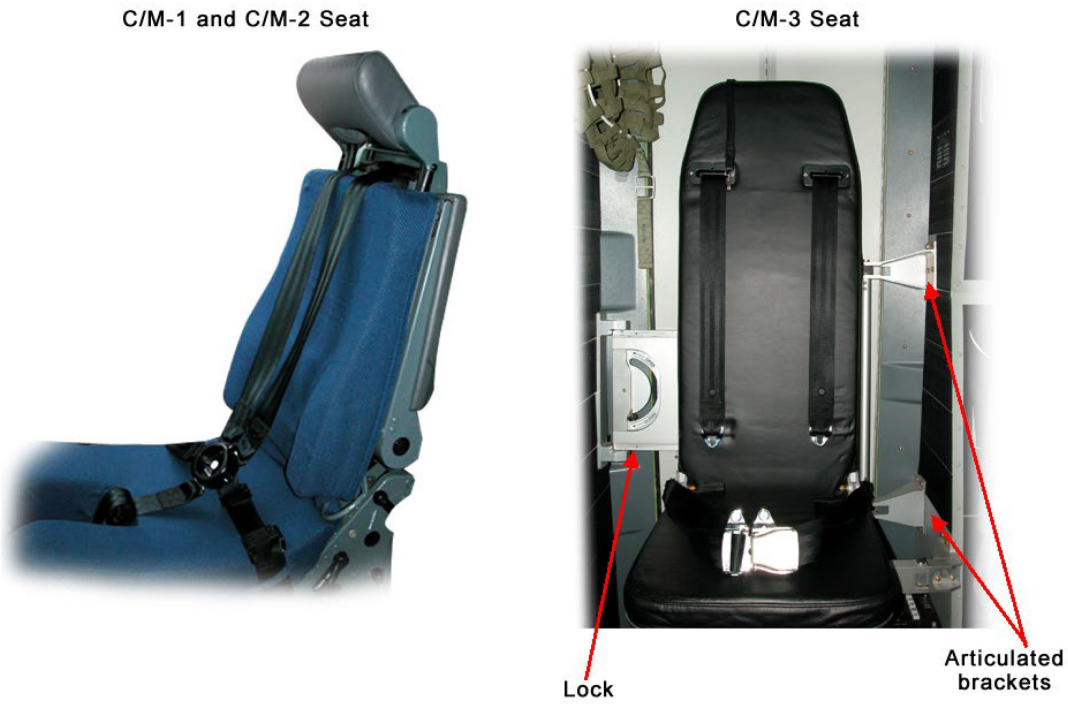


Figure 25-1 Cockpit Seats - Components

– ***Windows:*** cockpit windows are five fixed and two sliding transparent glass panels. All windows have two layers except heated windows which have an additional layer (refer to WINDSHIELD ICE AND RAIN PROTECTION, in CHAPTER 30 - ICE AND RAIN PROTECTION, and COCKPIT WINDOWS, in CHAPTER 52 - DOORS).

– ***Stowage Cockpit Compartments:*** the cockpit has stowage compartments distributed along each side of the cockpit:

  • Two bags: attached by Velcro tape to the left and right consoles.

  • Two boxes: located in both consoles.

  • Two luggage racks: permit to place briefcases on the floor, between FR 7 and FR 9, on each side of the cockpit, providing a lock and an adjustable bracket.

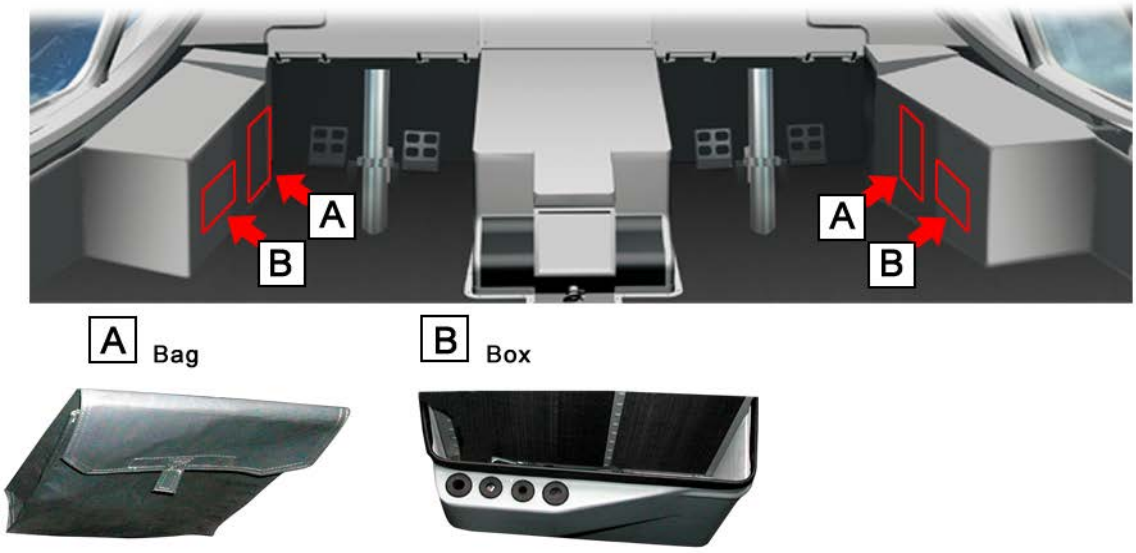


Figure 25-2 Stowage Cockpit Compartments - Components

– ***Helmet Supports:*** two behind C/M-2 seat and one behind C/M-1 seat.

– ***Oxygen Mask Supports:*** one behind C/M-2 seat and two behind C/M-1 seat.

– **Miscellaneous items:** there are several items intended to ensure optimal comfort and visibility to the pilots:
  - On top of the windshield, there are three brackets to fix two movable sunshades.
  - Two reference points, fixed to the windshield frame, help the C/M-1 (right-hand reference point) and the C/M-2 (left-hand reference point) to adjust their seats to the best position for optimal outer visibility, an easy instruments reading and controls operation. Both pilot and co-pilot are in their optimal position if able to see the small balls lined-up with their respective reference points.
  - Footrests mounted beneath the instrument panel, facing both pilots.
  - One coaster and one ashtray in each console.

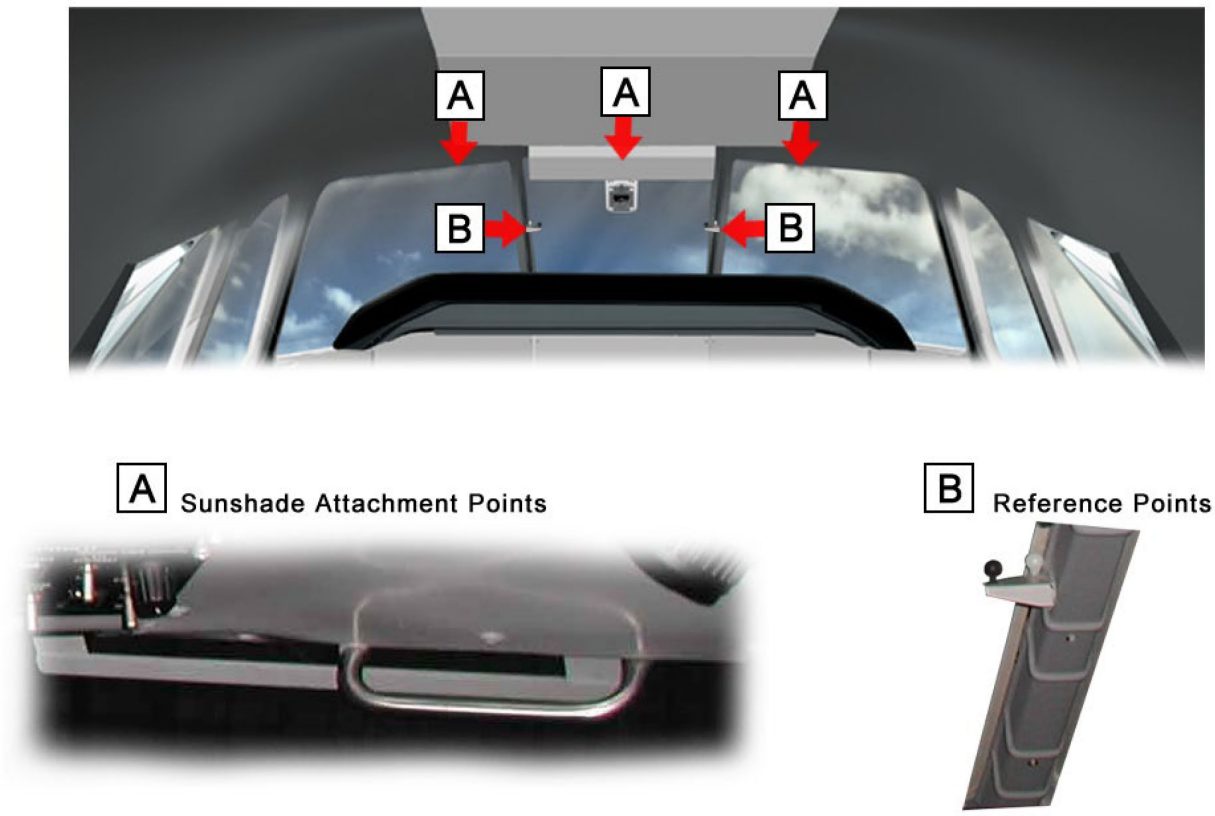


Figure 25-3 Miscellaneous Cockpit Items

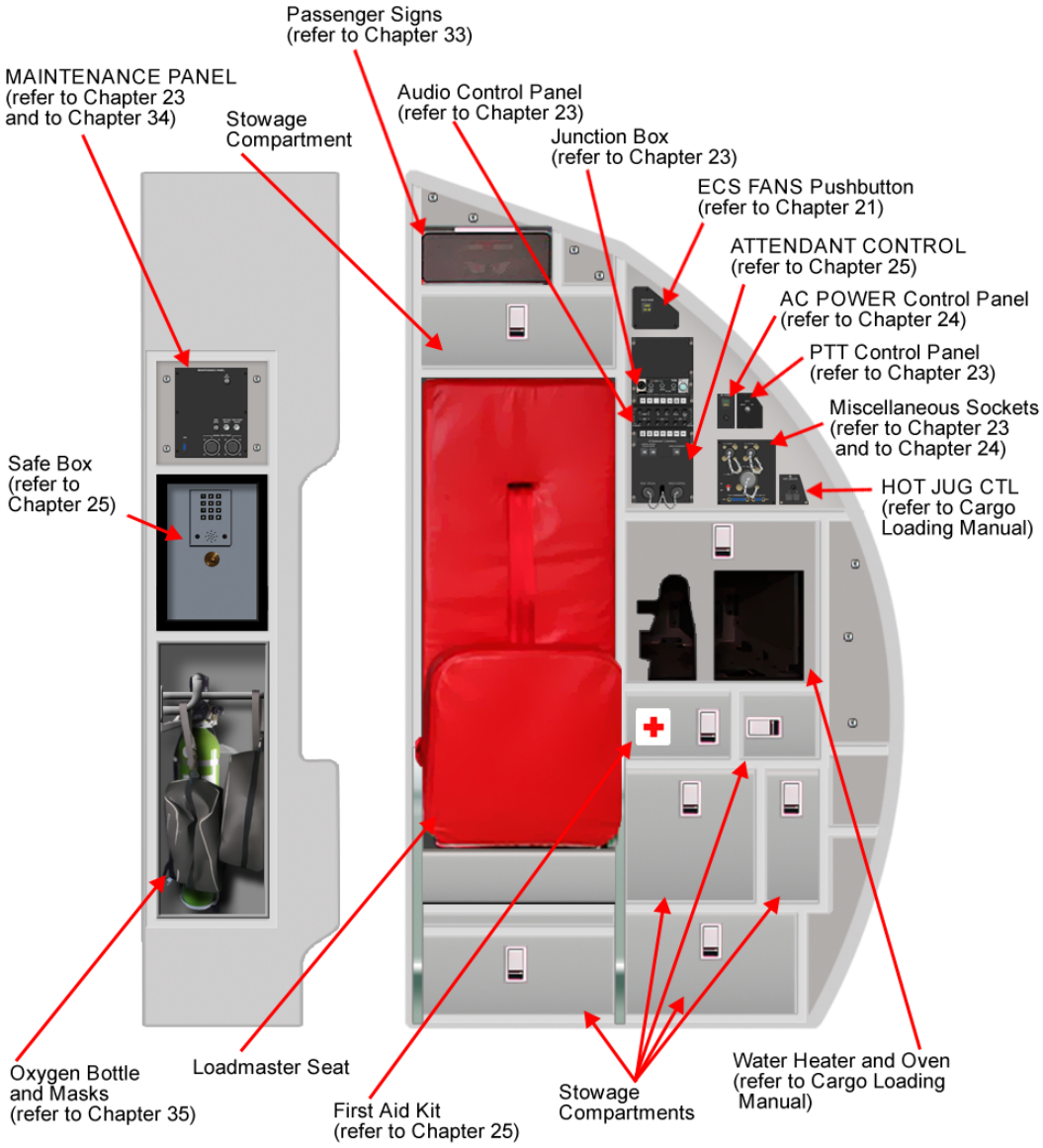
CARGO CABIN

The cargo cabin extends from frame FR10 to FR30 and can be fitted in accordance with different types of mission.

(Refer to CARGO LOADING MANUAL)

DESCRIPTION

At FR10 there is a rack with several components. Each component is explained in the related systems descriptions as follows:



RACK AT FR 10

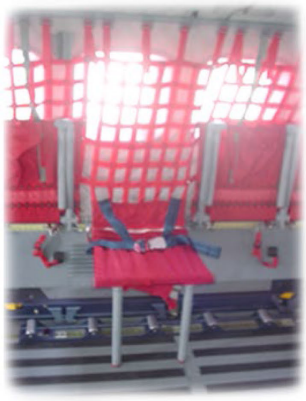
Figure 25-4 Rack at FR 10

Cargo cabin has windows on both sides. Each window has an inner and an outer transparent panel.

The floor is covered with panels that are reinforced all along the vehicle-moving area, and have anti-slip stripes. All along the cargo cabin floor there are four restraint tracks that can fasten the tiedown rings or the roller trays for cargo loading/offloading operations. Additionally in both laterals, two siderail assemblies, that are part of the Cargo Handling and Air Drop System (CHADS), can restrain pallets from moving.

Figure 25-5 Cargo Transport - Components

For passenger transport, the cargo cabin is fitted with rows of seats with safety belts. Up to 69 passengers or soldiers can be arranged along the sides and in a central row (to install the central row of seats, the framing for seats central row is fixed to both floor and ceiling). In case of paratroops transport, only the two lateral rows can be installed arranging up to 48 fully equipped paratroopers. Troop seats are made of lightweight tubing with folding legs, and are fastened to the seat rails by means of a pair of quick-release pins. The seats are joined together by a system that enables them to be vertically folded and secured. Two double seats can be fastened by quick-release pins to the paratroops doors.



INDIVIDUAL SEAT

DOUBLE SEAT

PARATROOP DOOR SEAT

Figure 25-6 Passenger Transport - Components

For medical transport, the cargo cabin can be fitted with up to 24 NATO standard stretchers and six seats for medical staff (two double seats in the paratroop doors and two individual seats).

Stretchers have a fabric-covered tubular frame and a set of safety belts. They are mounted in a three-high configuration on both sides of a central aisle running along the cabin and are attached to the seat rails and to the brackets fixed to the frames.

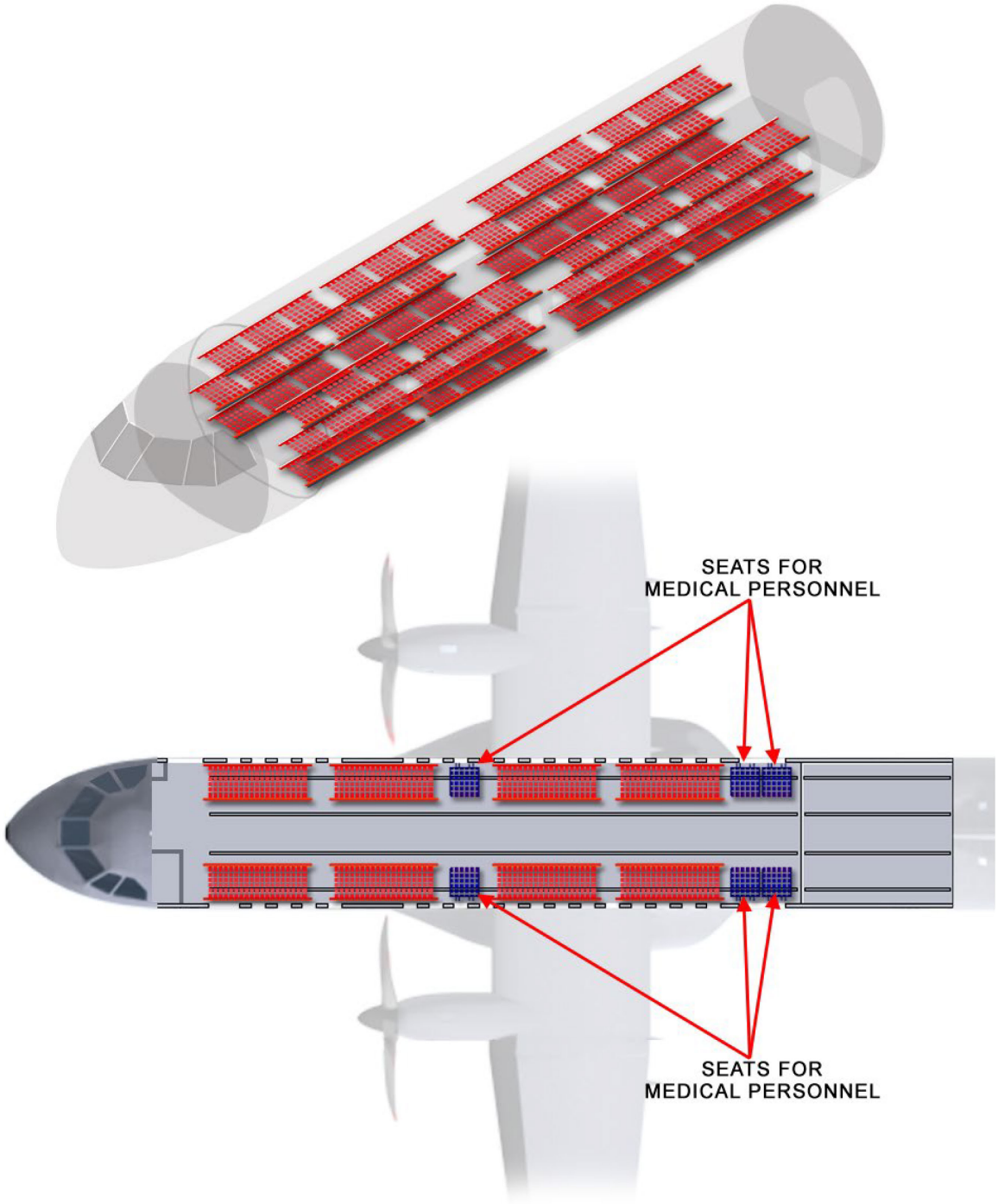


Figure 25-7 Medical Transport - Components

For civil transport, the aircraft can be fitted with double seats. The following figures show some of the possible configurations.

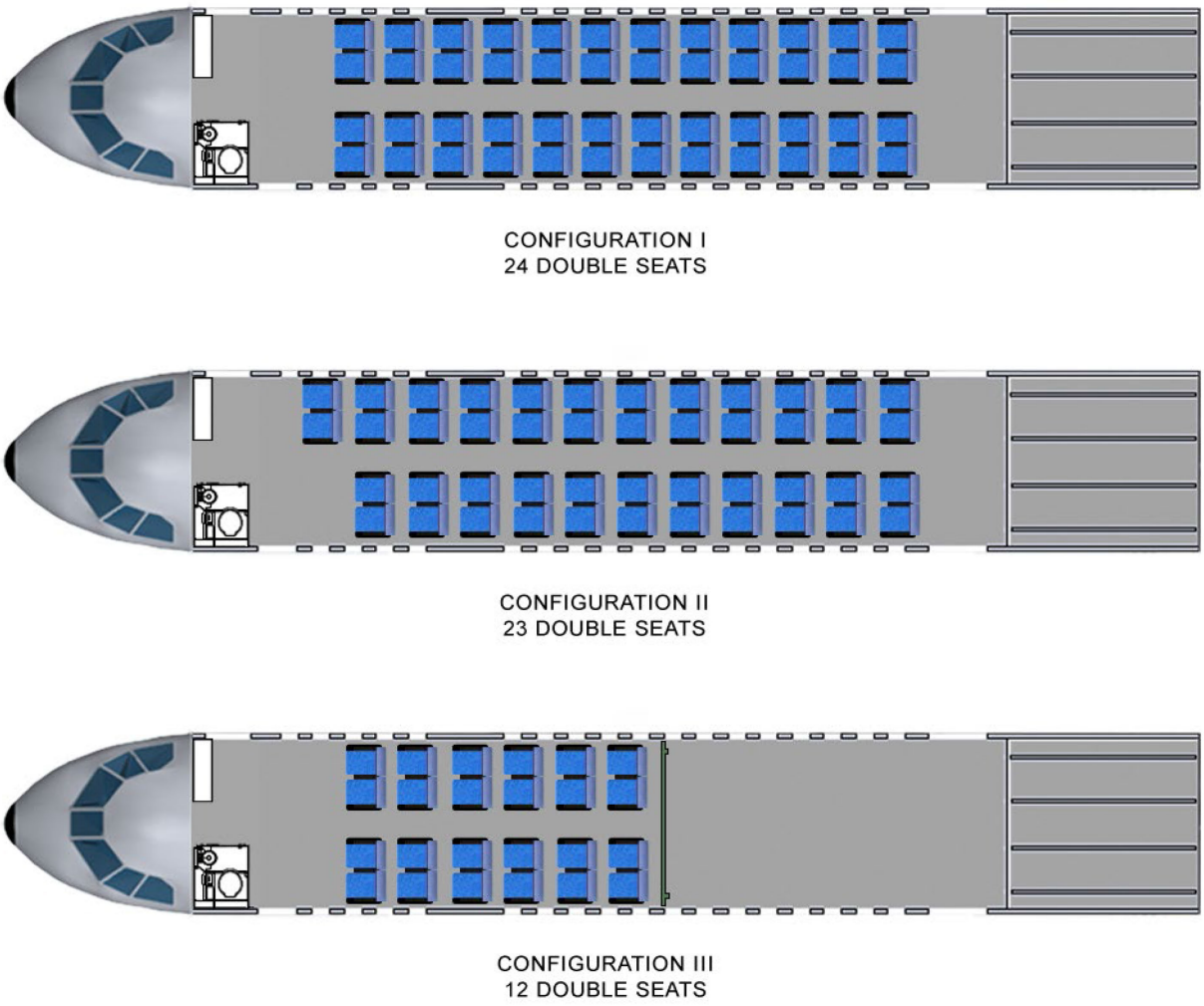


Figure 25-8 Civil Transport Configuration

The aircraft can be fitted with VIP seats. The main components are:

– ***Foldable tables***

– ***VIP seats:*** there are two double VIP seats. The main components are:

  • Adjustable head rest.

  • End bay: outboard and inboard to support passenger arms and to stow deployable meal trays as stowage compartment. Each end bay is provided with a hinged armcap. This armcap closes the end bay inner cavity in which meal tray is installed. It has an ashtray located on the upper surface of the outboard armrests. Each end bay is provided with two pushbuttons to activate recline and legrest/footrest.

  • Reclining backrest: each seat has a hydrolock to allow the backrest to recline up to at least 20° relative to the vertical. To move a backrest from the up-right to any intermediate or fully reclined position, press the recline control pushbutton and apply pressure against the backrest. To re-erect a backrest, press the recline control pushbutton and by slightly leaning forward, release pressure from backrest which then automatically returns to the normal up-right position.

  • Legrest & Footrest: legrest is carried out by a mechanical device. It has a folding flap, as foot rest.

  • In arm table: a meal tray is installed on each end bay.

  • Safety belt: a fixed three-points safety belt.

  • Life vest container: one container in each seat, located in the front part of the end bay structure.

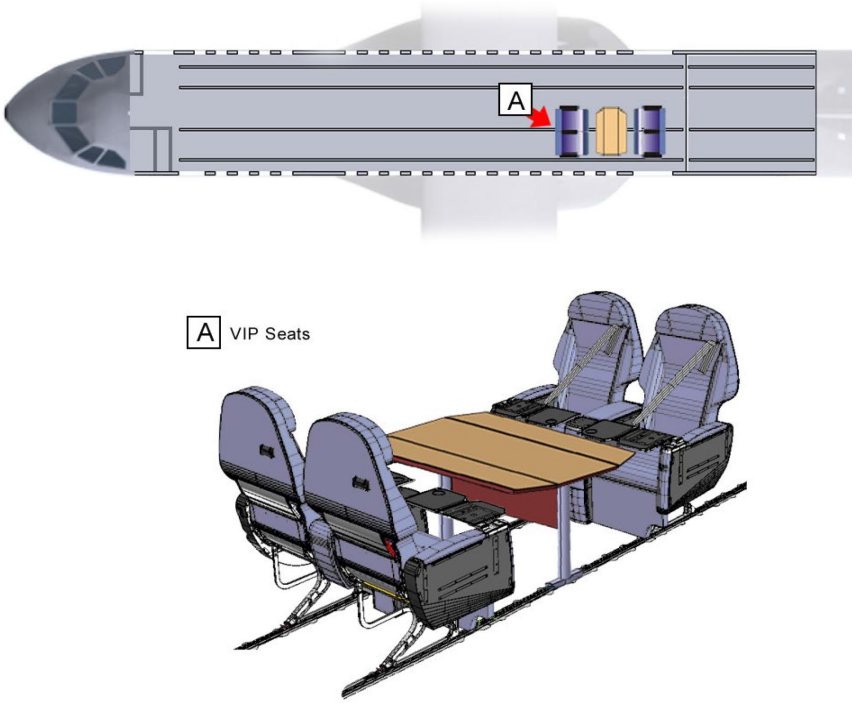


Figure 25-9 VIP Elements

Next to the left paratroops door, there is an ATTENDANT CONTROL panel with several controls and sockets, as shown in the following figure.

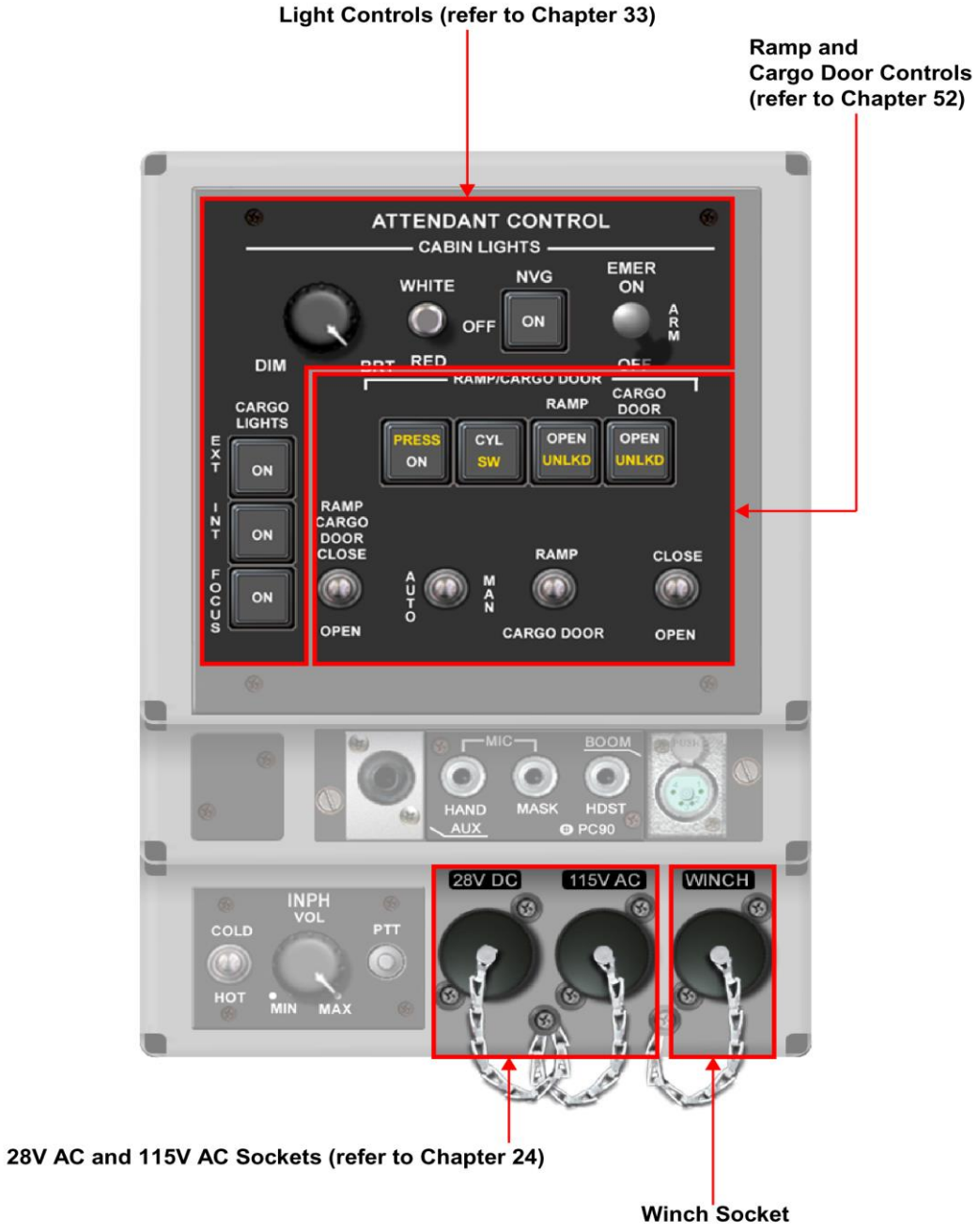


Figure 25-10 ATTENDANT CONTROL Panel - Components

At FR30, to separate the cargo cabin from the ramp area, there is a curtain made of insulating fabric pieces that can be easily rolled up with straps and stowed.

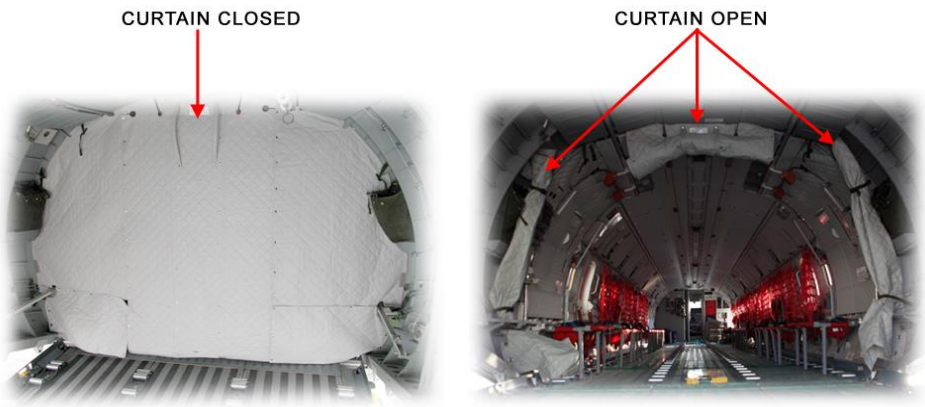


Figure 25-11 Curtain - Components

The ramp area has a set of bags intended to stow diverse equipment. These bags are made of canvas, and they are strapped onto the ramp and next to the paratroops doors (between FR31 and FR32).

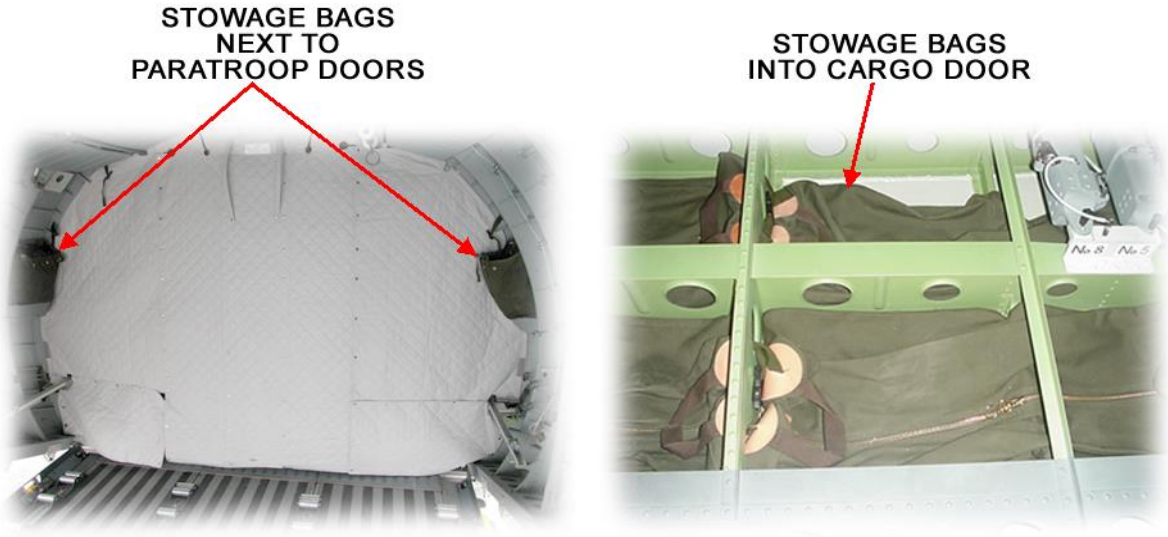
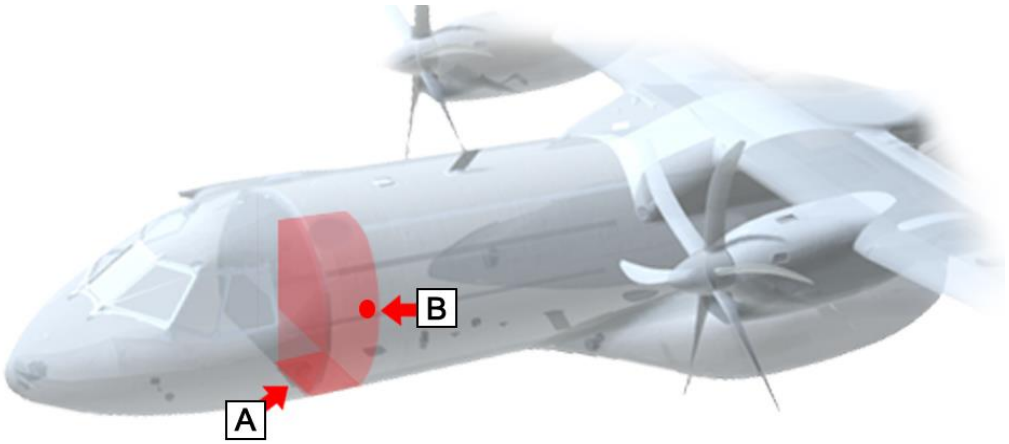


Figure 25-12 Ramp Area - Components

TOILET

DESCRIPTION

The toilet is a removable compartment, installed in the front left-hand zone of the cargo cabin (between the bulkheads at frames FR10 and FR12). It has a self-contained recirculating type toilet. It has a ceiling light, and is ventilated through a vent at the ceiling.



A Toilet

B Roll Holder

Figure 25-13 Toilet - Components

WINCH

The winch is permanently fitted beneath the floor, between FR 12 and FR 13, and has a pulling capacity of 1000 kg at a speed up to 0.17 meters per second to load wheeled or palletized cargo into the airplane.

DESCRIPTION

The winch has a 25.9 m cable that runs out of trap door, passing through a pulley that moves horizontally with the cable drum, permitting the winch to be horizontally driven, and drag loads along the floor.The winch has an overload clutch, that disengages the motor from the drum when the cable tension exceeds the winch capacity. It also has a safety brake that actuates when the winch is turned-off, to prevent the cable from unwinding. Besides this, the winch has a safety brake to prevent from stretching when de-energized, and a stop mechanism to avoid further winding when the cable is fully wound onto the drum.

The aircraft also has two supporting legs to use during loading/offloading through the ramp. To ease these operations, two ramp extensions are available while loading from the ground or from a vehicle.

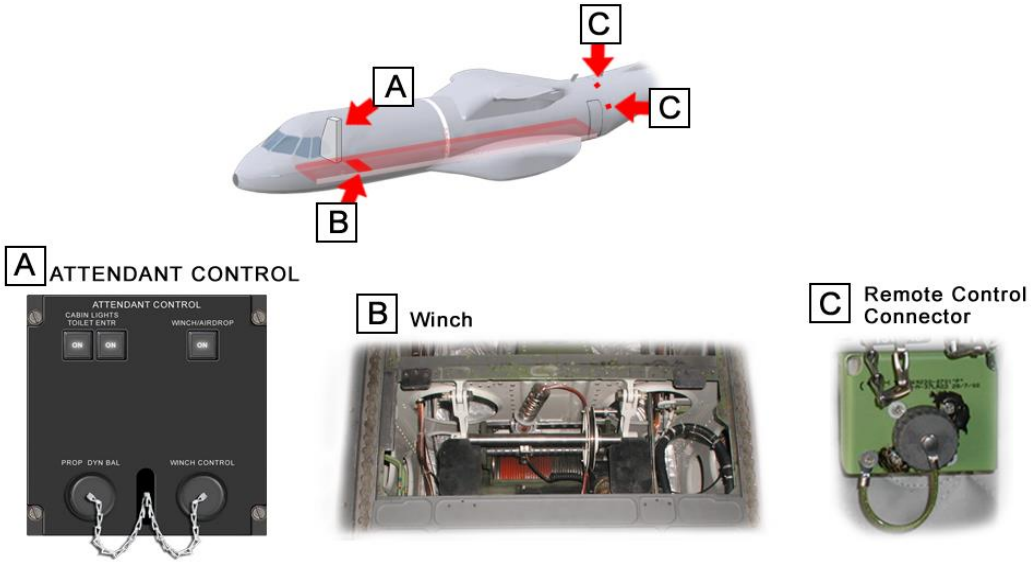


Figure 25-14 Winch - Components

OPERATION

The winch is operated from a remote control unit, which can be connected at the ATTENDANT CONTROL panel at FR10, at the connection in the left side of the rear cargo cabin or at the ceiling of the rear cargo cabin. When not in use, it is stowed in the rack at FR 10.

NOTE

Please refer the Cargo Loading Manual for further details on loading/offloading procedures, as well as concerning equipment usage and components.

CONTROLS AND INDICATORS

(1) WINCH/AIRDROP Pushbutton:

- *ON light on:* the winch controller is energized, and permits the winch to be operated.

(2) Control Wheel:

- *IN:* winds the winch cable. The further the wheel turns, the faster the cable will be wound-in.
- *OFF:* stops winding the cable (in or out.)
- *OUT:* winds-out the cable. The further the wheel turns, the faster the cable will be wound-out.

(3) E-STOP Pushbutton:

- *Pressed:* will shut-off the winch, while at emergency stop.

(4) MTR HOT Indicator:

- *On:* indicates winch motor overheating, but does not stop operation.

(5) FULL OUT Indicator:

- *On:* the winch cable is fully unwound.

(6) FULL IN Indicator:

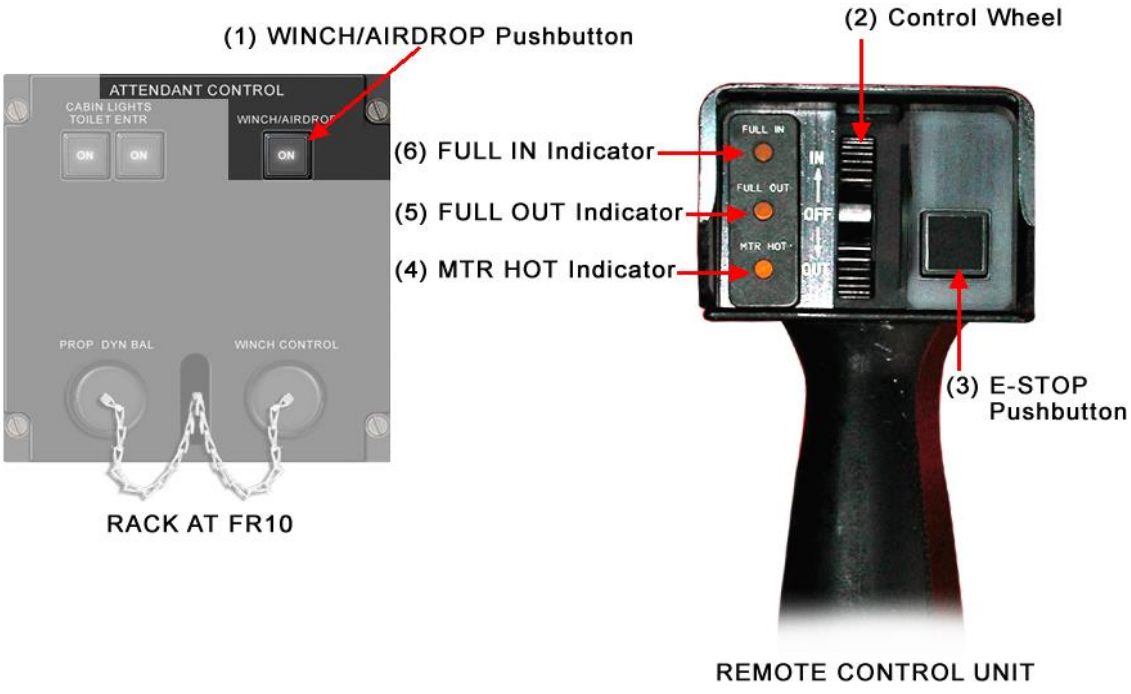


Figure 25-15 Winch - Controls and Indicators

EMERGENCY EQUIPMENT

The emergency equipment includes all the equipment and systems that are essential for crew safety during or after, an emergency. Includes:

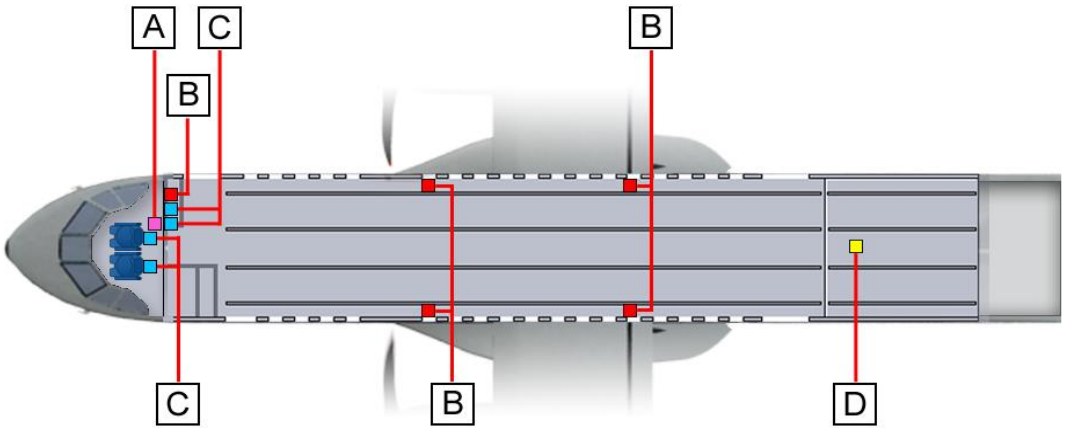
- Fire Protection (refer to CHAPTER 26 - FIRE PROTECTION)
- Emergency Lighting (refer to CHAPTER 33 - LIGHTS)
- Oxygen Equipment (refer to CHAPTER 35 - OXYGEN)
- Emergency Exits (refer to CHAPTER 52 - DOORS)
- Miscellaneous Equipment.
- Emergency Locator Transmitter (ELT)

DESCRIPTION

This section only refers miscellaneous equipment and the emergency locator transmitter:

- ***First Aid Kits:*** one in the rack at FR10 and other four stowed on the sidewalls along the cargo cabin. Each kit is metallic-box preserved and fixed to the aircraft structure by a quick-release strap. Each kit contains essential medicines and medical items necessary to aid and comfort injured personnel.
- ***Axe:*** located in the cockpit, behind the right seat.
- ***Life Jackets:*** located on the back of both cockpit seats, in the cockpit door frame, and under the troop and jump master seats as well. Life jackets are automatically (CO2 system) or manually (by blowing) inflated. On the left side, a position light comes on automatically in contact with water.

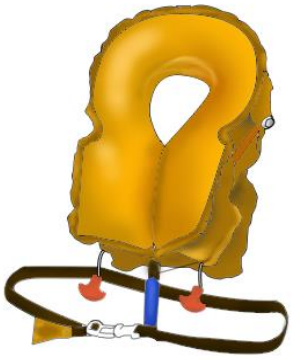
  In addition, there is one life jacket per passenger and VIP seat (if installed).
- ***Emergency Locator Transmitter (ELT):*** transmits SOS signals in order to find the aircraft position if an accident has occurred.



A Axe

B First Aid Kit

C Life Jacket



D Emergency Locator Transmitter

Figure 25-16 Emergency Equipment - Components

EMERGENCY LOCATOR TRANSMITTER

DESCRIPTION

The Emergency Locator Transmitter, located in the aircraft tail, sends 121.5 MHz, 243.0 MHz and 406.025 MHz radio signals to help locate the aircraft in case of emergency. The 121.5 MHz and 243 MHz frequencies are the standard distress frequencies to facilitate the final approach to the aircraft (homing function). The 406 MHz frequency is the frequency used for the COSPAS/SARSAT satellite network to localize and to identify the aircraft using the aircraft identification data coded in the beacon and the aircraft position. An Interface Unit updates the 406 MHz signal with the last GPS position.

The ELT beacon is connected to one antenna located on the top of the fuselage for aircraft transmission. The ELT beacon is also equipped with a portable antenna and can be easily withdrawn from the fixed rack for external activation in case of aircraft evacuation.

Main components of the system are:

- ***Transmitter:*** located in the ceiling next to left paratroop door, generates the distress signals.
- ***Remote Control Panel:*** located in the crew cabin, allows controlling and monitoring the system.
- ***Antenna:*** (refer to ANTENNAS, in CHAPTER 01).

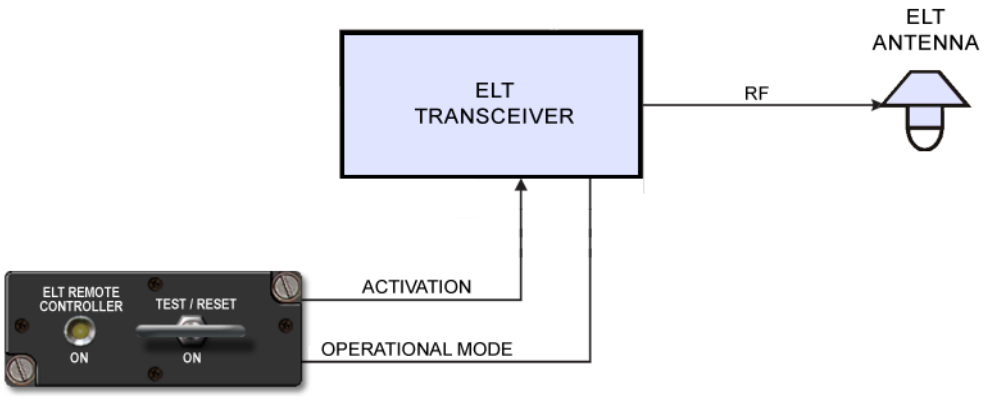


Figure 25-17 Emergency Locator Transmitter - Architecture

OPERATION

The ELT transmission can be automatically triggered after crash impact or manually activated in an emergency situation. A sounder and a lamp indicate the system status.

The transmission begins automatically when a violent (±2.6g acceleration parallel to aircraft longitudinal or lateral axis and +12 or -6g acceleration parallel to aircraft vertical axis) shock occurs.

The ELT can be manually controlled from the ELT Remote Controller located on the Pedestal or from the ELT transmitter unit.

The ELT Transmitter Unit provides the following controls:

- Beacon armed to trigger automatically the transmission after crash impact.
- Beacon activation to transmit continuously until reset.
- Beacon deactivation.
- Test activation.
- Connection for ELT reprogramming.

The ELT Remote Controller is used to perform the following controls:

- Beacon activation to transmit continuously until reset, provided that the beacon has been previously armed in the ELT transmitter unit.
- Test activation to verify the beacon operation.
- Transmission reset in the event of an untimely triggering.

CAUTION

The beacon ARM/OFF/ON Mode selector must be in the ARM position before starting the flight.

NOTE

It is recommended to switch the ARM/OFF/ON Mode selector to OFF when the aircraft power is to be removed, in order to extend the battery, especially if the aircraft is to be grounded for a prolonged period (more than 10h).

The test of the ELT system can be performed from the TEST/RESET / ON Switch in the ELT Remote Controller or from the TEST Switch in the ELT transmitter unit. In any of these cases, after a delay of some 3 or 4 seconds, two swept tones are heard, followed by a short space and finally a beep. The ELT Remote Controller ON Indicator repeats the swept tones and the beep in a visual form.

NOTE

If the test has not been carried out for some days then the initial test may not give the pass results as indicated above. The test should be repeated several times, normally the test will pass on the second or third attempt after a period of inactivity.

CONTROLS AND INDICATORS

(1) ON Indicator:

- *On:* the system is transmitting the emergency signal or system is in test.

  Before transmission, the light and sounder give a series of pulses for 11 seconds. During this period the aircrew may cancel the triggering to ON by selecting TEST/RESET.

(2) TEST/RESET / ON Switch (guarded):

- *TEST/RESET:* initiates a test in order to check the correct system operation and stops the signal transmission and restores the system for the automatic activation.
- *ON:* the system starts signals transmission.

(3) TEST Switch:

initiates a test in order to check the correct system operation.

(4) REMOTE Control Unit Connector:

for connection to the Remote Control Unit.

(5) ARM/OFF/ON Mode Selector:

- *ARM:* is the usual position. The system is armed for automatic transmission and for activation from the ELT Remote Controller located on the Pedestal.
- *OFF:* disables all operations of the unit.
- *ON:* enables immediate transmission of the emergency signal.

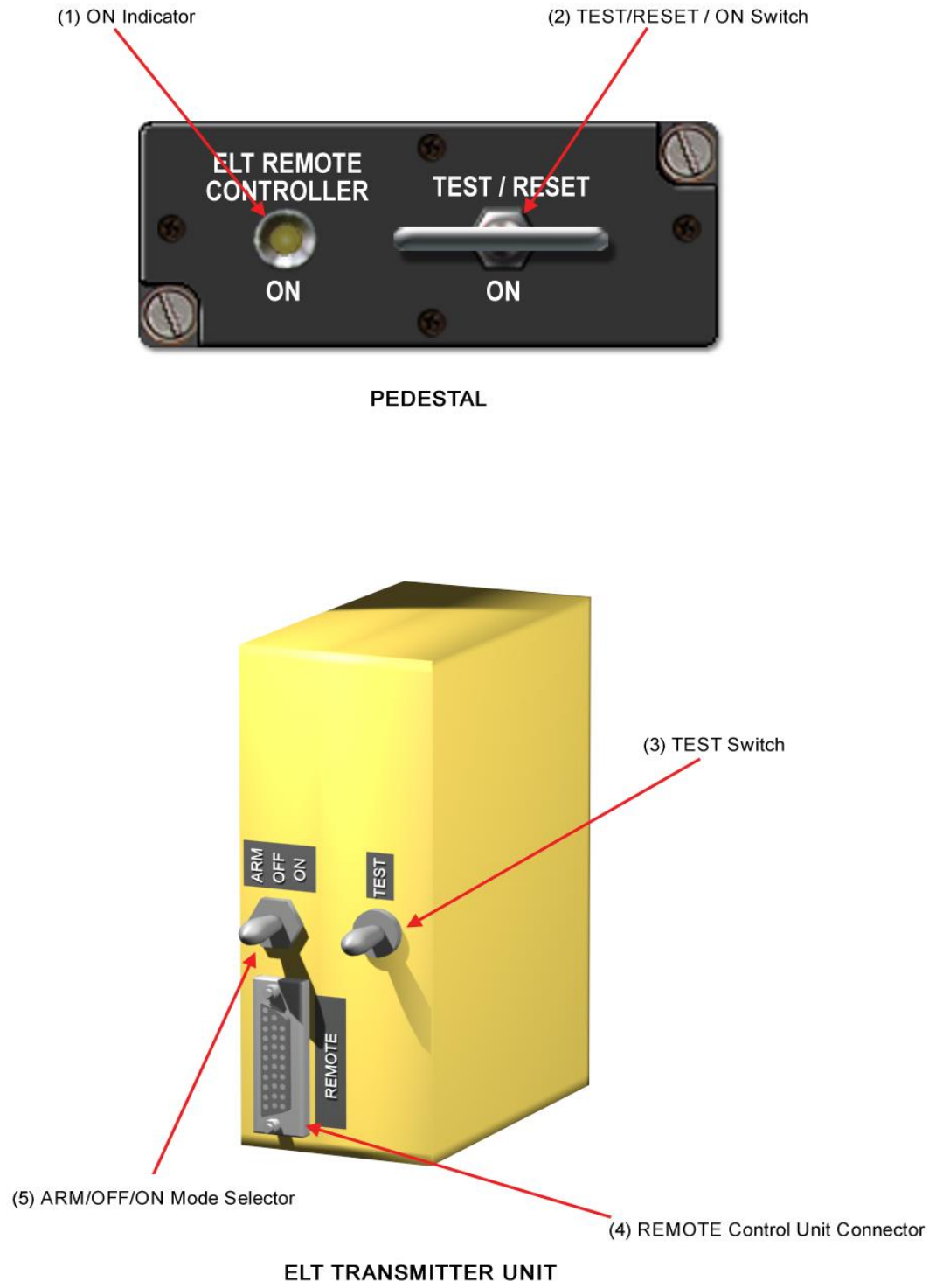


Figure 25-18 Emergency Locator Transmitter - Controls and Indicators

SAFE BOX

The safe box is located in a rack at FR10 and its function is to provide a safety place for stowage.

DESCRIPTION

The main components are:

- ***Keypad:*** located in the door, enables the electronic opening of the safe box.
- ***Emergency Key:*** provided apart from the box, it allows to open the door without the password.
- ***Emergency Key Bolt:*** located under the keypad, it's the place where the emergency key can be fitted.

OPERATION

The safe box has three modes of operation:

- Standard Opening with Electronic Key:
  1. Press "*". A characteristic tone is emitted and the ON/OFF indicator comes on.
  2. Before 8 seconds had past, start entering the password. There are 5 seconds available between digits.

     If indicated time is exceeded the system automatically will go off.
  3. Press "#". If password is right, a characteristic tone is emitted and the door will be opened.
  4. If password is wrong, a characteristic tone is emitted and the ON/OFF indicator comes permanently on allowing a new attempt.

     There are 4 consecutive attempts to open the door. If a fifth failed attempt is performed, the system will lock itself for 15 minutes avoiding the standard opening during this time. An emergency opening will be required during this period.
- Emergency Opening: in case of system failure or discharged batteries an emergency opening will be necessary.
  1. Insert the emergency key in the emergency key bolt.
  2. Turn the key fully to the right.
- Emergency Opening with Password Reset: in case of unknown password, the reset of the original password can be performed.
  1. Insert the emergency in the emergency key bolt.
  2. Turn the key fully to the right.
  3. Once door is opened and keeping the key fully turned, press "*". A characteristic tone is emitted and the password has been reset.

NOTE

The original passwords are "123", "456" or "789".

The safe box has two ways of locking:

– Standard Locking:

  1. Close the door.
  2. Check the door has been automatically locked.

– Locking After an Emergency Opening:

  1. Close the door
  2. Check the door has been automatically locked.
  3. Remove the key.

To change the password (the door should be opened):

1. Press "*". A characteristic tone is emitted and the ON/OFF indicator comes on.
2. Before 8 seconds had past, press the password change button, located at the back of the door in the battery holder. A characteristic tone is emitted.
3. Enter the old password.
4. Press "#". A characteristic tone is emitted.
5. Enter the new password. The length of the new password should be between zero and 20 digits.

   If the new password exceeds this length, the system will go automatically off and the procedure will be cancelled, keeping the previous password.
6. Press "#". A characteristic tone is emitted.
7. Enter again the new password.
8. Press "#". A characteristic tone is emitted.

   If the second password doesn't match with the first one, a characteristic tone is emitted and the original one will be kept.

   Before closing the door, enter the new password to test it.

The safe box has a low battery detector and, each time it is turned on, the battery status is checked. If a low battery level is detected, a warning tone is emitted and the low battery indicator comes on intermittently, although normal operation is allowed.

CONTROLS AND INDICATORS

(1) Keypad

(2) Low Battery Indicator:

- *ON:* the battery is almost discharged.

(3) Emergency Key Bolt

(4) ON/OFF Indicator:

- *ON:* the password can be entered.

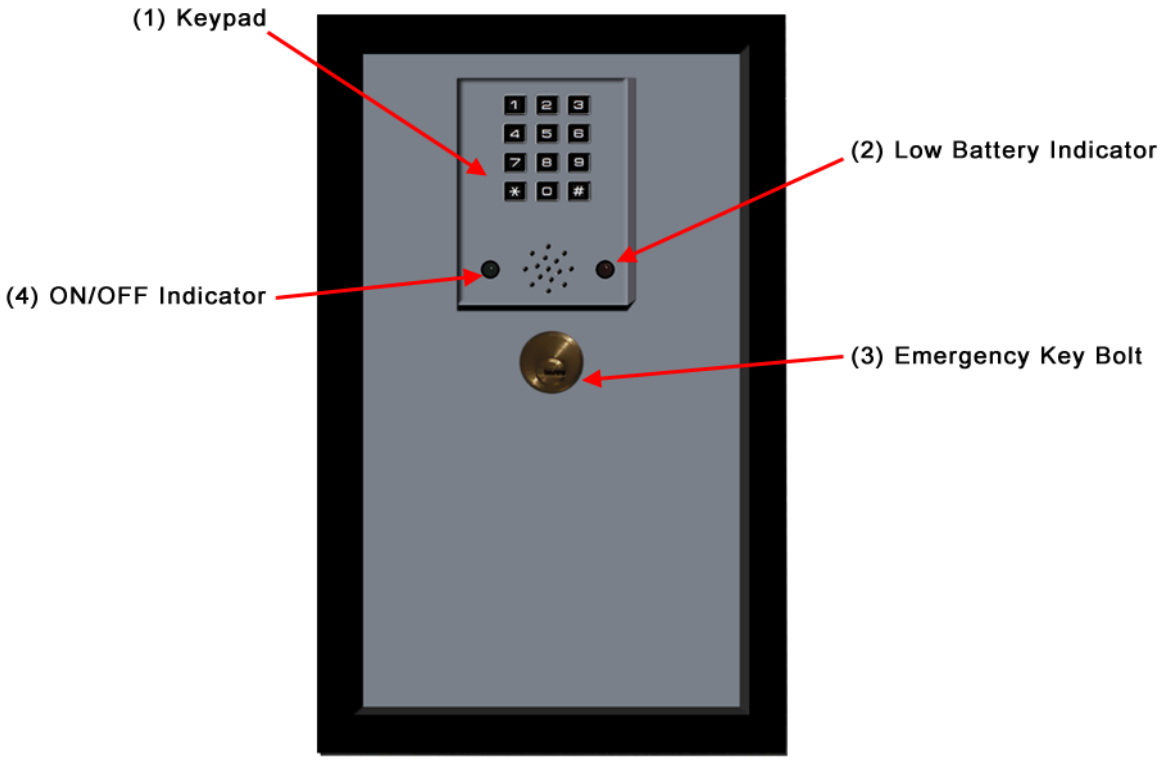


Figure 25-19 Safe Box - Controls and Indicators

AERIAL DELIVERY

The C-295M has the systems required to perform airdrop procedures.

DESCRIPTION

The main components are:

- ***Paratroops Lights*** (refer to CHAPTER 33 - LIGHTS)
- ***Winch:*** (refer to WINCH, in this chapter)
- ***AERIAL DELIVERY Control Panel:*** located in the cockpit pedestal, enables system management and monitoring.

Figure 25-20 Aerial Delivery - Components

OPERATION

The operation is:

- ***Paratroops Jump:*** the AERIAL DELIVERY control panel manages the paratroops lights (refer to CHAPTER 33 - LIGHTS).

NOTE

This airdrop procedure and additional ones are further documented in the Cargo Loading Manual.

CONTROLS AND INDICATORS

(1) RED Pushbutton:

(refer to PARATROOP LIGHTS, in CHAPTER 33 - LIGHTS)

(2) GREEN Pushbutton (under guard):

(refer to PARATROOP LIGHTS, in CHAPTER 33 - LIGHTS)

(3) HORN Pushbutton (under guard):

- *ON light on:* the paratroop jump horn is activated.

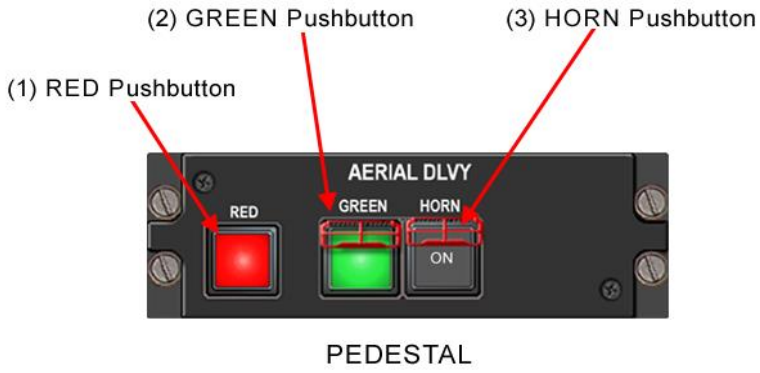


Figure 25-21 Aerial Delivery - Controls and Indicators