TABLE OF CONTENTS

TABLE OF CONTENTS

Airbus
A318/A319/A320/A321

ATA 25
Equipment & Furnishings

Rev.-ID: 1MAY2019
Author: JG

EASA Part-66
B1/B2

Training Manual

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ATA 25 EQUIPMENT/FURNISHINGS

25-00 EQUIPM. /FURNISH. GENERAL

GENERAL DESCRIPTION

GENERAL

The equipment and furnishings which are installed in the aircraft give comfort to passengers and crew. The equipment and furnishings are installed in the cargo compartments for handling and safety of the cargo. The emergency equipment is installed in the aircraft for the safety of the passengers and the crew.

COMPONENT LOCATION

The different items of the equipment and furnishings are installed:

- in the cockpit,
- in the passenger compartment,
- in the buffet and galleys,
- in the lavatories,
- in the cargo compartments,
- the emergency equipment,
- in the accessory compartments,
- the thermal and acoustic insulation.

Cockpit

The cockpit has:

- the cockpit seats,
- the linings and furnishings,
- the cockpit equipment racks,
- the flight crew foot warmers.

Buffet and Galleys

They are used to keep and prepare food, hot and cold drinks:

- the forward galleys,
- the aft galleys,
- the galley equipment.

Lavatories

Each lavatory has a washroom function. Conditioned air, potable water and electricity is supplied to the lavatories. There are:

- the forward lavatories,
- the aft lavatories,
- the razor supply,
- the lavatory equipment.

Passenger Compartment

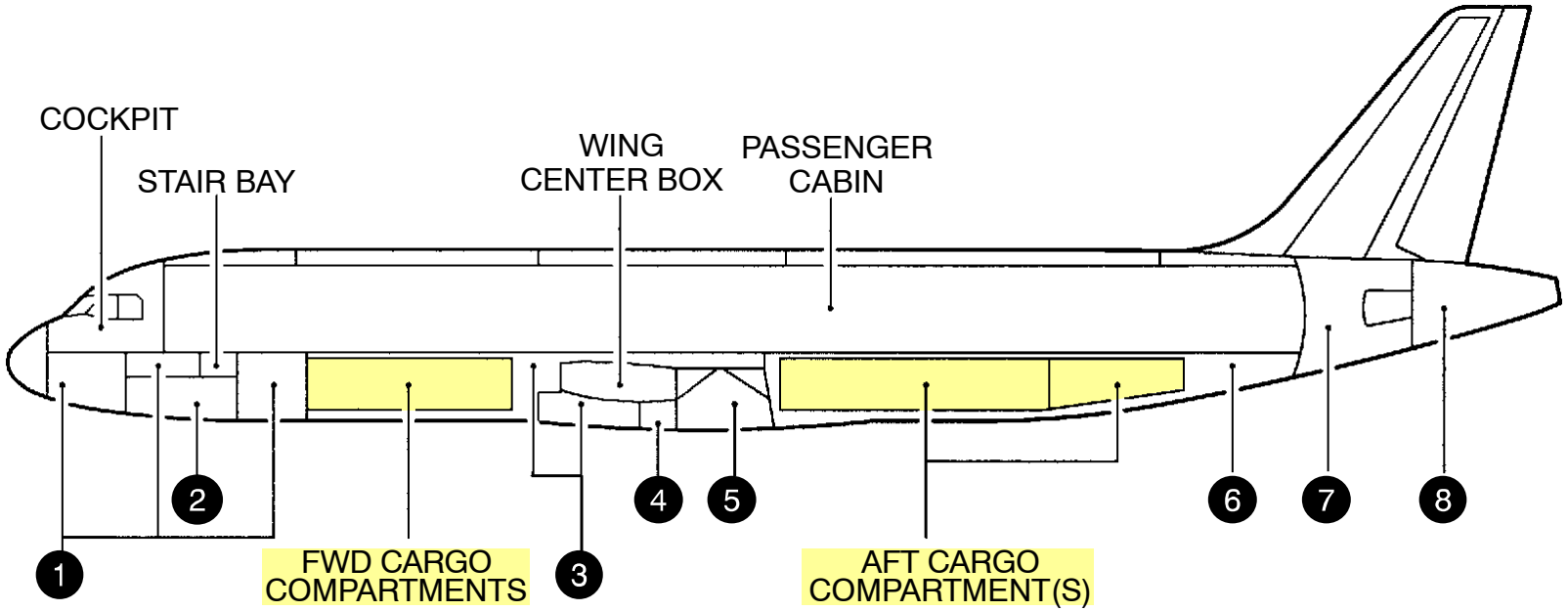
The passenger compartment has:

- the passenger compartment seats,
- the cabin attendant seats,
- the linings and furnishings,
- the overhead stowage compartments,
- the **PSIU** (**P**assenger **S**ervice/**I**nformation **U**nits),
- the curtains and partitions,
- the ancillary equipment,
- the floor covering,
- the electrical service supply.

Emergency Equipment

The emergency equipment is installed in the aircraft for the safety of the passengers and crew. The emergency equipment is:

- the cockpit escape facilities,
- the cabin escape facilities,
- the evacuation signaling equipment,
- the first aid equipment,
- the miscellaneous emergency equipment,
- the floatation and survival equipment,
- the supplementary medical equipment.



ACCESSORY COMPARTMENTS:

1. TWO AVIONIC COMPARTMENTS
2. NOSE LANDING GEAR
3. AIR CONDITIONING
4. HYDRAULICS
5. MAIN LANDING GEAR HYDRAULICS
6. WATER/WASTE
7. SEVERAL EQUIPMENT
8. AUXILIARY POWER UNIT

CARGO COMPARTMENTS:

The aircraft has three lower–deck cargo compartments, the FWD cargo compartment, the AFT cargo compartment and the BULK cargo compartment.

- the lower–deck Cargo Loading System (CLS),
- the drainage – FWD and AFT cargo compartment,
- the linings and furnishings in the FWD cargo compartment,
- the linings and furnishings in the AFT cargo compartment.

THERMAL AND ACOUSTIC INSULATION

The thermal and acoustic insulation is installed inside the fuselage. This isolates the fuselage against the outside temperature and noise.

Figure 1 Compartments–Location

25–70 ACCESSORY COMPARTMENTS

ACCESSORY COMPARTMENTS DESCRIPTION

General

The accessory compartments are located on the inner or on the outer areas of the pressurized fuselage. The avionics compartments are in the pressurized area below the cockpit (above the nose landing–gear well). They are identified as the FWD, the lateral and the AFT avionics compartments.

The compartments have:

- heat and sound insulation,
- maintenance lighting,
- air–cooled racks for the electrical and electronic equipment and their related units.

The nose landing–gear well is below the avionics compartment and stair bay, in the areas of Zones 123/124.

The main landing–gear well is between the FWD and AFT cargo compartments, in the areas of Zones 147/148.

Equipment compartments are located in the rear of the aircraft, between FR65 and FR80, in the areas of Zones 171/172, 311/312 and 313/314.

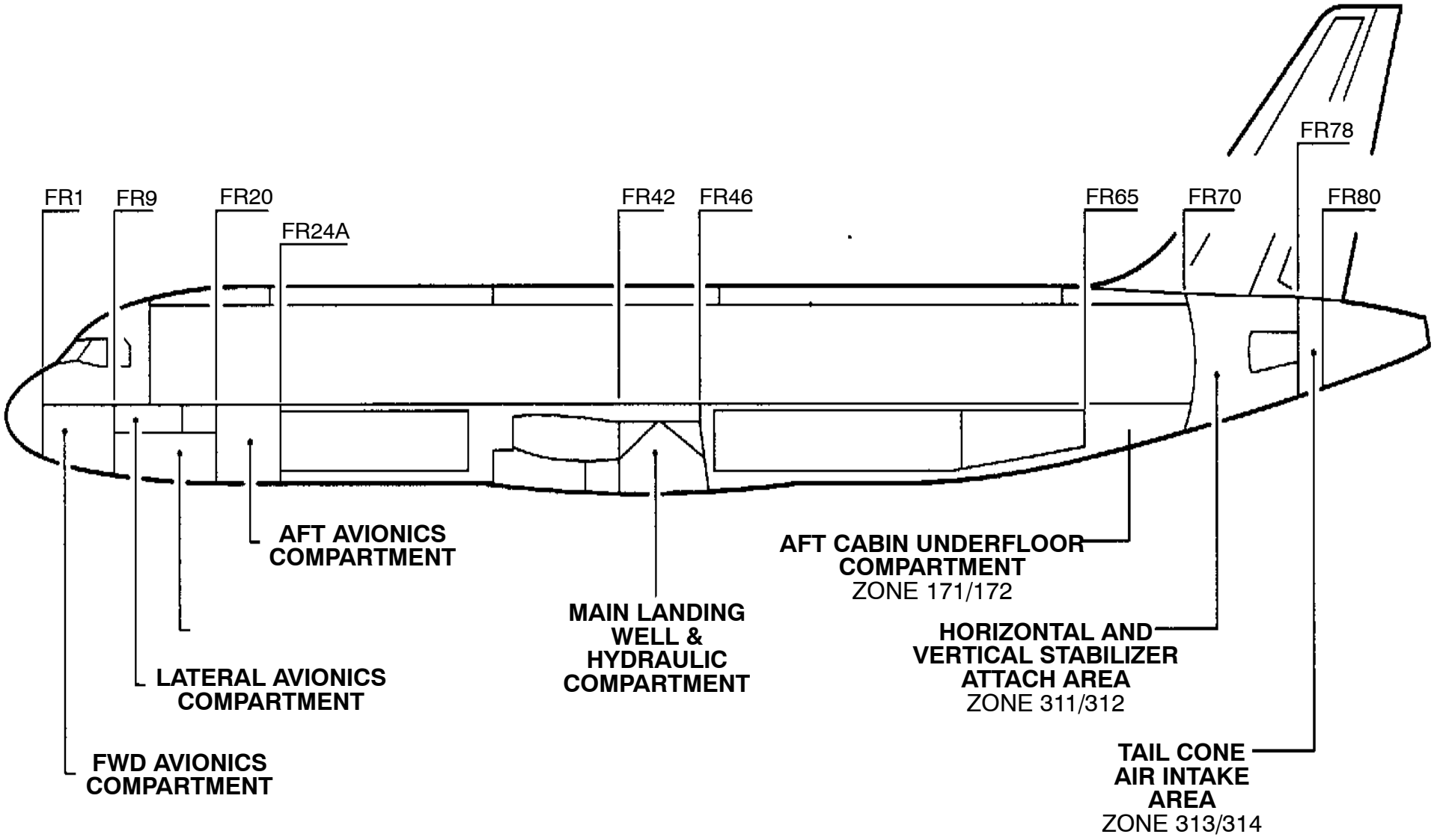


Figure 2 Accessory Compartments–Location

25–10 COCKPIT

COCKPIT GENERAL LAYOUT

General Description

The cockpit comprises the area above the floor structure between frames 1 and 12. Access to the cockpit is gained via the left forward passenger/crew door and the cockpit door.
The cockpit is equipped with adjustable seats for two crew members, a third occupant seat and a folding seat for a fourth occupant.
Various furnishings and equipment are fitted in the cockpit for the comfort, convenience and safety of the occupants such as reading lights, map lights and also a quick access to the oxygen masks.

The cockpit is equipped with four seats:

- a Captain seat
- a First Officer seat
- a Third Occupant seat located against the right aft panel
- a folding seat for the Fourth Occupant located in the cockpit left aft section.

Captain and First Officer Seats

The Captain and First Officer seats are symmetrical and have the same function.
They are equidistant from the aircraft centerline:

- Y +/– 530 mm (Y +/– 20.88 in.) The base of the seats is attached to the floor by means of eight hexagonal head screws.

Third Occupant Seat

The Third Occupant seat stands apart from the aircraft centerline:

- Y –86 mm (Y –3.39 in.) but can move to Y –35 mm (Y–1.38 in.). When aligned with the aircraft centerline and in the extreme forward position the seat can take three additional positions.

Fourth Occupant Seat

The Fourth Occupant seat is of the folding type and has no adjustment.
It forms an angle of 22.8 degrees with respect to the cockpit aft partition.

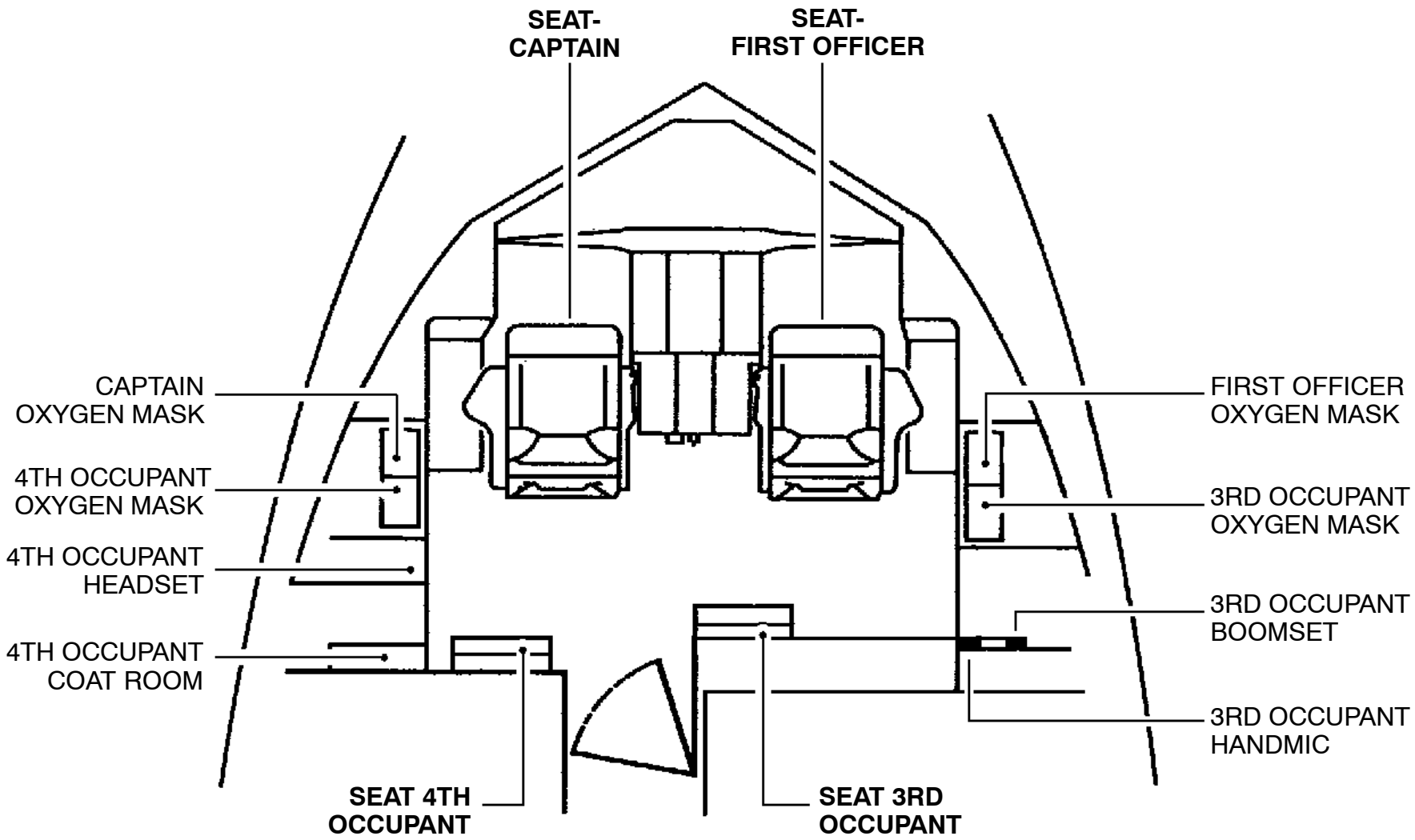


Figure 3 Cockpit Seats Location

CAPTAIN & FIRST OFFICER SEAT DESCRIPTION

General

The Captain and First Officer seats are secured to the cockpit floor. The seat moves longitudinally and vertically. In the rearmost position the seat moves sidewise towards the console, which increases the space between the pedestal and the seat and therefore enables passage of the seat occupant. This is the seat stowed position.

Controls

Manual controls are fitted to the seats. They serve to unlock the seat and allow to position it in different configurations.

Electrical controls are also available. They consist of a motor coupled to two reduction gears. The motor is controlled by two three–position switches.

The gear motor assembly is overridden by the manual controls. Additional manual controls are used to adjust the backrest and lumbar rest positions. All the controls are of easy access and enable the occupant to select the desired position.

Seat equipment

The backrest incorporates a life vest fitted in a housing closed by means of two magnets. A lumbar rest adjustable in the vertical and horizontal directions enables adaptation of the seat to the occupant. It is possible to adjust the pedestal side armrest by means of a knurled knob located in the front. The armrest is hinged to the backrest. It is therefore possible to lift it vertically and stow it behind the backrest. The sidestick armrest located on the outboard side of the seat is provided with two adjustment knobs.

These knobs are used to adjust the height and the tilt angle of the side stick armrest so that the pilot can rest his arm in its optimum position with respect to the side stick controller. Two position indicators show the selected position. The armrest is fixed to the seat pan structure and is not affected by backrest movements. It can be folded back to a vertical position to enable easy access to the crew briefcase or console.

The safety harness comprises five straps and an inertia reel. The inertia reel can be locked by a control lever located behind the seat on the right side.

Four lamps which serve to light the floor are located under the Captain and First Officer seats (one under each corner of the seat pan). This lighting is controlled from the instrument panel.

NOTE: The Captain and First Officer seats are symmetrical and their operation is identical.

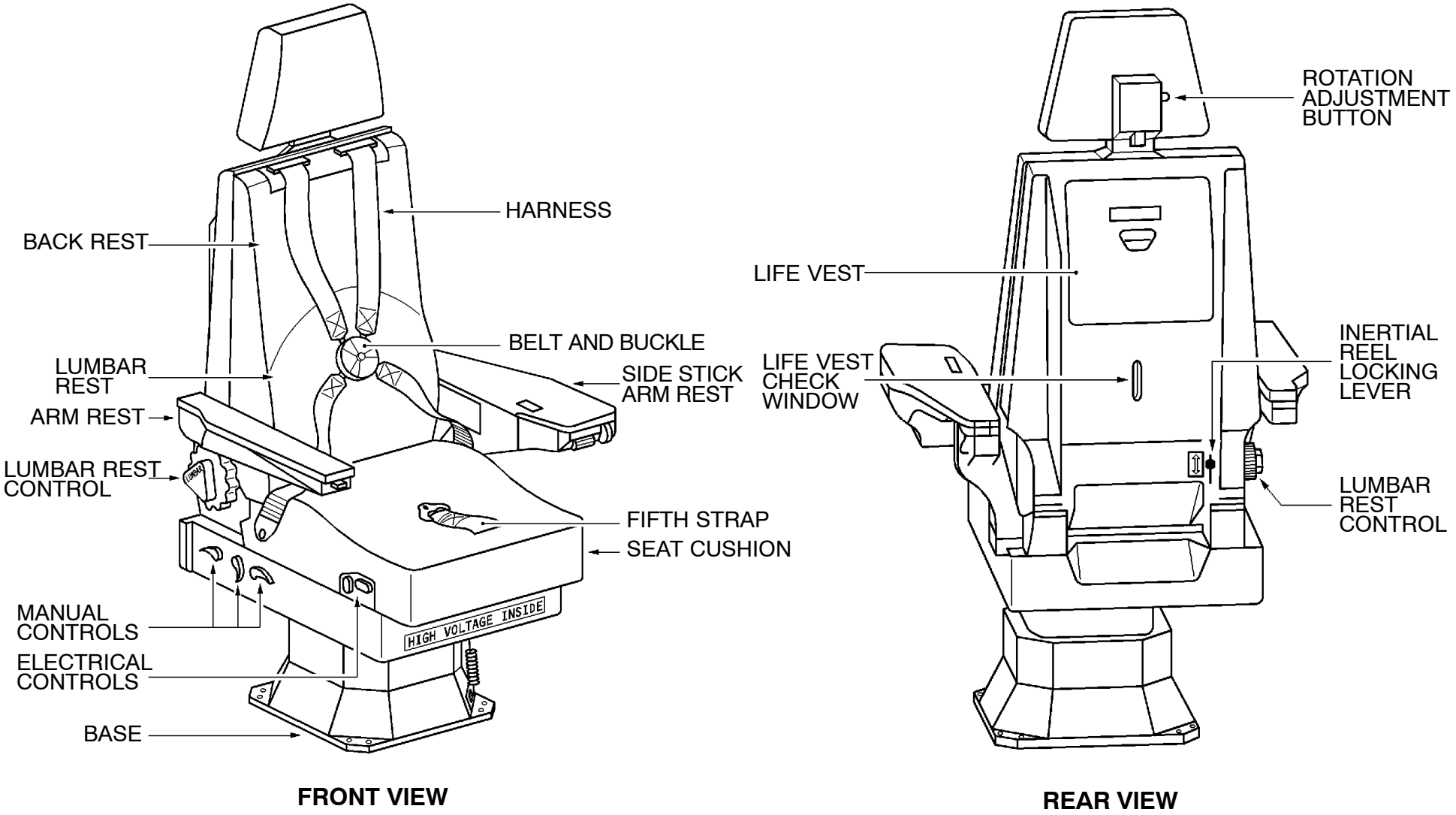


Figure 4 Captain/First Officer Seat (Typical)

CAPT. & 1. OFFICER SEAT MANUAL OPERATION

MANUAL CONTROL OF THE VERTICAL TRAVEL

Up travel

To move the seat in the up direction pull the control handle, marked V and located on the inboard side of the seat pan, upwards in order to unlock the seat. Then, by taking your weight off the seat, adjust the seat to required position, then release the handle. A gas cylinder compensates for the weight of the seat. (two grasp handles are located above each pilot seat)

Down travel

To move the seat in the down direction, pull the control handle upwards in order to unlock the seat. The weight of the occupant is sufficient to move the seat downwards. To lock the seat in position, release the handle. The down movement is slowed down by means of a gas cylinder.

MANUAL CONTROL OF THE HORIZONTAL TRAVEL

To move the seat forwards or backwards, pull the control handle marked H, located on the pedestal side of the seat, upwards to unlock the system. When the desired position is reached, release the handle to lock the system. Horizontal travel indicators, located on the pedestal side of the seat, give the longitudinal position of the seat. The seat is held in the required position by means of a locking pin which slides into a drilled fitting attached to the seat pan.

BACKREST ADJUSTMENT

The position of the backrest can be adjusted from 7 deg. to 34 deg. with respect to the vertical. This can be achieved by pulling the control handle marked R, located on the pedestal side of the seat. The lever acts on two locks by means of a control and 2 cables. A gas cylinder damps the backwards movement of the backrest and acts as return spring when the backrest is raised to the 7 deg. position.

LUMBAR REST ADJUSTMENT

Two coaxial knobs, located on the pedestal side of the backrest enable the lumbar rest adjustment in the vertical and horizontal directions. The round serrated control knob ensures the vertical lumbar rest adjustment by means of a rack and pinion system. The triangular knob ensures the depth adjustment of the lumbar rest by means of a cam–mounted rack and pinion assembly.

ARMREST ADJUSTMENT

Inboard armrest

The inboard armrest (pedestal side) can be raised vertically and stowed behind the backrest. A knob located on the front of the armrest ensures height adjustment by means of a screw–nut system and associated stop. (continuous adjustment from 15 deg. downwards to 10 deg. upwards)

Side stick armrest

The side stick armrest is composed of three main sections. These are the fixed arm, the carrier arm and the side stick table.

The fixed arm supports the carrier arm and side stick table assembly and is attached to the seat pan.

The carrier arm, by a rotation of 18 deg. max. upwards, with respect to the horizontal, around a hinge pin, located on the fixed arm, enables height adjustment of the side stick table. The movement is given by a knob located on the outboard side of the armrest. This knob transfers the rotary movement to a screw–nut system.

The nut is connected to a link and 2 rollers which transform the translation movement of the nut into a rotary movement of the carrier arm around the fixed arm. The tilt angle of the armrest table can be adjusted. A knob located on the front of the armrest enables this adjustment. The principle of the adjustment mechanism is the same as the one described above except at the rotation hinge pin is located on the carrier arm. Adjustment is up to 30 deg. downwards with respect to the horizontal.

A position indicator including two scales is integrated in the side stick table. The scale on the seat side shows the tilt angle adjustment of the table. The scale on the outboard side shows the table height. A wheel, located on the front of the table, serves to avoid interference between the armrest and the lateral console when the seat is moved forwards with the table fully inclined.

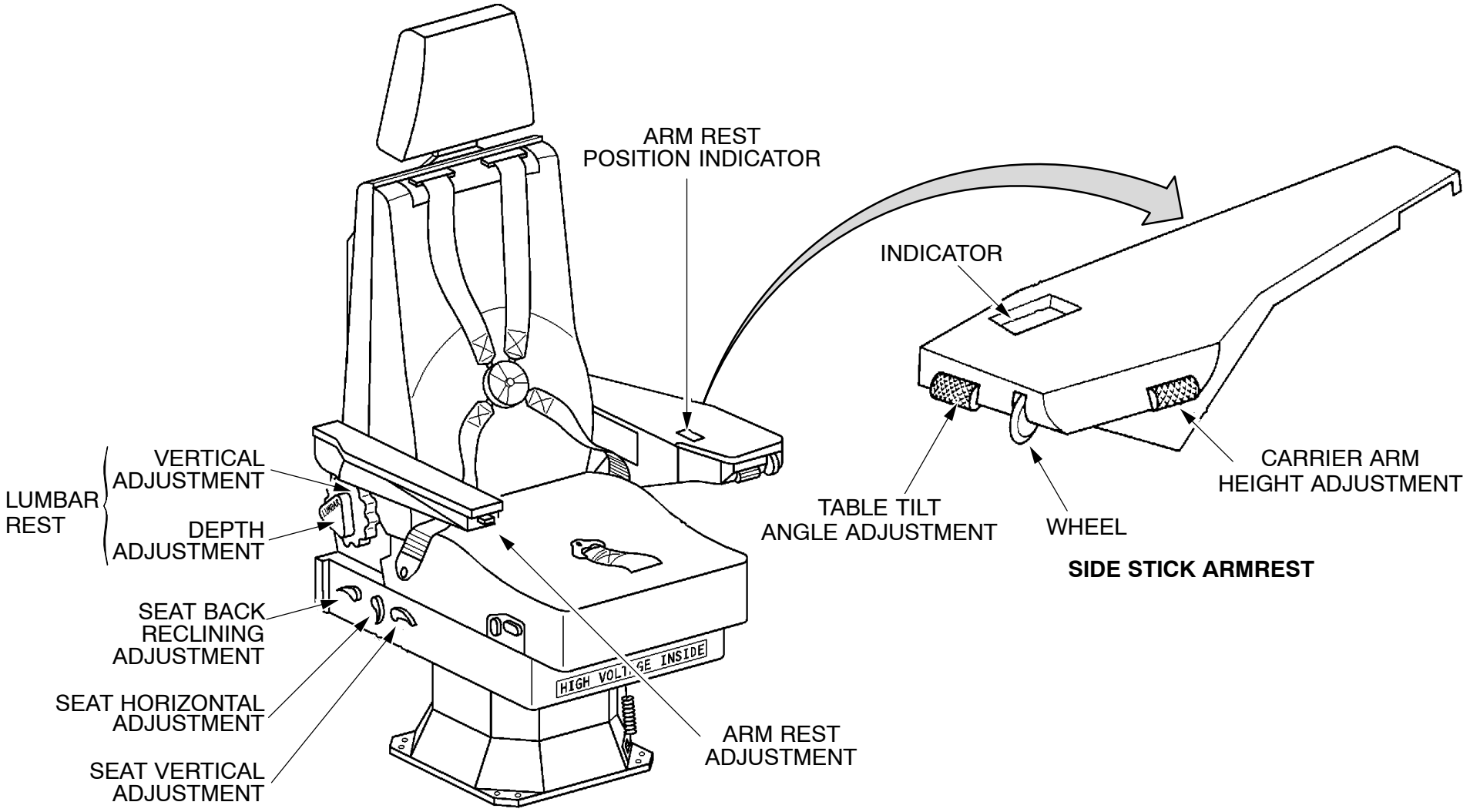


Figure 5 Captain/First Officer Seat Manual Control

SAFETY HARNESS (TYPICAL)

Safety harness

The straps can be clicked into the buckle in any order. Turning the unlocking control through a 1/4 turn, either clockwise or counterclockwise, releases the two shoulder straps and the lap belt. Pressing the control located on the top of the buckle releases the shoulder straps alone. A control lever, located on the pedestal side of the seat backrest, serves to lock the inertial reel. To lock the mechanism the lever must be in the down position. To unlock the mechanism the lever must be in the up position.

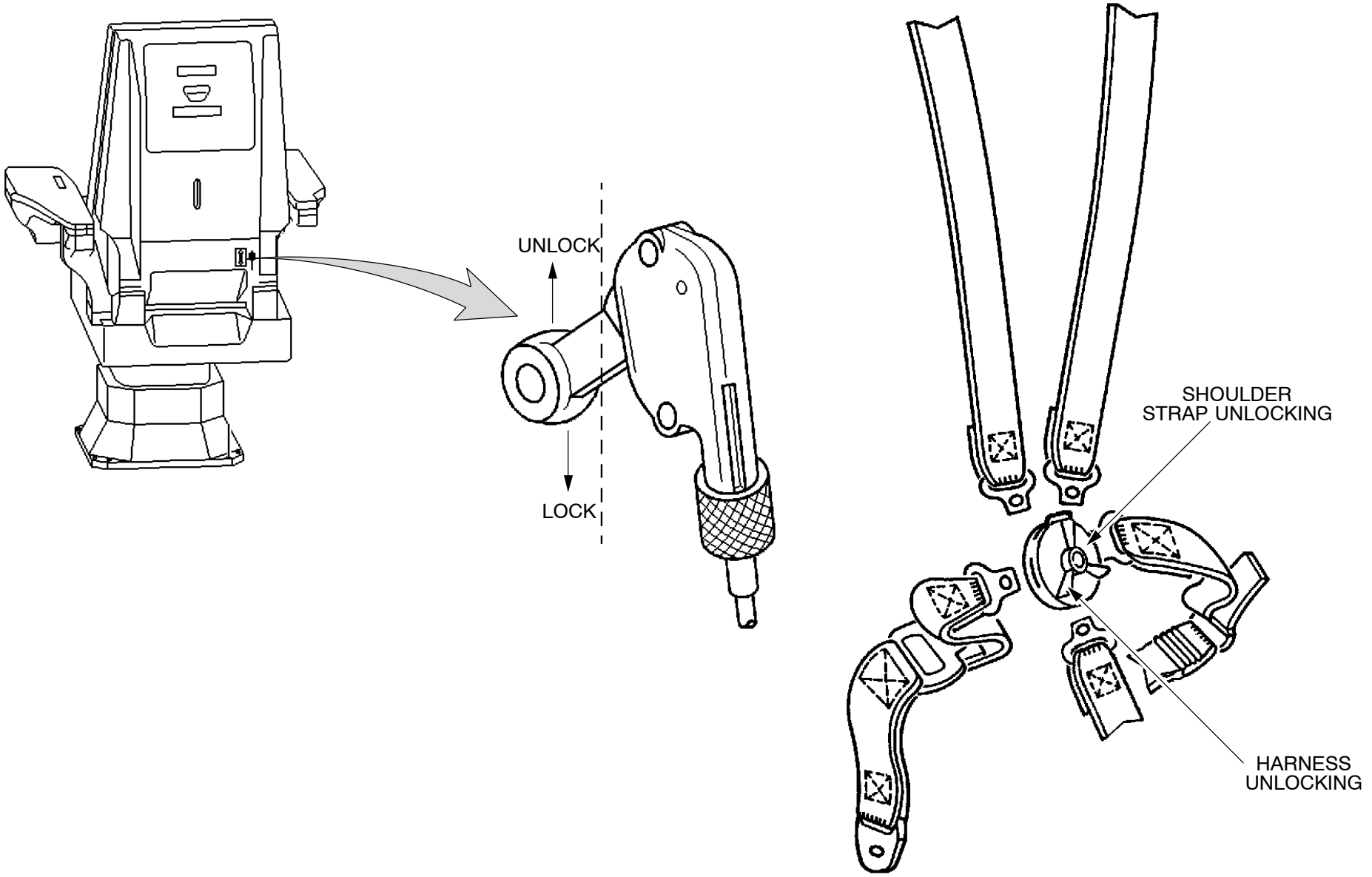


Figure 6 Safety Harness (Typical)

CAPT. & 1. OFFICER SEAT ELECTRICAL CONTROL

Vertical control

If the circuit is supplied with power, place the control switch located on the inner side of the seat pan in the up or down position until the seat reaches the required position. Seat movements are obtained by the gear motor associated with the ball–nut/screw system. The movements are limited by stops and an overtorque detector integrated in the gear motor assembly.

Horizontal control

The three–position switch controls the gear motor connected to a rack and pinion system located under the seat pan. When the seat reaches its limit position and overtorque is detected the motor power supply is cut off. The detector is integrated in the gear motor. The gear motor assembly locks the seat on the rack.

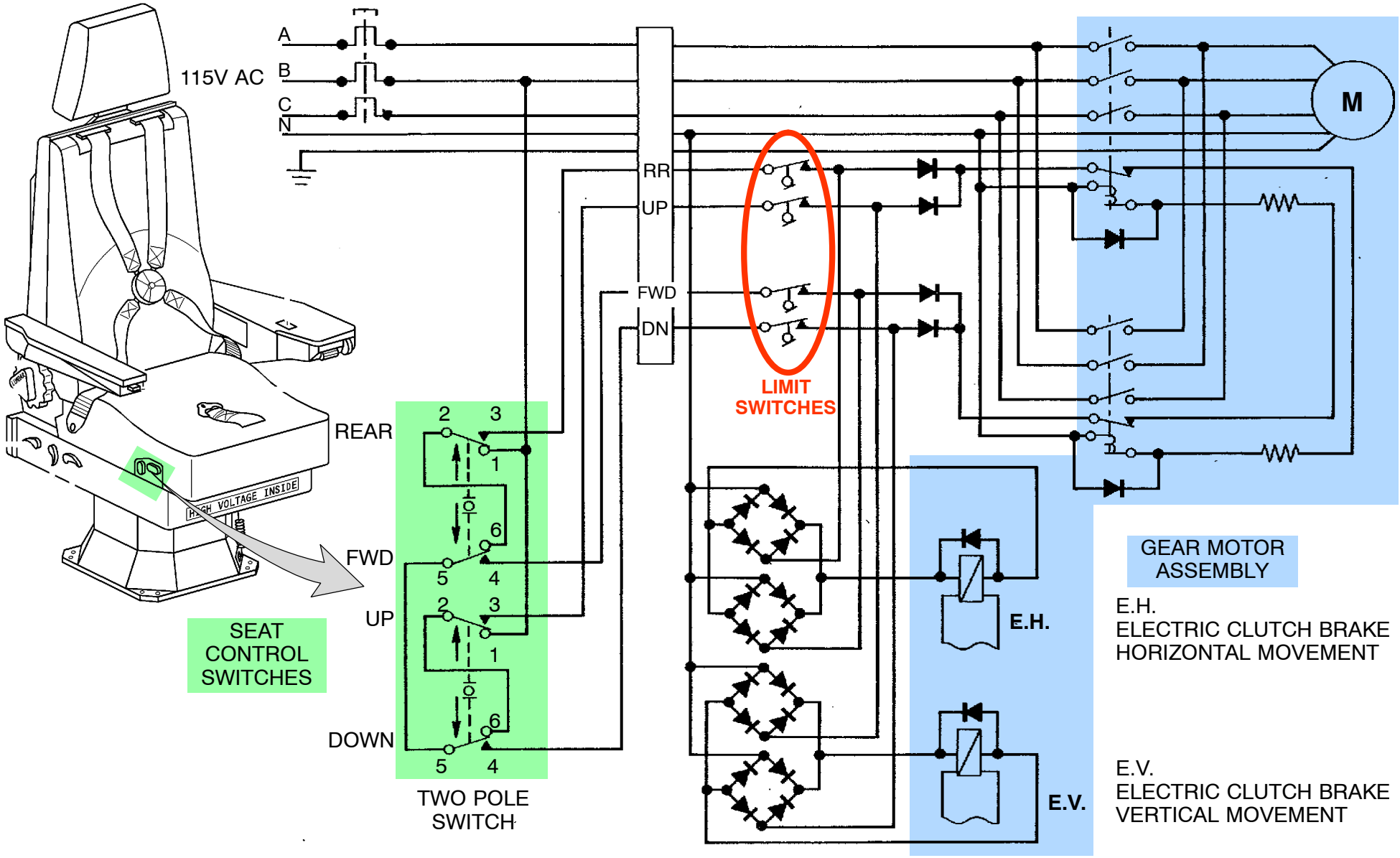


Figure 7 Captain/First Officer Seat Electrical Control

THIRD & FOURTH OCCUPANT SEAT DESCRIPTION

Third Occupant Seat General

The 3rd Occupant seat is a folding seat attached to the right rear panel in the cockpit. It can slide along the Y–axis to take up a position on the aircraft centerline. No longitudinal adjustment is provided. The seat pan unfolds and locks only in the unfolded position, in the aircraft centerline.

Controls

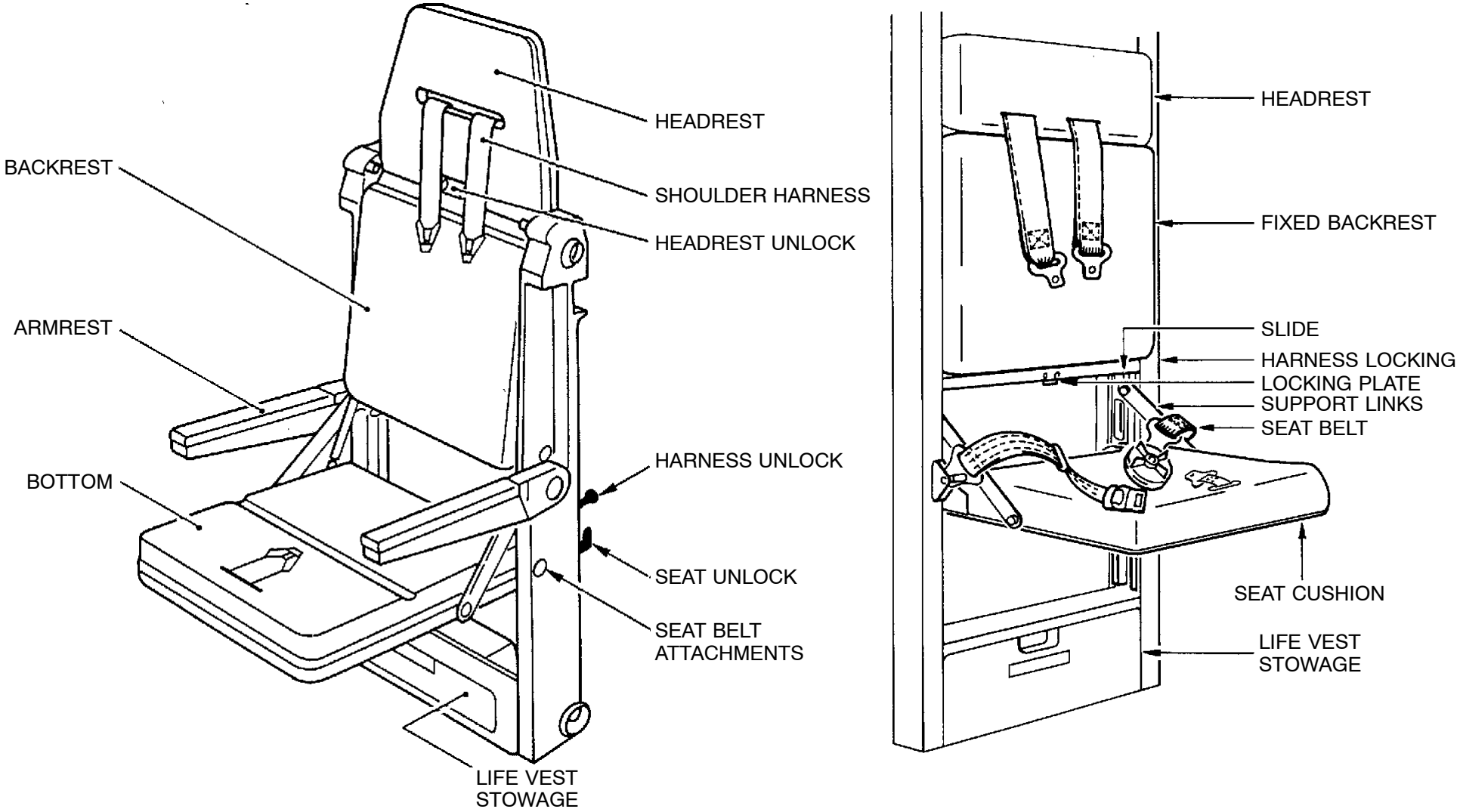
A manual control enables the seat to be moved from its stowage position to its utilization position on the aircraft centerline. A second control serves to unlock the headrest and a third control serves to lock the inertial reel.

Seat equipment.

The non–adjustable armrests pivot on the seat uprights. The headrest can be folded down so that the circuit breaker panel can be opened while the seat is in its stowed position. A compartment closed by VELCRO tapes and containing a life vest is provided in the lower part of the seat. The safety harness includes five straps and an inertial reel controlled by a handle located on the left of the seat. This handle serves to lock and unlock the inertial reel.

Fourth Occupant Seat General

The Fourth Occupant seat is a folding seat located against the left rear partition in the cockpit. The seat cushion is folded down into place. It is returned to its stowed position by pressing upwards and against the partition. The lower section of the seat is provided with a compartment containing a life vest and closed by VELCRO tapes. The straps of the safety harness can be clicked into the buckle in any order. Turning the unlocking control through a 1/4 turn, either clockwise or anticlockwise, releases the two shoulder straps and the lap belt. Pressing the control located on the top of the buckle releases the shoulder straps alone. The inertial reel locking control is located in the coat storage compartment.



THIRD OCCUPANT SEAT

FOURTH OCCUPANT SEAT

Figure 8 Third & Fourth Occupant Seats

COCKPIT EQUIPMENT RACKS DESCRIPTION

General

The Rear Panel 120VU is installed in the cockpit, it is located on the right hand side, behind the First Officer seat.

This rack houses:

- in the lower section, the AC and DC electrical power centers,
- in the center section, the primary circuit breakers and the power circuits,
- in the upper section, the system circuit breakers requiring no action in flight.

Rack Lower Section

This section of the rack is divided into several compartments. Each compartment houses electrical generation equipment such as contactors, TRs, etc. associated with the corresponding systems:

- system 1 AC compartment associated with engine 1 generator,
- system 2 AC compartment associated with engine 2 generator,
- APU system and ground power unit AC compartment associated with the APU generators and the ground power unit,
- system 1 DC compartment,
- system 2 DC compartment.

Rack Center Section

This section of the rack houses the primary circuit breakers associated with the electrical generation systems installed in the lower section of the rack and some primary circuit breakers. These circuit breakers are grouped per system, their functional designation is given and they are geographically located by means of placards.

Rack Upper Section

This section of the rack houses, split over two panels, all the distribution circuit breakers protecting the electrical lines supplying the systems. These circuit breakers are grouped per system, their functional designation is given and they are geographically located by means of placards.

Access to the various components

Access to the AC and DC electrical power centers is gained by removing the cover plates. Access to the inside of the circuit breaker panels is gained by opening the hinged panels.

CAUTION: OBEY THE SAFETY PRECAUTIONS, MENTIONED IN THE AMM, WHEN OPENING THE ACCESS COVERS TO THE ELECTRICAL COMPONENTS!

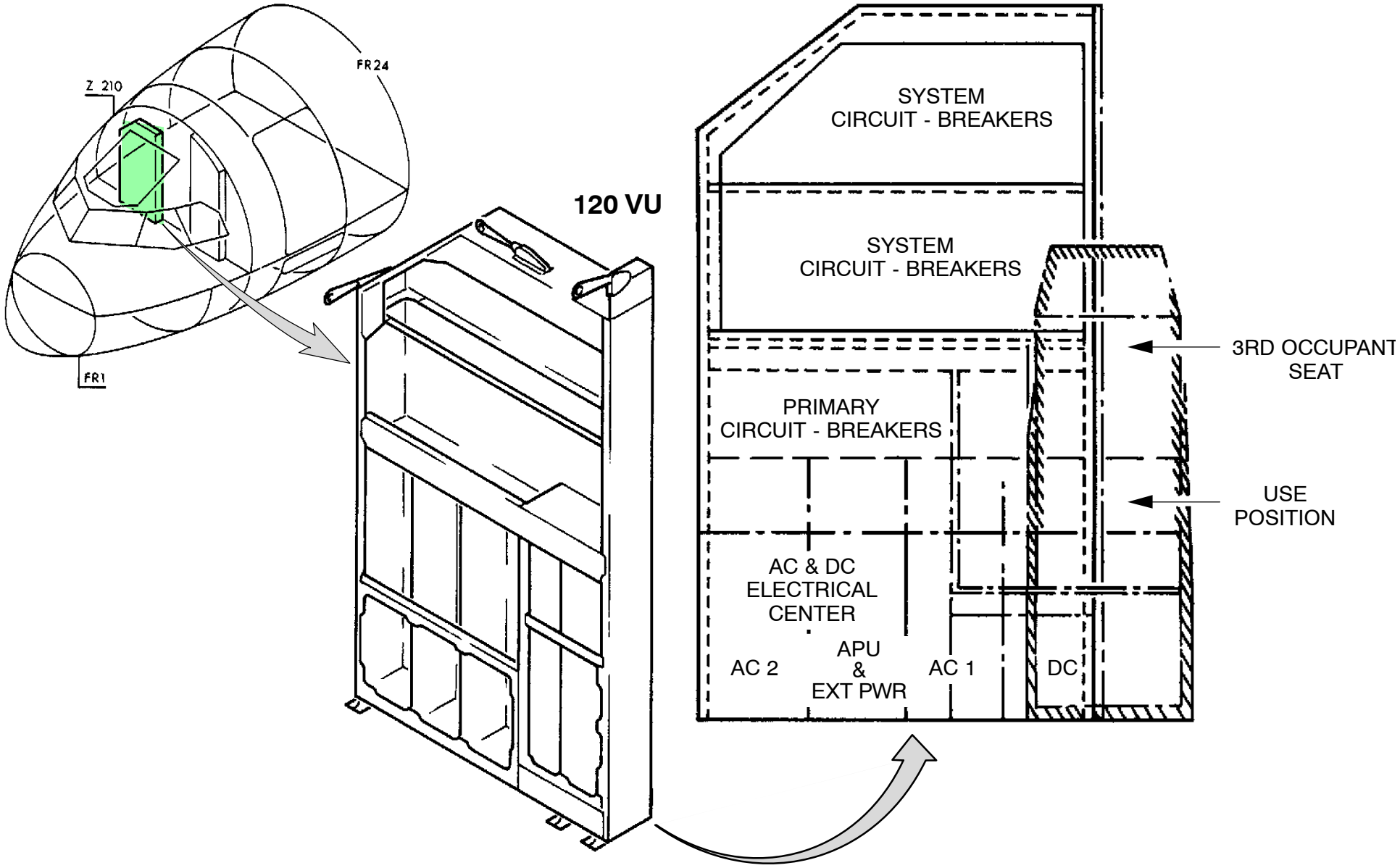


Figure 9 Rear Panel 120 VU Location

FLIGHT CREW FOOT WARMERS DESCRIPTION (DLH OPTION)

General

The flight crew electrical foot warmers consist of heating panels controlled by a switch located on the Captain and the First Officer lighting/LOUD SPEAKER control panels.

Description

Each pair of foot warmers is controlled by a switch supplied with 115V AC. An electronic circuit integral with each foot warmer controls the temperature level.

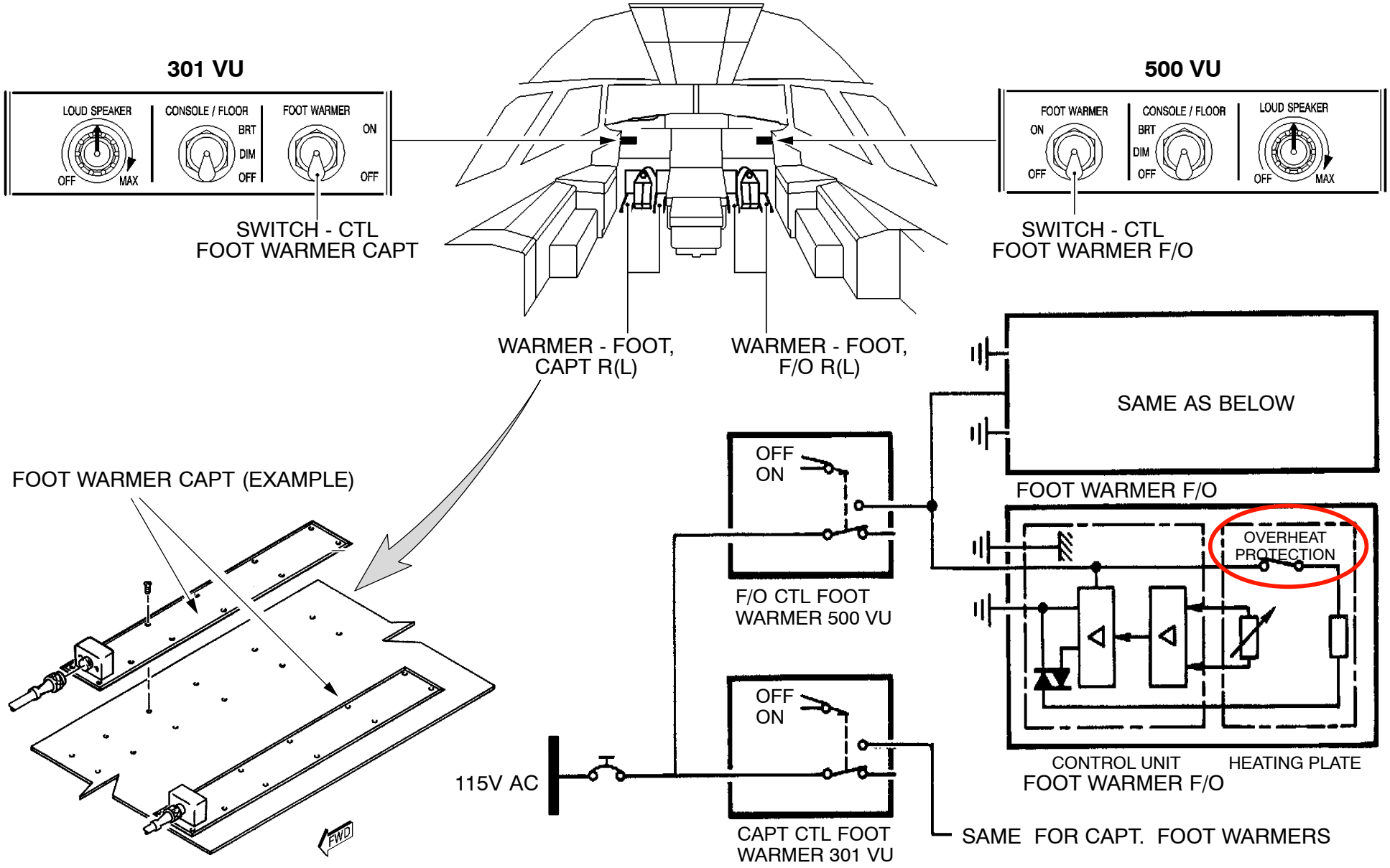


Figure 10 Flight Crew Foot Warmers Description (DLH Option)

25–20 PASSENGER COMPARTMENT

PSIU INTRODUCTION

General

The **PSIU**s (**P**assenger **S**ervice/**I**nformation **U**nits) are installed in the passenger service channel to give service and information to the passengers.

System Introduction

The PSIUs are installed in the passenger service supply channels. The passenger service supply channels are located on the bottom side of the the overhead stowage compartments. The PSIU's are hung from the attachment rails and held in position with the section hose. The clamping blocks, installed in different positions prevent the PSIU's from moving in a FWD/AFT direction. The spaces between the PSIU's are filled with blank filler panels. The filler panels have different dimensions. This will let you position the PSIU's correctly to agree with customer seat layouts.

Each PSIU has two primary units:

- the **PSU** (**P**assenger **S**ervice **U**nit), installed above each seat row,
- the PIU (**P**assenger **I**nformation **U**nit), installed above each second seat row.

Interface

The PSIUs have interfaces with:

- the air conditioning system,
- the communication system,
- the lighting system and,
- the oxygen system.

For access to these system interfaces remove the related PSIU panels and/or the adjacent filler panels.

Component Presentation

Each Passenger Service Unit (PSU) has:

- an attendant call panel,
- a reading light panel,
- a fresh air outlet panel,
- an emergency oxygen mask container.

Each Attendant Call Panel has:

- an attendant call/reset push button,
- reading light ON/OFF switches,
- lighted seat numbers and seat row number,
- lighted SMOKER/NO SMOKER sign.

Reading Light Panel

The number of reading lights on each reading light panel agree with the customer seat layout. Each reading light is adjustable and can be switched ON or OFF independently with its related switch. The Reading light switches are located on the attendant call panel.

Fresh Air Outlet Panel

The number of fresh air outlets on each fresh air outlet panel agree with the customer seat layout. Each fresh air outlet is adjustable and can be opened or closed independently.

Emergency Oxygen Mask Container

The number of emergency oxygen masks in each container agree with the customer seat layout. The oxygen masks fall from the container immediately, if there is a sudden decrease in cabin pressure.

Passenger Information Units (PIUs)

Each PIU is a single panel which has:

- a loudspeaker,
- a lighted sign FASTEN SEAT BELT,
- a lighted sign NO SMOKING.

The PIUs are installed only above every second seat row.

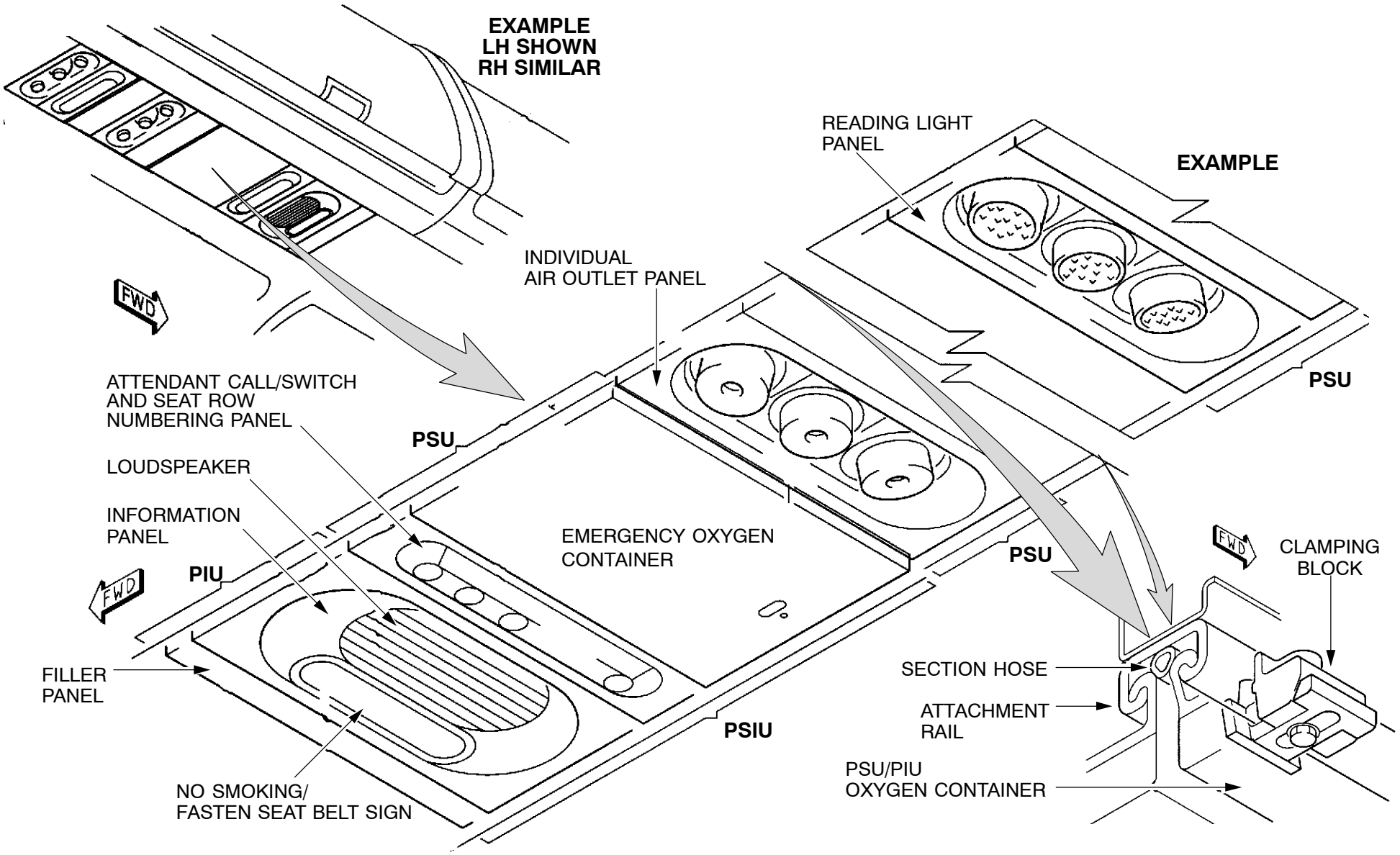


Figure 11 PSU and PIU-Component Layout

PASSENGER COMPARTMENT INTRODUCTION

GENERAL DESCRIPTION

The passenger compartment is in the upper fuselage section. It is between the partition on FR12/13of the flight compartment and the aft pressure bulkhead on FR70. The cabin is divided into utility areas and seating areas.

The passenger/crew doors and emergency exits are also included in the cabin area. The utility areas are adjacent to the cabin entrances. The passenger seating area is between the forward utility area and the aft utility area. Partitions and curtains divide the utility areas from the seating areas.

GENERAL LAYOUT

Seating area

The equipment and furnishings which are installed in the passenger seating area are:

- passenger seats,
- cabin attendant seats,
- linings and furnishings that cover the compartment structure,
- overhead stowage compartments are for stowage of passenger carry–on baggage and other equipment,
- passenger service/information units,
- textile floor coverings.

Utility area

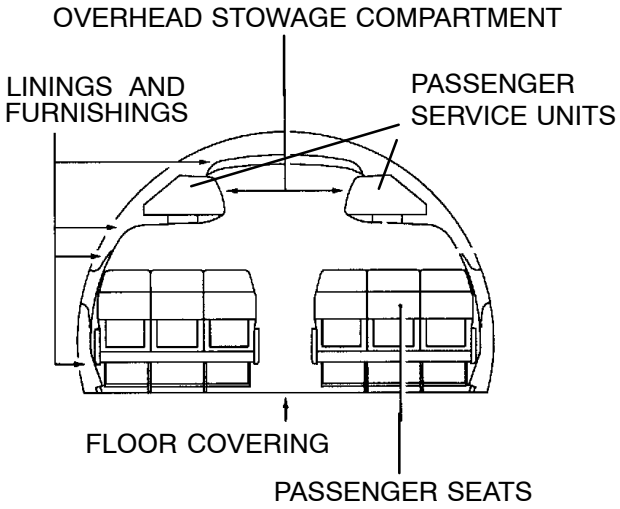
The equipment and furnishings which are installed in the utility areas are:

- cabin attendant seats,
- **PSUs** (**P**assenger **S**ervice **U**nits) are installed at passenger and attendant locations throughout the cabin,
- curtains and partitions are used to divide the utility areas and the seating sections,
- ancillary equipment has different stowage units,
- non-textile floor coverings,
- vacuum cleaner sockets give electrical power to clean the cabin interior
- galleys,
- lavatories.

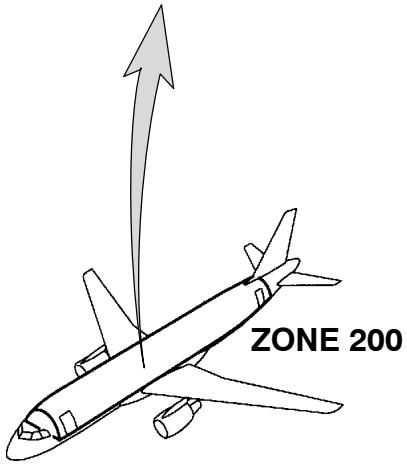
Additional equipment

Additional equipment also installed in the cabin is:

- emergency escape slide/slide rafts,
- first aid equipment,
- miscellaneous emergency equipment.



PASSENGER COMPARTMENT CROSS SECTION



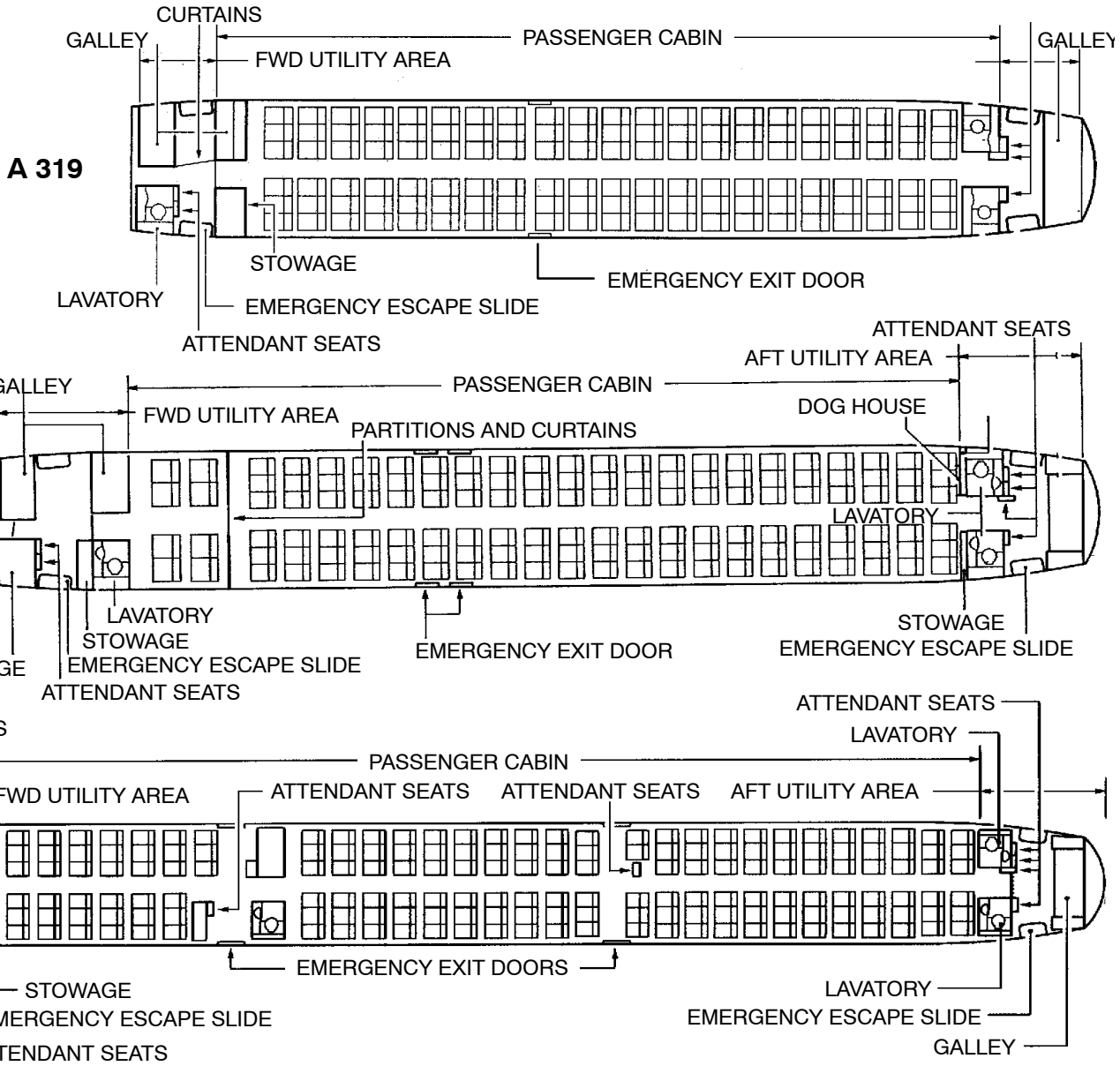


Figure 12 Cabin Arrangement

PASSENGER COMPARTMENT SEATS DESCRIPTION

General

The cabin has passenger seats and cabin attendant seats, which are located between FR20 thru FR66. The passenger seats are installed on the seat tracks of the cabin floor structure. Quick release fittings at the front and the rear legs hold the seats in position. Plastic seat track covers are fitted into the seat tracks to cover the exposed track sections.

Each seat has a metal frame assembly. The reclining back rest, the armrests, the seat belts and the seat pan are attached to the seat frame assembly. The seat pan has no edges or projections which might go into the seat cushion. The contoured upholstered backrest gives optimum comfort and protection against head strike injury to the passengers. The backrest and seat cushion pads are covered with heat resistant covers. All areas of passenger contact are free of projections which might cause injury or damage clothing.

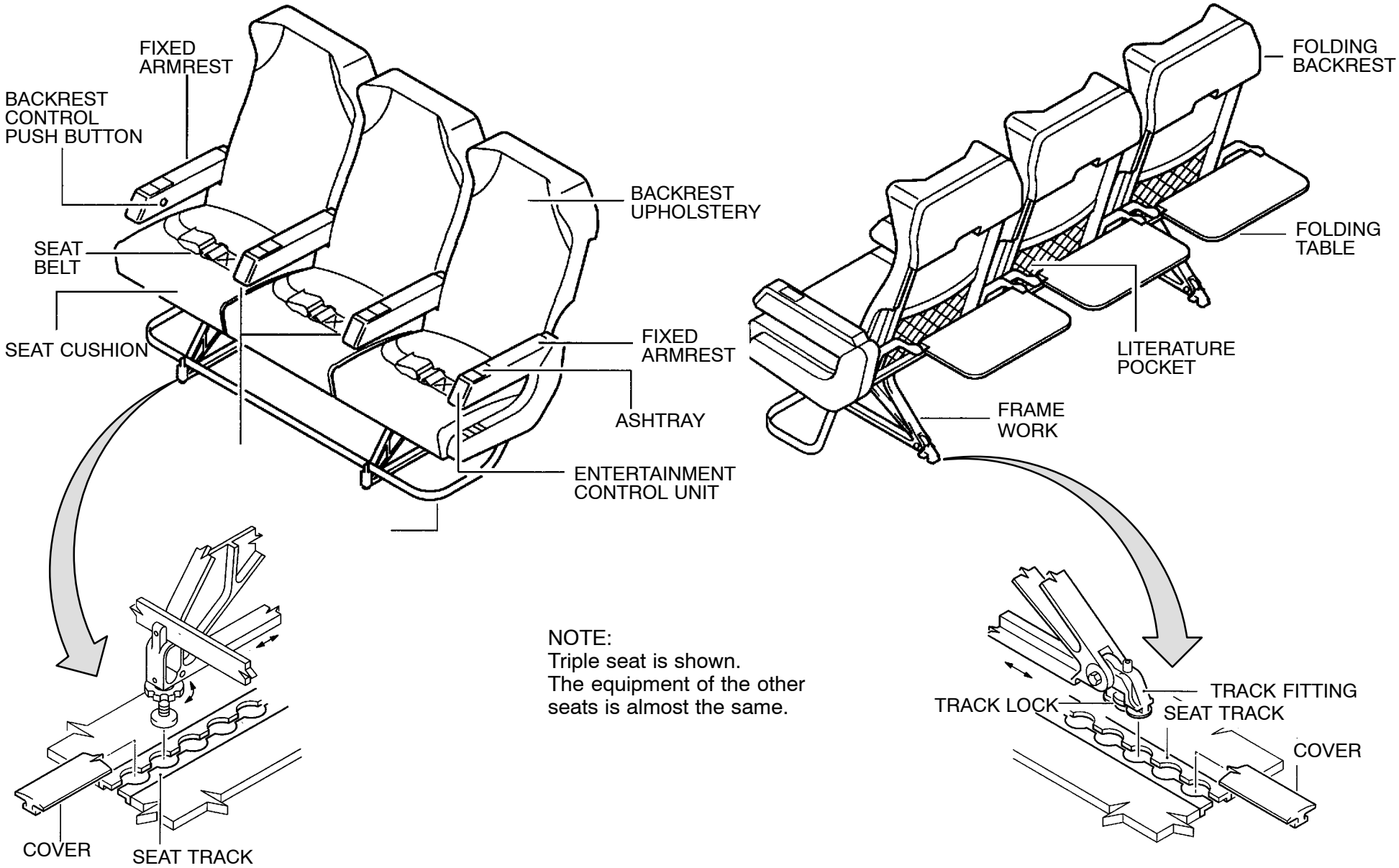


Figure 13 Passenger Seats (Example)

CABIN ATTENDANT SEATS DESCRIPTION

General

Cabin attendant seats are installed in the areas of the passenger/crew doors. Each cabin attendant seat has a stowage compartment. It can be used for the stowage of emergency equipment.

There are different types of cabin attendant seats:

- free standing,
- swivel,
- wall–mounted single,
- wall–mounted double bench.

The free–standing and swivel cabin–attendant seats are attached to the cabin floor structure (hard point mounted).

The wall–mounted cabin–attendant seats can also be attached to:

- the lavatory walls,
- the galley walls,
- the stowage walls.

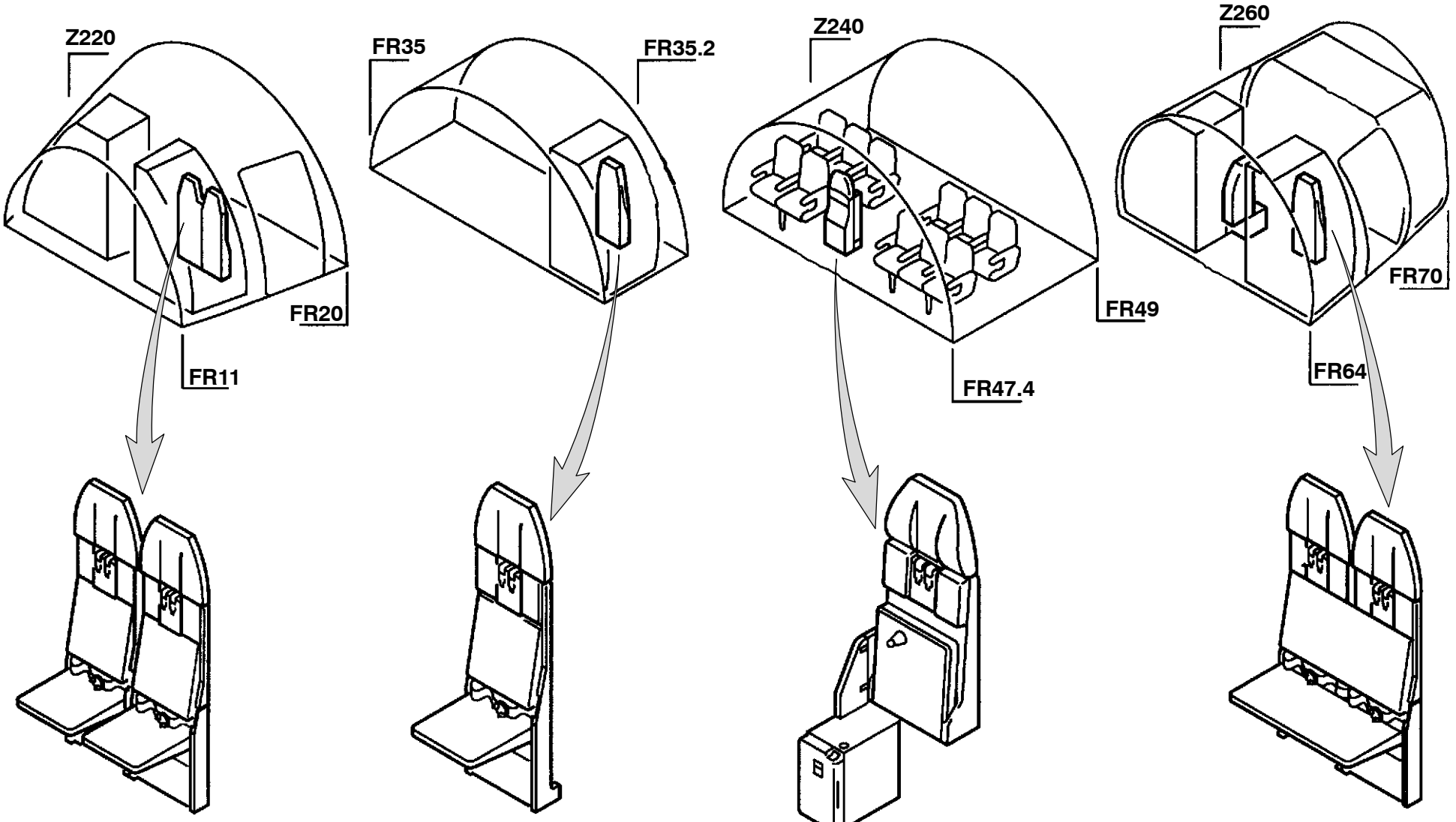


Figure 14 Cabin Attendant Seat Arrangement (Typical)

LININGS & FURNISHINGS PRESENTATION

General Description

The cabin linings are formed to the contour of the fuselage. They are installed over the fuselage structure, thermal acoustic insulation, components of the electrical system, air conditioning and ventilation system. Sealing strips fill the joints.

The cabin has:

- the ceiling panels
- the cove light covers
- the upper and lower sidewall panels
- passenger/crew door linings
- passenger/crew door frame linings
- emergency exit door linings
- emergency exit door frame linings

Decorative Panels

The decorative panels are made of NOMEX honeycomb with phenolic fiberglass prepregs. Decorative foil or fabric cover the front surface. Isolator mount fittings attach the upper part of the decorative panel to the fuselage structure. Screws attach the bottom part of the decorative panel to the metallic base panel. The metallic base panels and the decorative panels form a channel through which the cabin air conditioning circulates. To decrease the noise, self–adhesive sound–insulation foam is installed in the channel.

Sidewall Panels

Cove Light Panel are positioned under the right and left overhead stowage compartments. All parts are moulded metal constructions. They cover the space between the upper sidewall panels and the overhead stowage compartments. Assembly seals hold the covers in position.

Upper Sidewall Panels are made of synthetic honeycomb material. They have moulded plastic window frames. The panels are installed on special attachment fittings.

Lower Sidewall Panels the lower sidewall panels are made in two parts:

- the decorative panels,
- the metallic base panels.

Ceiling Panels

The ceiling panels are made of synthetic honeycomb material. They are installed over the full length of the cabin and the utility area.

Ceiling Panels in the cabin area have contoured ceiling panels fitted between and above the left and right overhead stowage compartments. The ceiling panels have fluorescent lamps. The ballast units are part of the lamp units and are attached to the ceiling panels. Filler strips are installed between the panels to cover the open space. Quick–release fasteners attach the ceiling panels to the overhead stowage compartments. The ceiling panels cover the air–conditioning outlets, located above the overhead stowage compartments.

Ceiling Panels in the Utility Area are installed between the center ceiling support and the door frame linings. Quick–release fasteners, assembly seals and connecting pins attach the ceiling panels.

Metallic Base Panels

Quick–release push–fasteners attach the lower part of the metallic base panels to the cabin floor structure. Decompression doors are installed in the metallic base panels. Hinges attach them to the upper part of the panels. A silicon rubber locking device hold each door in the closed position. A rapid decompression in the cabin or cargo compartment will cause the doors to open.

Door and Door Frame Linings

The door and door frame lining panels are made of synthetic material. Screws attach the panels to the brackets on the frames in the door areas. Seals are bonded to the edges of each panel. Covers, in the passenger/crew service doors and frame linings, form storage space for the door locking hook and emergency batteries.

Insulation Mats

Insulation mats are fitted to the inner fuselage shell of the cabin as thermal and acoustic insulation. Cable brackets and fastening pins attach the mats to the frames or to the stringers.

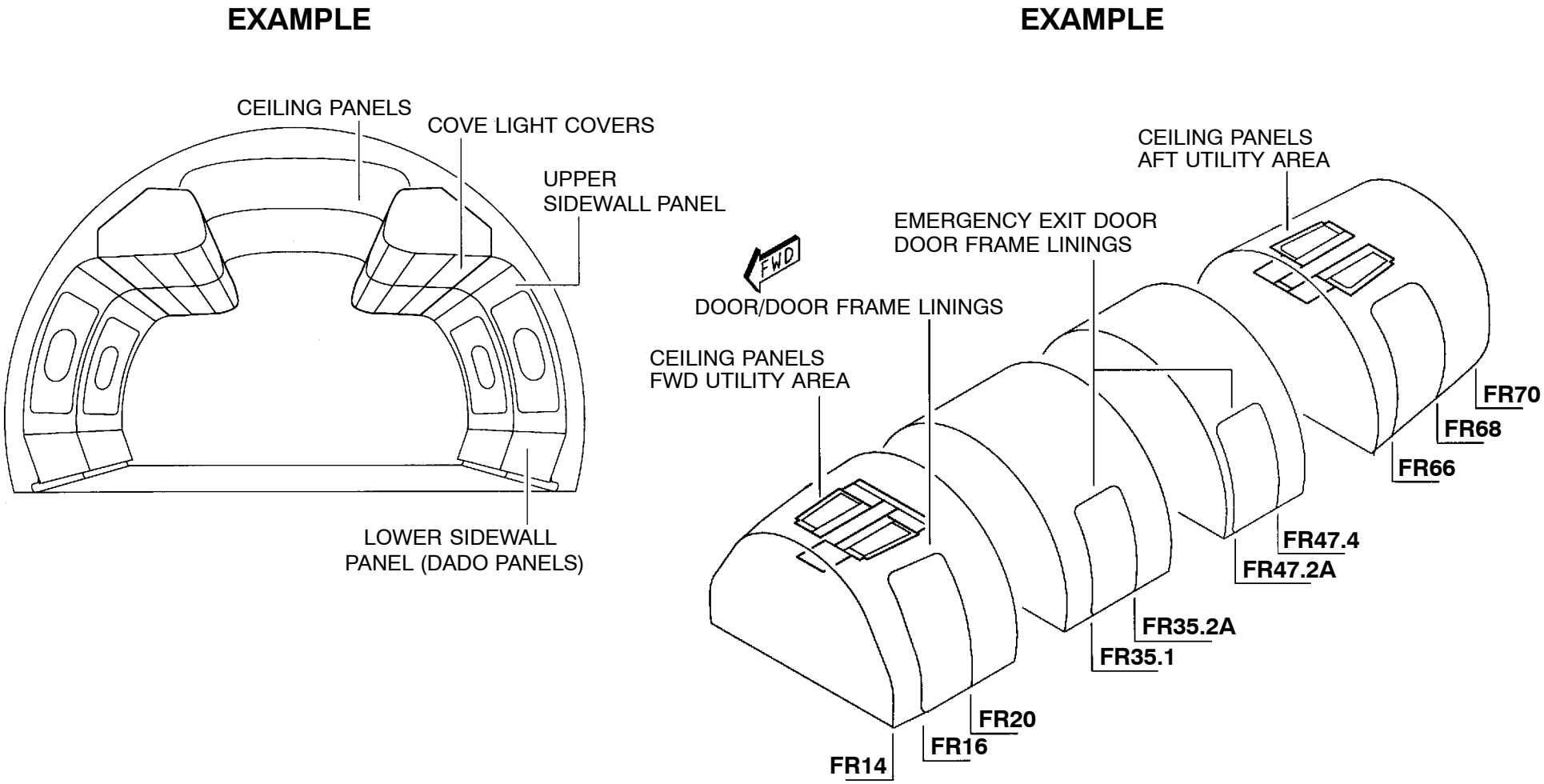


Figure 15 Linings Components Location

OVERHEAD STOWAGE COMP. INTRODUCTION

General

The **OHSC** (**O**ver**H**ead **S**towage **C**ompartments) are installed above the left and right seat rows according to the cabin layout of the aircraft.

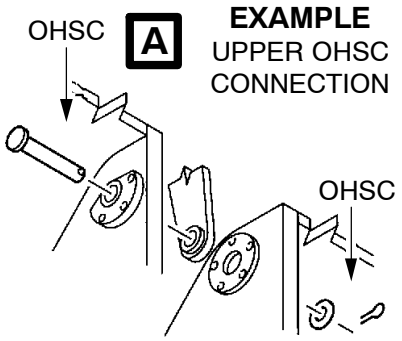
Component Description

The OHSC have a box structure and are of different lengths:

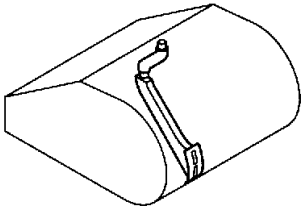
- spacer,
- 1–frame pitch, 2–frame pitch, 3–frame pitch and 4–frame pitch.

Each OHSC has:

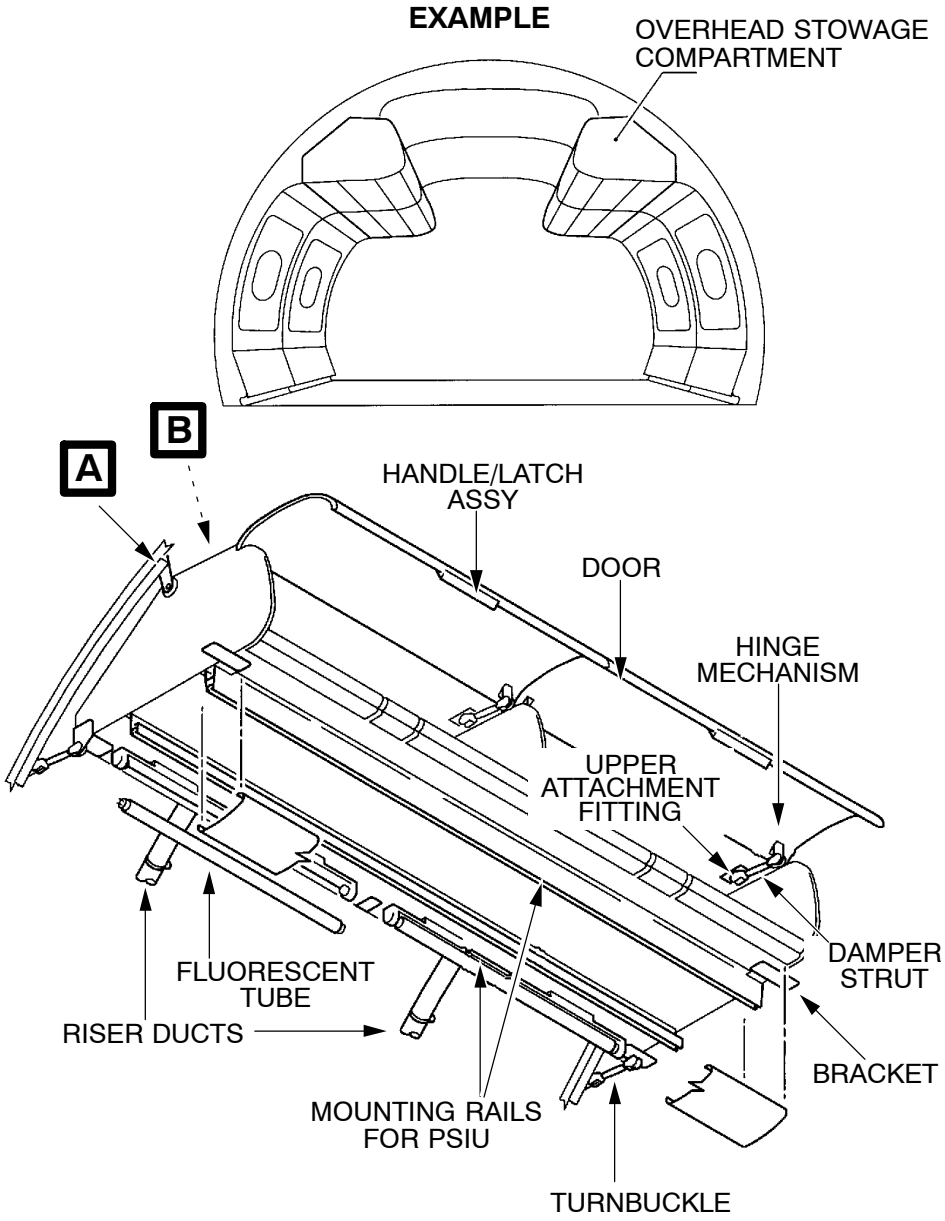
- one or two doors with a handle/latch assembly for each door,
- a handgrip along its length,
- hinge mechanisms that attach the door to the OHSC,
- a gas filled damper strut on each hinge mechanism for a controlled door operation,
- upper and lower attachment brackets,
- mounting rails for the installation of the PSIU and the emergency oxygen container. Brackets connect the OHSC to each other. Brackets and turnbuckles attach the OHSC to the fuselage structure. Cabin temperature control sensors are installed between the OHSC according to the cabin layout.



EXAMPLE
UPPER OHSC
CONNECTION



EXAMPLE
TEMPERATURE
CONTROL SENSOR



CURTAINS AND PARTITIONS DESCRIPTION

General

The curtains and partitions are installed to divide the utility areas and the seating areas in the cabin.

Partitions

There are different types of partitions installed in the cabin:

- the lateral partitions, under the OSC,
- the lateral partitions, full height,
- the center partitions, under the OSC
- the center partitions, full height,
- the center partitions, half height.

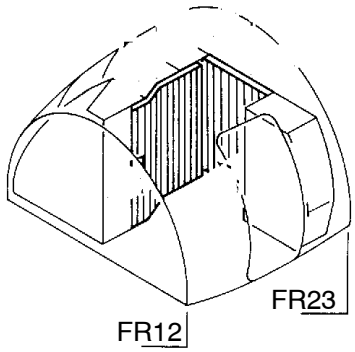
Each partition is made of a composite structure material. The surface of the partitions have a decorative plastic cover. The plastic material is dirt repellent. The edges of the partitions have a light alloy profile. The supports which hold the attach fittings are bonded into the composite structure of the partition. The partitions are installed in the cabin between FR20 and FR66. Special fittings attach the partitions to the seat tracks of the cabin and on top to the overhead stowage compartment or the ceiling.

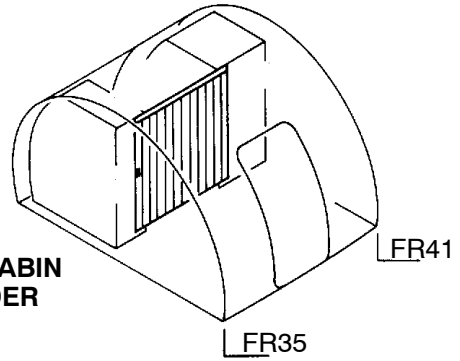
Curtains

Curtains can be found in the subsequent areas:

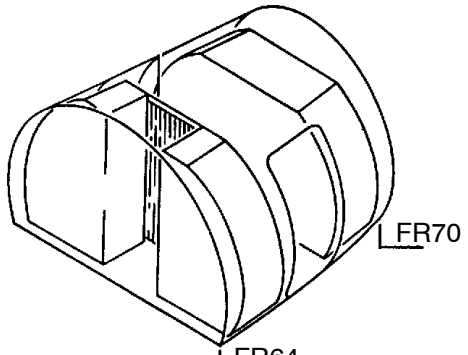
- between two partitions,
- between galleys and partitions,
- between lavatories and partitions,
- between two lavatories,
- between lavatories and galleys,
- between two galleys.

The curtains hang on hooks which slide on aluminum rails. Brackets attach the rails to the galleys, the wall–mounted stowage compartments and/or the overhead stowage compartments.

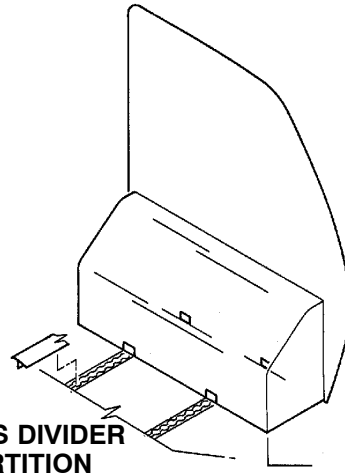




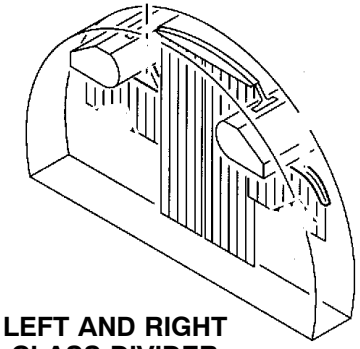
FWD CABIN DIVIDER



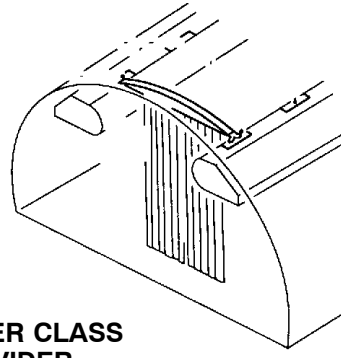
AFT UTILITY AREA DIVIDER



CLASS DIVIDER PARTITION



LEFT AND RIGHT CLASS DIVIDER



CENTER CLASS DIVIDER

ATA 25–20 ENHANCED PASSENGER COMPARTMENT

ENHANCED PASSENGER COMPARTMENT PRESENTATION

NEW DESIGN

The objective of the facelift in the passenger compartment is to provide a cabin with a better appearance and improved comfort for the passengers.

DESCRIPTION

The new spacious design of the enhanced cabin improve the following linings between door 1 and door 4:

- sidewall/window panel improve space envelope (shoulder clearance) and smoother contour
- cove light panel with adapted contour
- PSU channel design including improved reading LED generation
- overhead stowage compartments (OHSC) with increased volume and a new latch
- grip rail with smoother contour and increased cabin height.

Figure 25-20-1 - Main areas of design enhancement

New Ceiling panel

with integrated lamp screen to ensure homogenous light effect towards cove light panel and to reduce noise transmission

Adapted OHSC door & box

new latch, non-sculptured door and inboard enlarged bin volume

New Grip rail

New design with integrated seat row identifier

New PSU design

adapted to new contour (A380 design) with new 2nd generation LED (not shown)

New window panel

adapted to new contour with improved insulation for noise reduction providing as well more comfort for passenger by improved shoulder clearance (appr. 1 inch, depending on seat position)

New cove light panel

adapted to new contour

New CIDS

With enhanced Flight Attendant Panel functionality

Figure 16 Passenger Compartment

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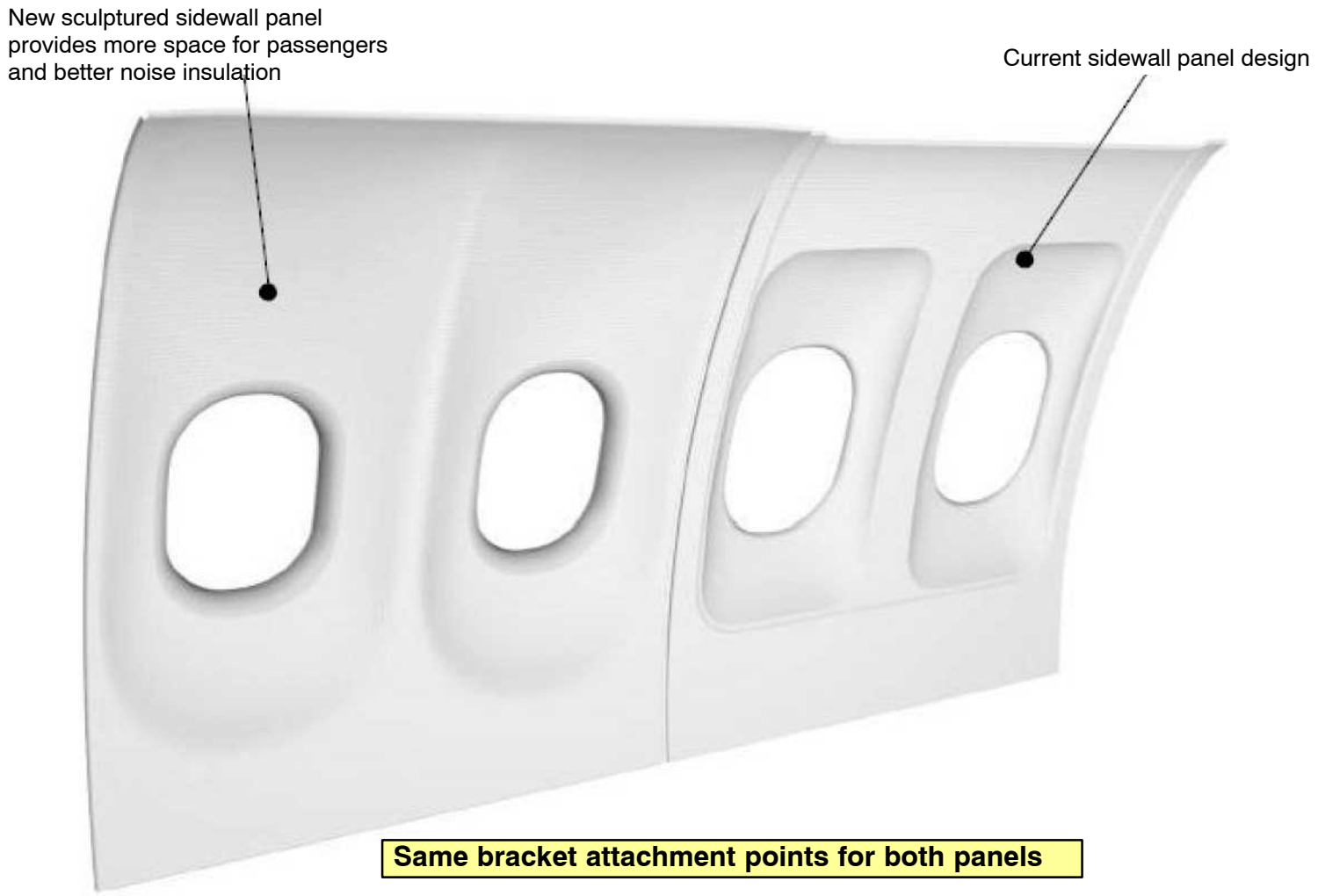


Figure 17 Sidewall Panels

NEW CEILING PANELS PRESENTATION

NEW REMOVAL PROCEDURE

CAUTION: DUE TO THE ENLARGED VOLUME OF THE OHSC IT IS NECESSARY TO REMOVE THE DOOR BEFORE YOU REMOVE A CEILING PANEL.

Push the springs (1) down and pull out the drawers (2).

Push the left side of the ceiling panel (3) up to release the pins (4)

Move the ceiling panel (3) to the right and lift the pins (5) out of the brackets (6)

Move the ceiling panel (3) at an angle with the left side down.

Make sure that the left side of the ceiling panel (3) is clear of the overhead stowage compartments.

Remove the ceiling panel (3).

For detailed Removal/Installation information refer to AMM 25–23–41.

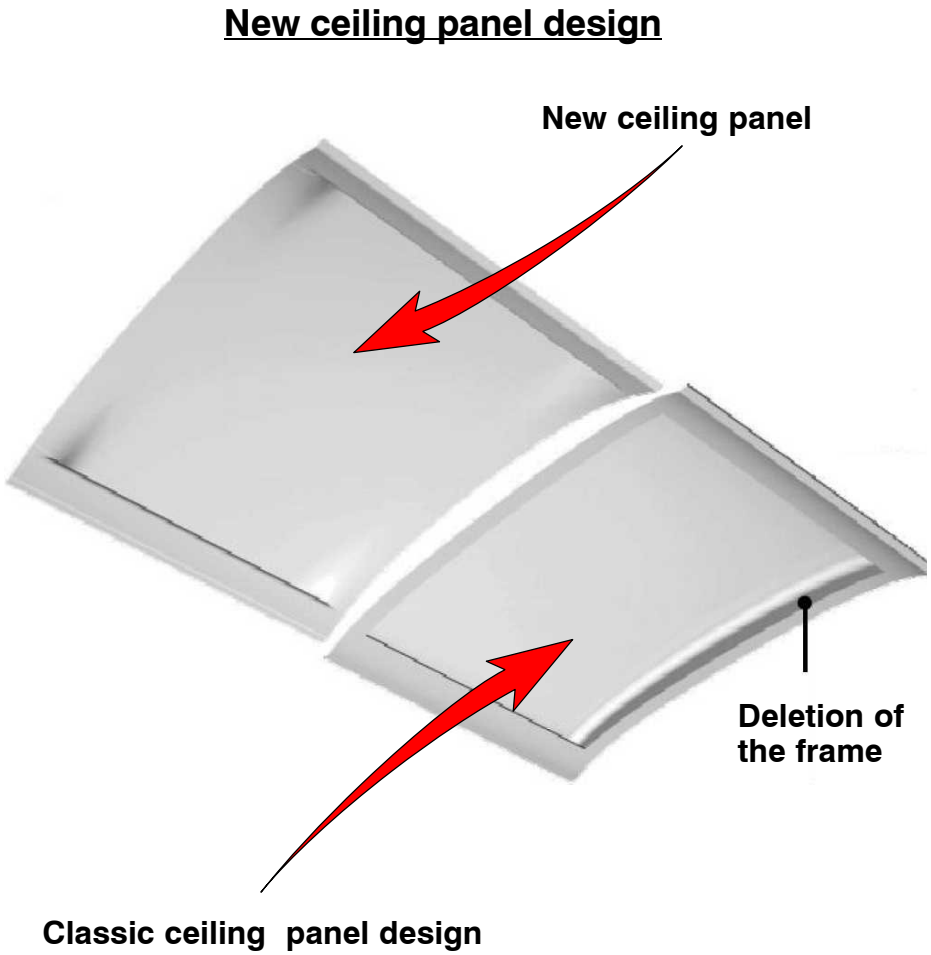


Figure 18 Panel - Ceiling Old/New version

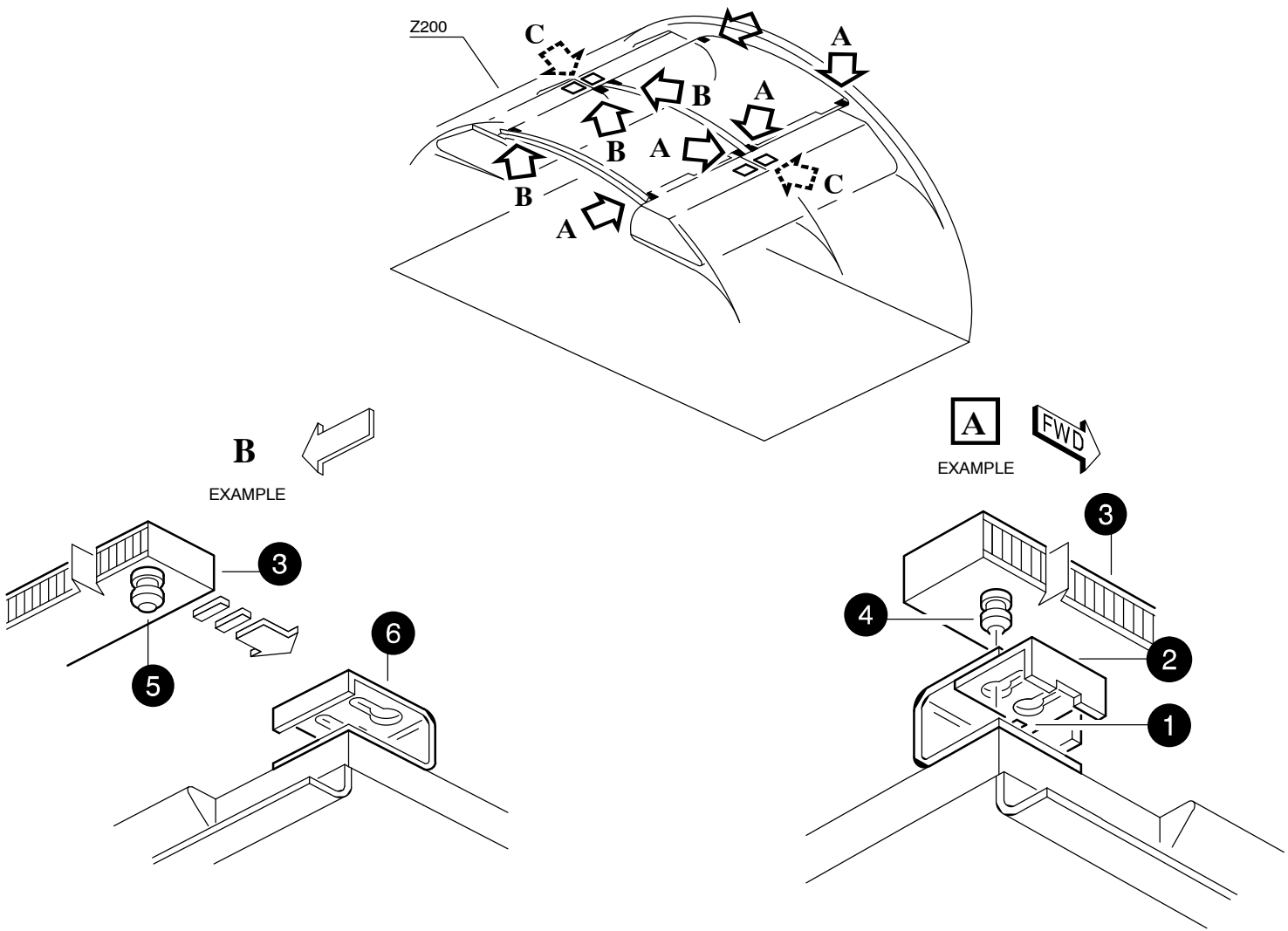


Figure 19 Ceiling Panel Attachments

25–24 OVHD STOW. COMPARTMENT

OVERHEAD STOWAGE COMPARTMENTS PRESENTATION

The new enlarged OHSC

The new enlarged overhead stowage compartments:

- increase the volume for luggage by more than 10%
  - OHSC volume for a 4 frame bin
    - Current OHSC 0.42m3
    - New design OHSC 0.46m3
- can easily accomodate „Travel Pro Type 22“ roller bags plus laptops, briefcases, winter coats, etc.

REMOVAL OF THE DOOR OF THE OHSC

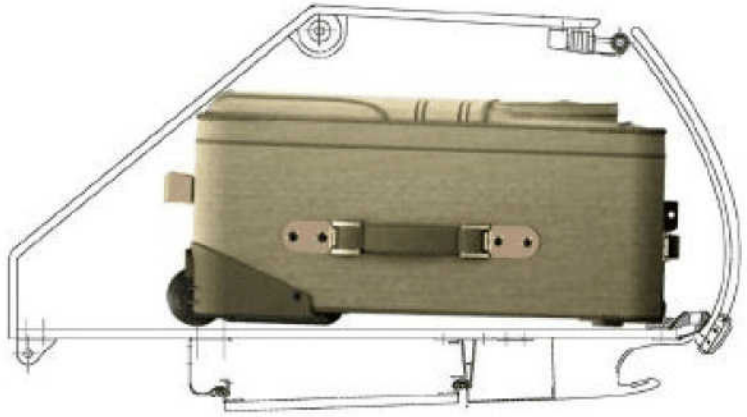
CAUTION: DUE TO THE ENLARGED VOLUME OF THE OHSC IT IS NECESSARY TO REMOVE THE DOOR BEFORE YOU REMOVE A CEILING PANEL.

Do remove the door of the overhead stowage compartment you

- open the applicable door and hold it
- push the pin (1) through the hole (2) of the retainer with a sharp pointed instrument to release the spline (3)
- move the spline (3) a little out of the housing until the hinge gets loose
- carefully remove the door

For detailled Removal/Installion information refer to AMM 25–24–41.

OLD VERSION



NEW VERSION

Figure 20 Overhead Stowage Compartment

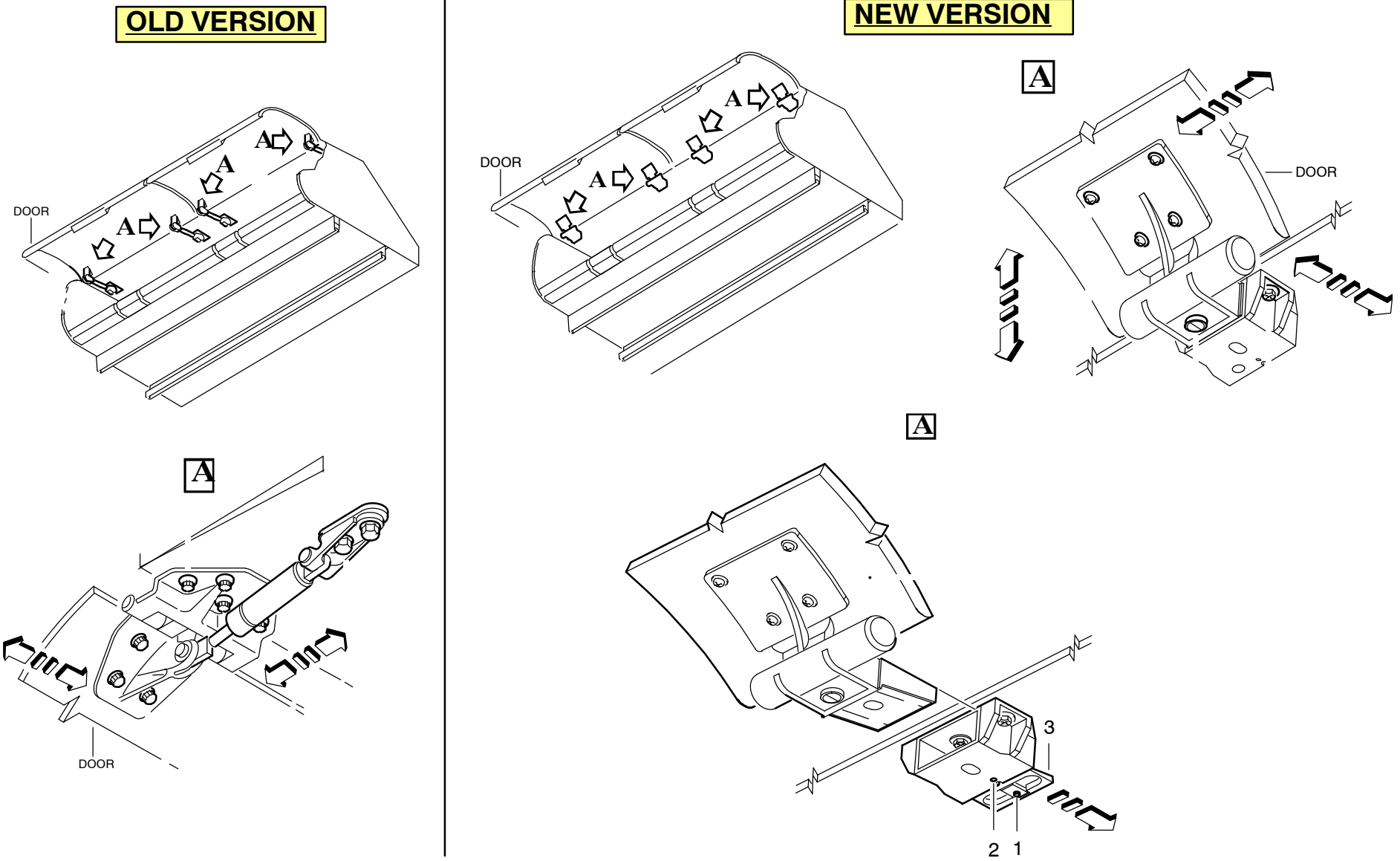


Figure 21 OHSC Door attachment

HEATED FLOOR PANEL (EMERG. EXITS) – DESCR.

General

The heated floor panels are installed at the emergency exits, to increase the temperature in these areas.

Temperature measurements taken during flights have shown that the temperature at the emergency exits floor level is much lower than in the other cabin areas.

The heated floor panel system has:

- Two control units 4DS and 14DS,
- Two heated floor panels 5DS (6DS) installed at the FWD emergency exit,
- Two heated floor panels 15DS (16DS) installed at the AFT emergency exit.

Optional additional heated floor panels (DLH A319)

The Heated Floor Panel System (HFP) increases the temperature of the floor in the passenger crew door area to create and maintain a comfortable temperature to the crew and to the passengers on board for comfort reason during flight.

The HFPs can be switched on and off by the crew. The ON/OFF switch is located on the Flight Attendant Panel (FAP) respectively on the Cabin Intercommunication Data System panel (CIDS).

The system state is indicated by the illumination of the control switch on the FAP.

On ground, during maintenance the heating of the floor panel is not necessary. To protect the HFP system against unnecessary operation and thus increased aging please switch off the system every time if you recognize that it is still running.

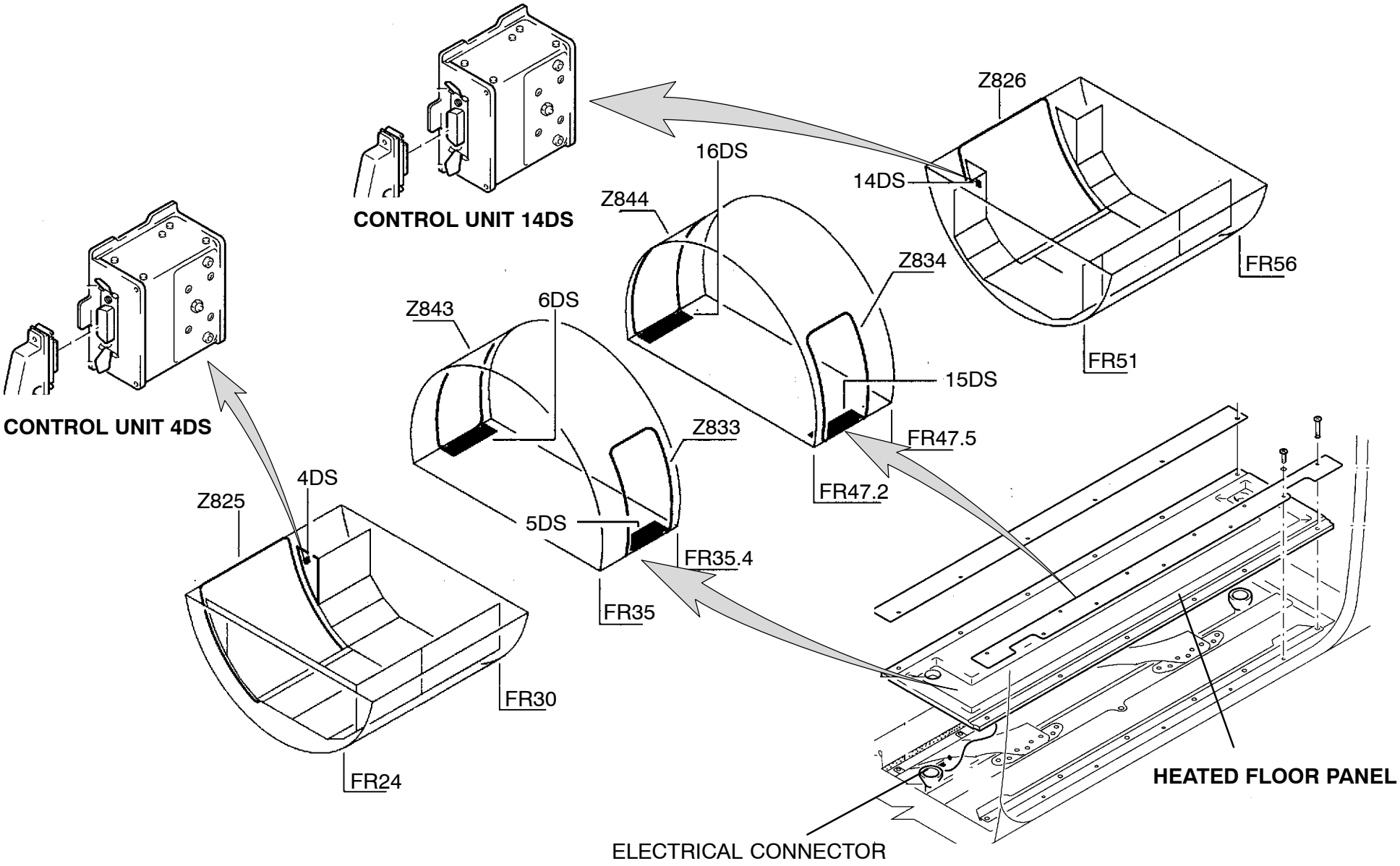


Figure 22 Heated Floor Panel (Emerg. Exits)–Component

HEATED FLOOR PANEL SYST. ELEC. CONTROL

Component Description

The control units (4DS, 14DS) monitor and control the heated floor panels:

- 4DS for panels 5DS and 6DS,
- 14DS for panels 15DS and 16DS.

The control units are connected to sensors that constantly measure the temperature on each heated floor panel.

If the temperature goes below 29 deg. C (84.20 deg. F) the control unit supplies power to heat the related floor panel. When the temperature goes above 32 deg. C (89.60 deg. F) the control unit switches off the power to the related heated floor panel.

Each control unit has two fuses to protect the related heated floor panel. Each control unit has a test function for each heated floor panel with a push–button and two LED‘s (one for each heated floor panel).

Heated Floor Panels 5DS (6DS), 15DS (16DS).

The heated floor panel has an electrical heating foil protected with an aluminium outer cover plate. To decrease the possibility of heat loss, an insulation material is fitted to the bottom of the heated floor panel below the heating foil.

The heated floor panel has two drain holes, one each side, and is shaped to drain away any water that collects on the panel when the emergency exits are opened. The heated floor panel has a sensor and two safety switches. If a control unit has a malfunction and supplies constant power to a heated floor panel, the first safety switch will operate.

The safety switch operating parameters are approximate between 35 deg. C (95.00 deg. F) and 55 deg. C (131.00 deg. F). If the heated floor panel temperature increases above 70 deg. C (158.00 deg. F) the second safety switch will stop the power supply to the heated floor panel.

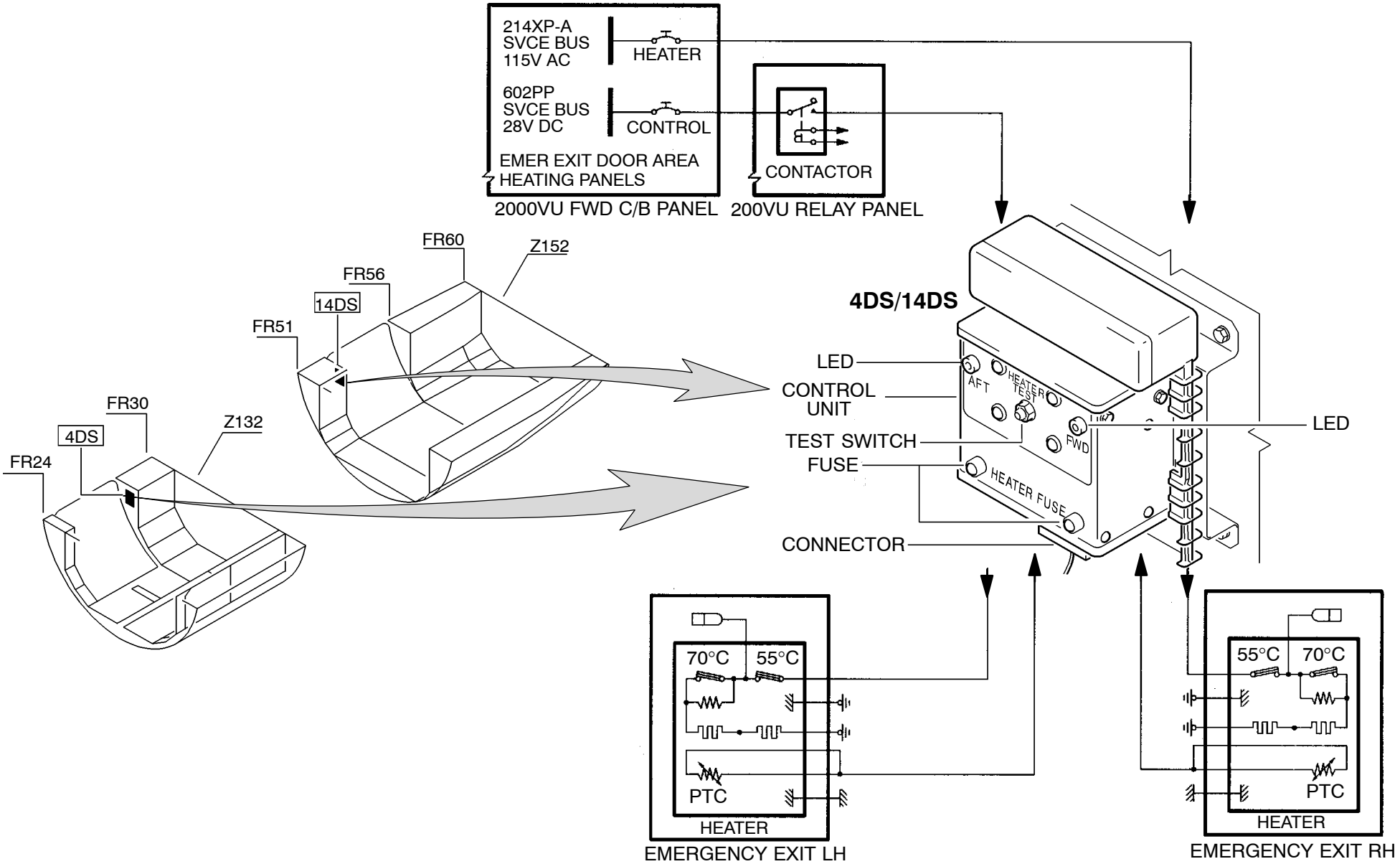


Figure 23 Heated Floor Panel Power Supply–Schematic

FLOOR COVERING DESCRIPTION

General

The floor covering is installed in the cabin and in the utility areas and is made from textile and non-textile materials. It gives passenger comfort, soundproofing and gives protection to the floor panels.

The floor covering is flame and slip resistant. There is:

- the textile floor covering (carpet) in the passenger area,
- the non-textile floor covering (NTF) in the utility areas.

COMPONENT LOCATION AND DESCRIPTION

Non-textile Floor Covering (NTF)

The floor of each cabin utility area is covered with NTF this gives protection to the floor structure from liquids that can cause corrosion. Adhesive film attaches the NTF to the floor panels. There are cut–outs for the floor attachment of the cabin furnishings. The edges and the cut–outs of the NTF are sealed with sealant.

Seat Rail Area

The seat rails below the NTF are treated with a corrosion inhibitor spray. The seat rails on the edges of the NTF and on both sides of a cut–out are all filled with sealant. Spacer strips are installed on the seat rails where they are covered by the NTF.

Floor Panel Area

Adhesive foil attaches the NTF to the floor panels. The adhesive foil have an overlap of each other by 50 mm (1.9685 in.). Double–sided adhesive tape is installed around the outer edges of the NTF pieces.

Joint Strips

Stainless–steel cover strips are installed across the aisles to cover the joints between the textile and the non-textile floor coverings. The attachment screws are installed with corrosion protection paste.

Textile Floor Covering (TF)

The floor of the passenger area in the cabin is covered with TF. Double–side adhesive tape attaches the TF to the floor panels. Plastic seat–track covers are installed to engage the edges and give a smooth surface to the TF on the seat tracks.

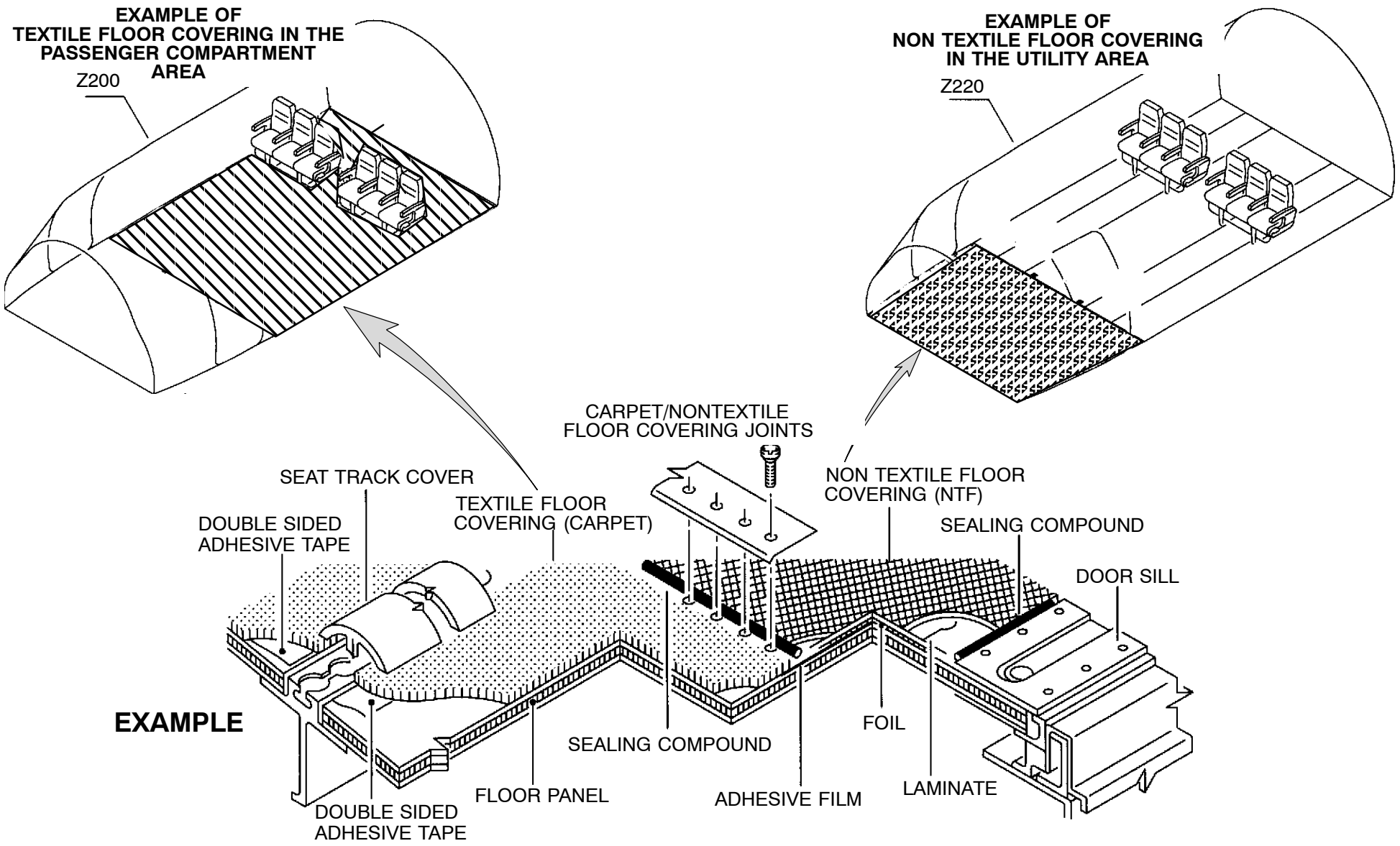


Figure 24 Textile and Non–Textile Floor Covering

VACUUM CLEANER SOCKETS DESCRIPTION

General

General The electrical service supply–system is installed in the cabin and the cargo compartments. It supplies electrical power to sockets which you can use for electrical equipment.

Power supply

The busbar 214XP and 212XP supplies 115 V AC, 400 Hz to each vacuum cleaner vacuum cleaner wall–socket. Each vacuum Cleaner wall–socket has an isolated electrical circuit and is independently protected by a 10 A circuit breaker. The circuit breakers are installed on the circuit breaker panels 2000VU and 2001VU.

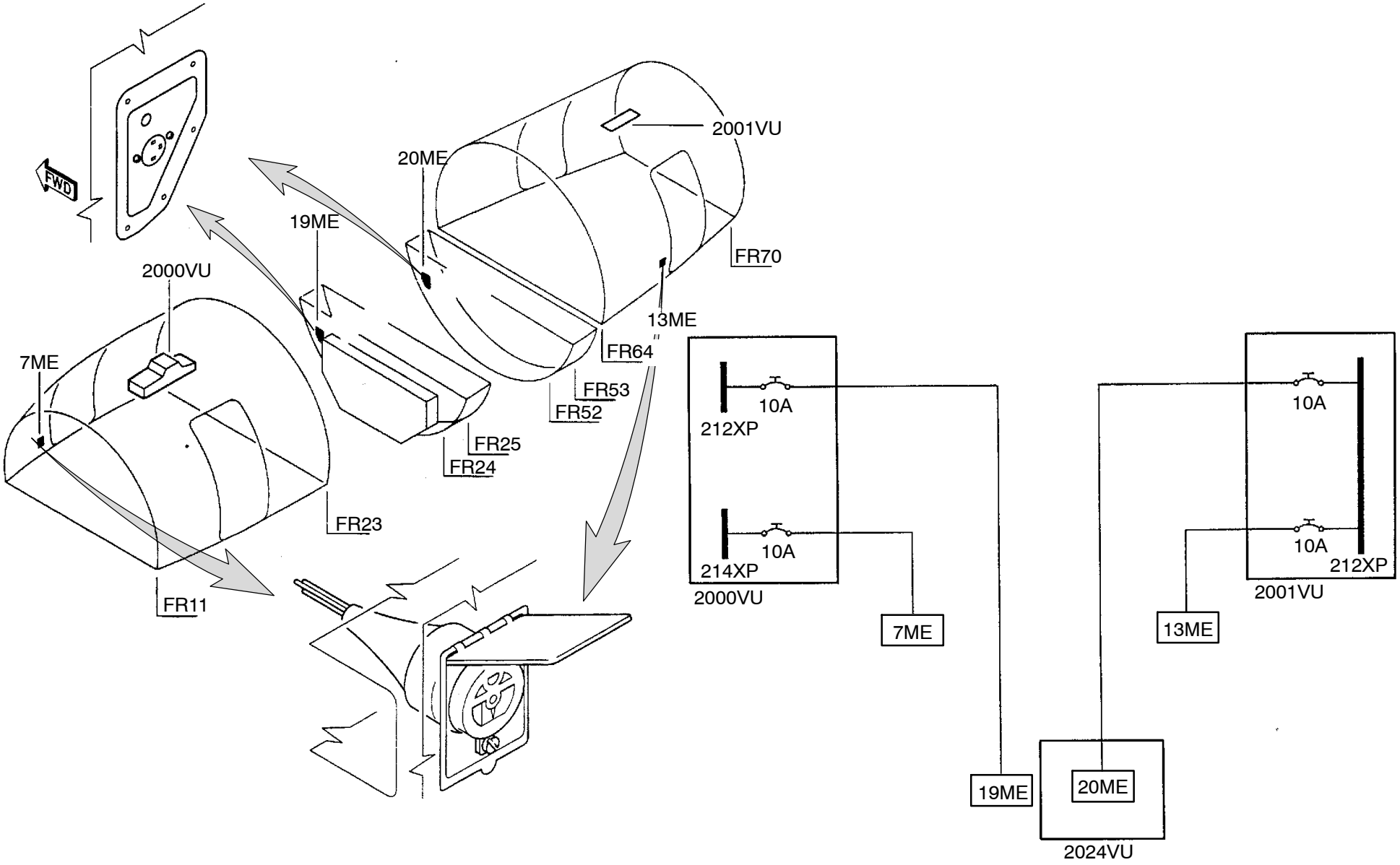


Figure 25 Vacuum Cleaner Sockets–Power Supply

25–30 BUFFET AND GALLEY

FORWARD GALLEY GENERAL LAYOUT (TYPICAL)

Introduction

The forward galleys are installed in the FWD utility area.

The galley is used to keep and/or prepare food and hot and cold drinks. The galley can hold full and/or half size trolleys and containers. The galley also has stowage compartments for coats, equipment etc. There are optional galley configurations of wet or dry units.

Galley Types

The **wet unit galley** is used to store and prepare food and drink. It is provided with electrically operated equipment and provisions for potable and waste water. The **dry unit galley** has no system provisions and is only used to store food and drink.

Galley Installation Restrictions

Installation of the galley may require adaptation of the surrounding interior furnishings and installation of metal dummy window panels where necessary. A minimum installation clearance of 0.10 mm (0.0039 in.) is required between the galley and door frame lining.

Galley installation must not restrict:

- visibility of the exit signs,
- accessibility to the handgrips and emergency equipment,
- removal/installation of any access panels.

To ensure handling of the trolley a minimum handling space dependant on the trolley diagonal length plus 1 in. (25.3999 mm) at each side is required.

Galley Component and installation Description

The galley basic structure is made from sandwich panels. These panels are made from NOMEX with fiberglass cover plates. Extrusions are bonded and/or riveted to the panels. Edge profiles, stainless–steel kick strips and rub–strips are installed to protect the galley where applicable. The main galley attachment points are hard point and/or seat rail attachments on the floor and tie rod attachments at the upper fuselage structure.

The pelmet is a cover structure on the top of the galley. Behind the pelmet are all the top galley connections.

Components:

- The oven increases the temperature of the cooked food. You can set the control box to the necessary temperature and time of operation.
- The potable water system supplies the water heater with potable water.
- The hot jug keeps the drinks at a stable temperature.
- The hot cup boils the beverages.
- The coffee maker prepares and keeps the coffee at a high temperature in a container, or in a coffee jug on a hot plate. The potable water system sup plies potable water to the coffee maker. The coffee maker has hot or hot and cold water faucets installed.
- The trolley keeps trays or drawers for use as necessary.
- The waste trolley has a waste container with a spring–loaded flap.
- The container keeps trays and drawers or you can use them to keep beverages and food.

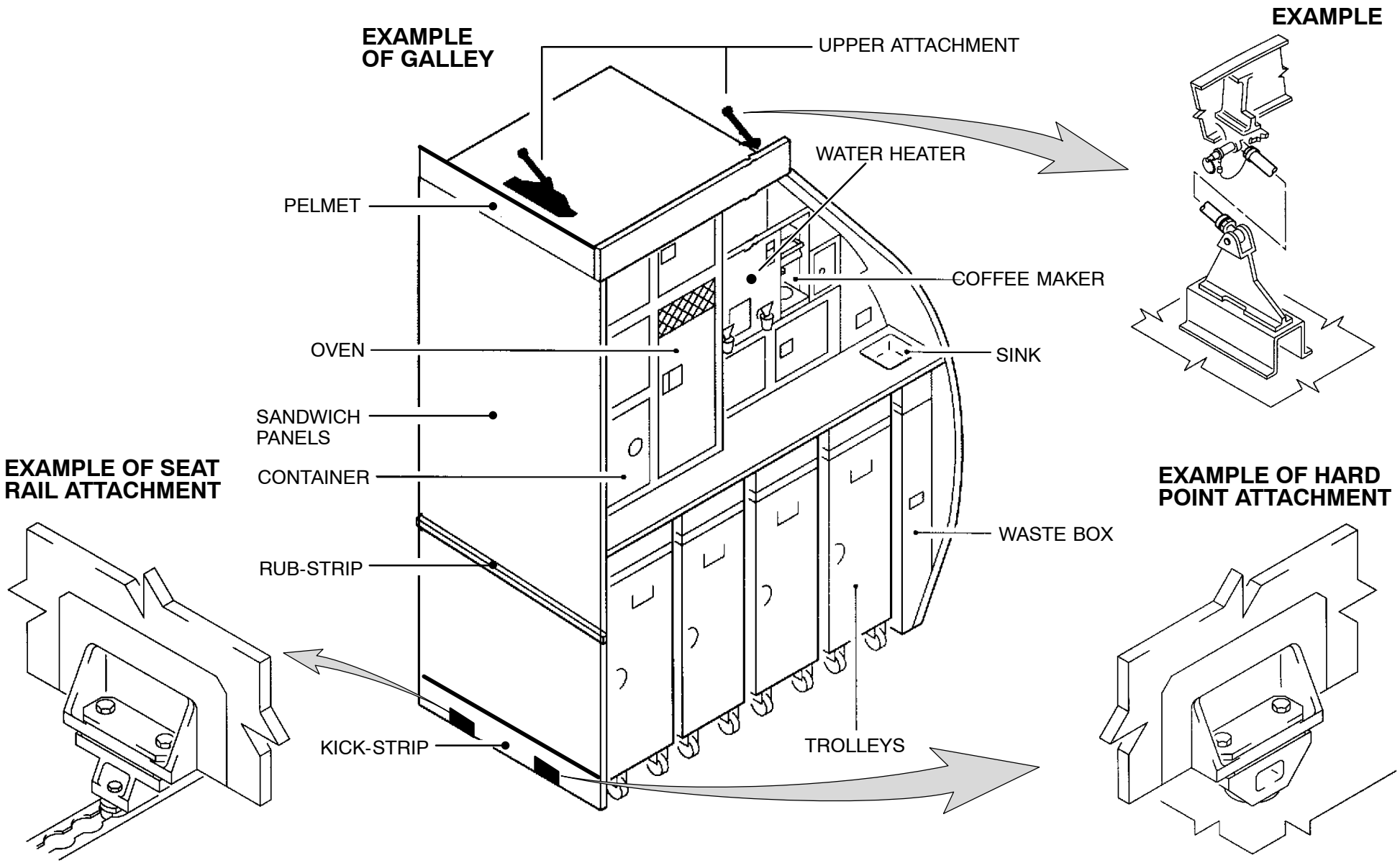


Figure 26 Galley Installation–Example

25–40 LAVATORIES

LAVATORIES INTRODUCTION (TYPICAL)

General Characteristics

The lavatories are installed as set or movable units. The set lavatories are hard point mounted in the floor structure. The movable lavatories are attached to the seat rails in the variable installation areas at 1 inch intervals. A tie–rod attaches the upper attachment point of the lavatory to the aircraft structure. Each lavatory has a single blade door or as an option, a bi–folding door can be installed on specific lavatories.

Structure

The lavatory is assembled as a modular unit, with a ceiling, sidewalls, rear-wall and floor panels. The basic structure is made from sandwich panels. Extrusions are bonded and/or attached with screws to the panels. Kickstrips and corner strips are installed to prevent damage to the lavatory.

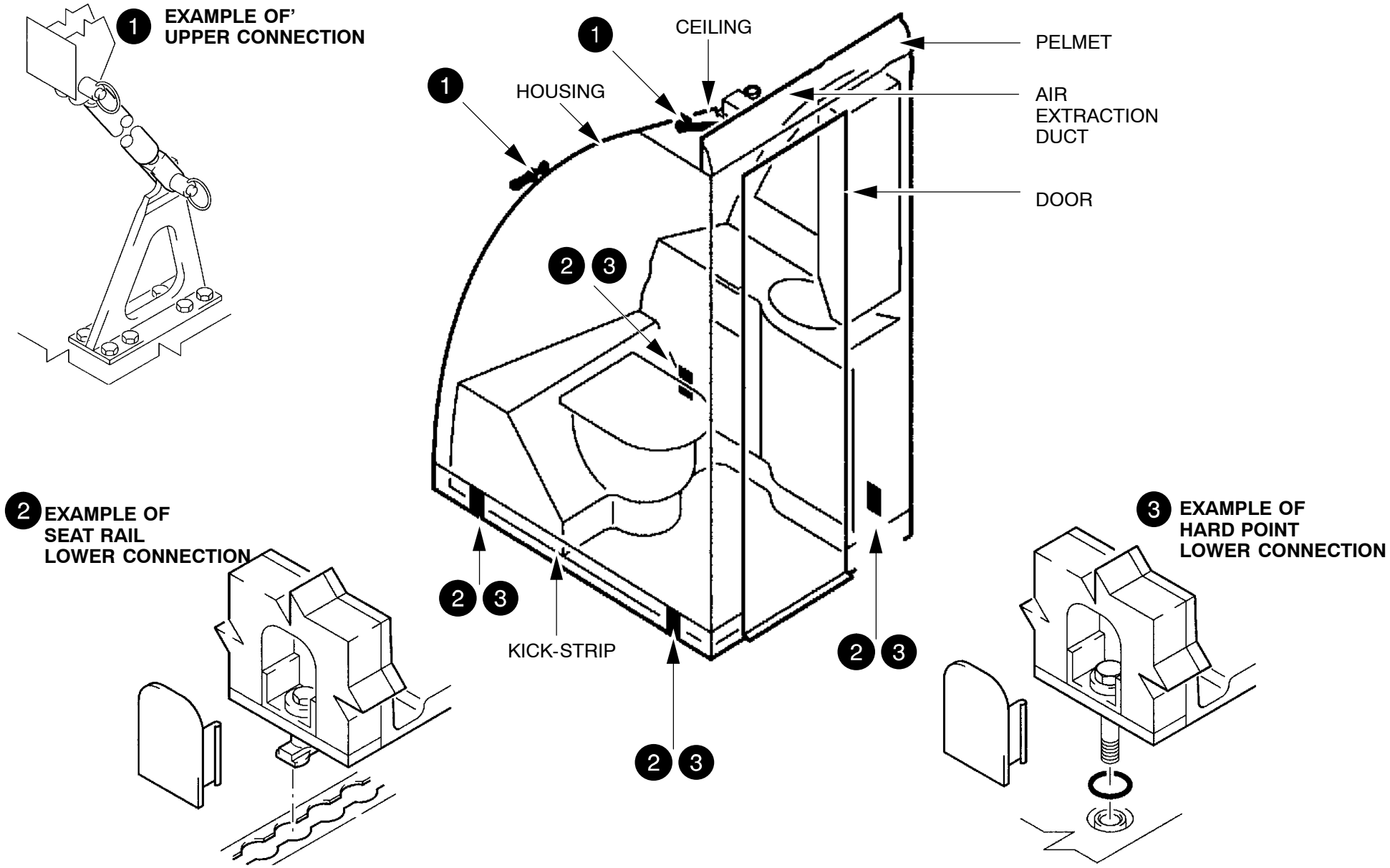


Figure 27 Lavatory Installation-Example

LAVATORY DOORS PRESENTATION

Single Blade Door

A single blade door that opens outwards is installed on the lavatory unit. The lavatory door is made from a sandwich panel. Extrusions are bonded and/or attached with screws to the door panel. Lavatories located near an exit will have the lavatory door installed so it will not hinder evacuation of the passengers. To let the door open without obstruction, a minimum of 21 inch (0.5333 m) is required.

Installed in the door are:

- a lock, which operates a microswitch, with a vacant/occupied indicator,
- a latch,
- an ashtray,
- a coat hook,
- air inlet grills,
- a kick strip.

Bi–folding Door

A bi–folding door that opens inwards and closes automatically can be installed on specific lavatories, as an option. The lavatory doors are made from sandwich panels. Extrusions are bonded and/or attached with screws to the door panel.

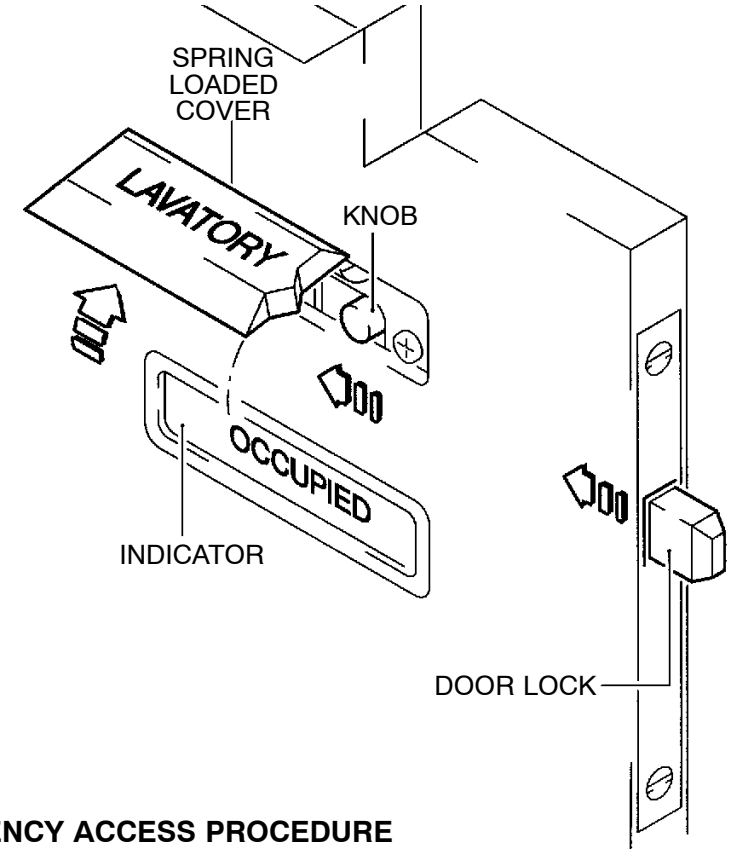
Installed in the door are:

- a lock, which operates a microswitch, with a vacant/occupied indicator,
- a handle,
- an ashtray,
- a coat hook,
- air inlet grills,
- kick strips.

Emergency Access Procedure (Operation/Control and Indicating)

Lavatory Doors–Emergency Opening (from the outside of the lavatory) is the same for both types of doors:

- lift up the spring loaded cover,
- slide the knob to the side until the VACANT indicator shows,
- push the door open.



EMERGENCY ACCESS PROCEDURE

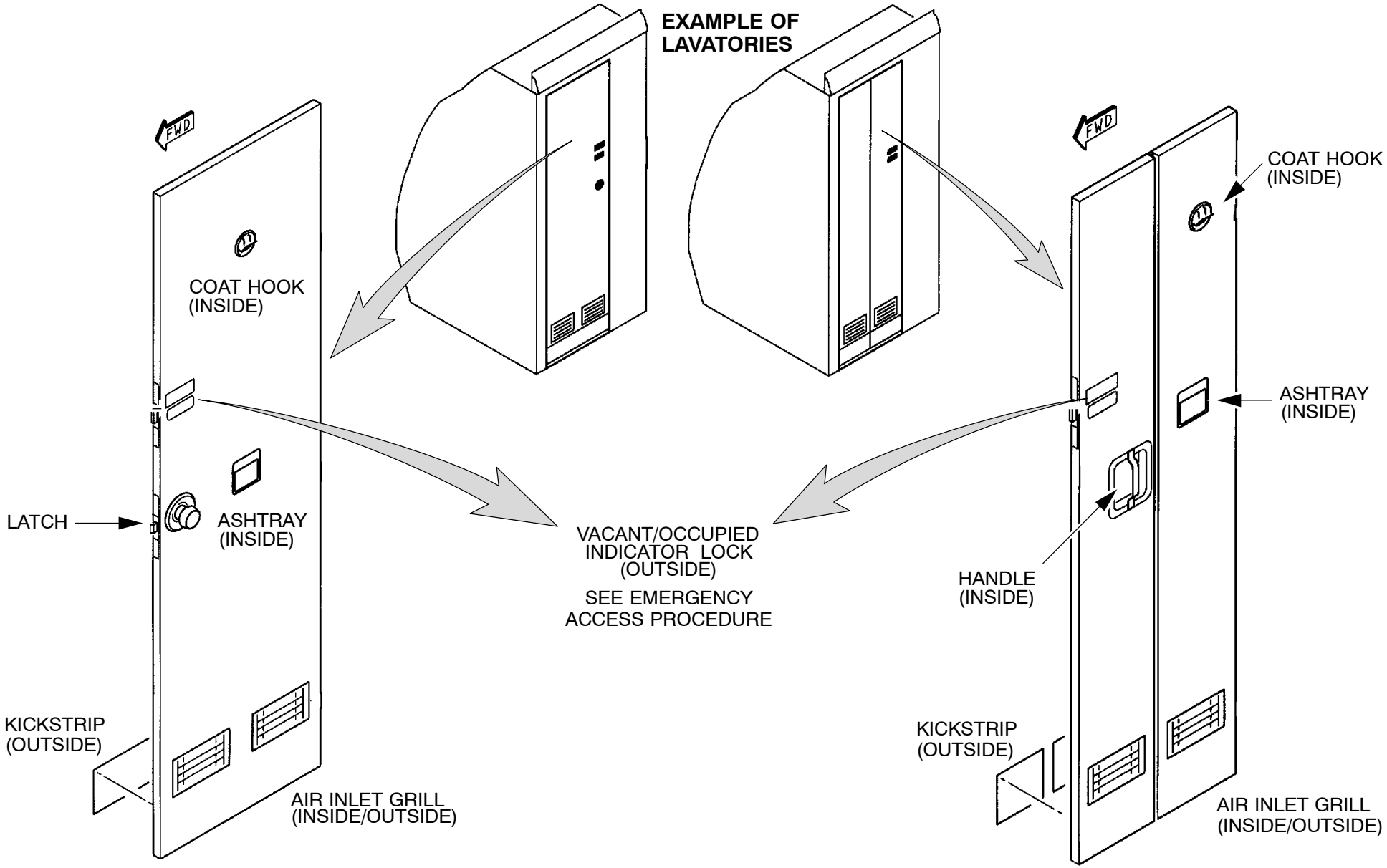


Figure 28 Single and Bi–folding Lavatory Doors

RAZOR SUPPLY DESCRIPTION

General

An electrical razor socket is installed in each lavatory.

System description

The razor supply system has:

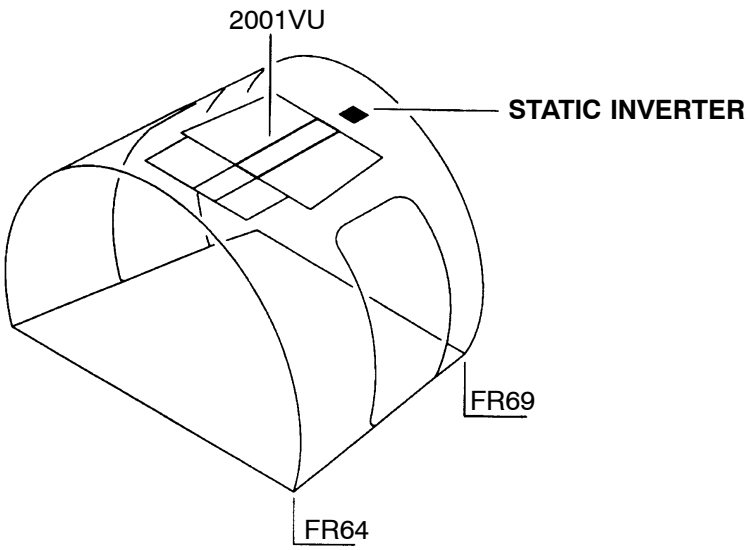
- a circuit breaker,
- a static inverter,
- a razor socket in each lavatory (US/European type).

The circuit breaker is installed on the panel 2001 VU and protects the system. The static inverter is installed near the panel 2001 VU in the AFT cabin overhead–compartment in Zone 263. The razor sockets are installed in the service cabinets of each lavatory.

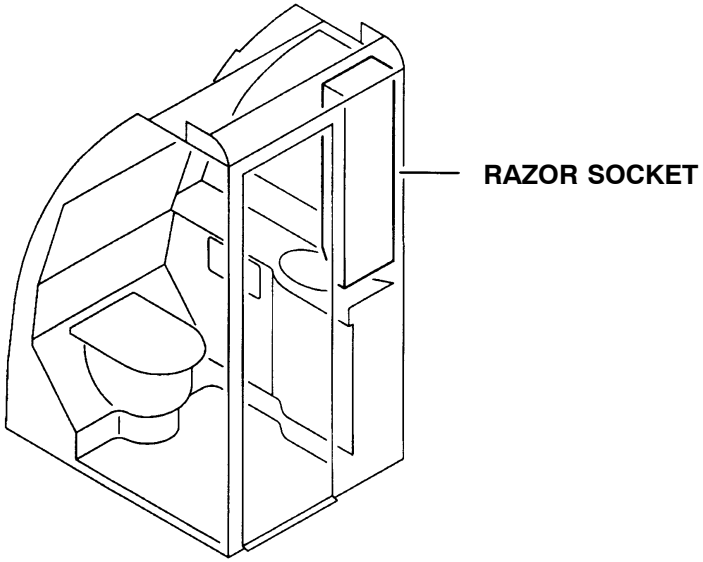
Power supply

The service bus 212XP supplies 115 V AC through the circuit breaker to a contact to the razor outlet sockets.

When a plug is put into the sockets, the contact closes and the power is supplied to the static inverter. The static inverter supplies 110 V 60 Hz to the razor outlet sockets.



LAVATORY EXAMPLE



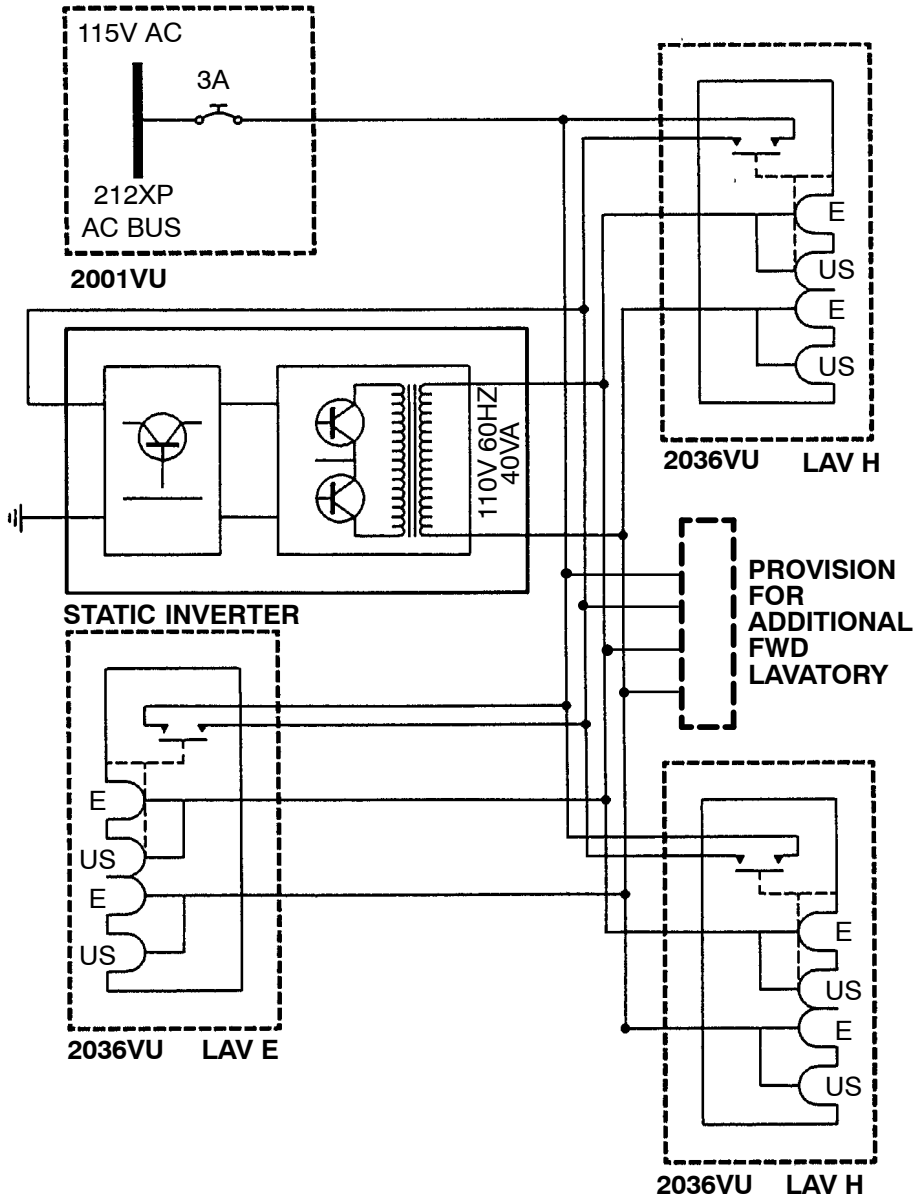


Figure 29 Razor Socket–Electrical Power Supply

LAVATORY EQUIPMENT INTRODUCTION

1 Toilet Unit Shroud

A decorative shroud is installed over the toilet unit and includes the toilet seat and the seat cover.

2 Mirror

The mirror is attached above the washbasin.

3 Washbasin cabinet

The washbasin cabinet has:

- two toilet paper roll holders
- a hot/cold water faucet
- a waste shute with a spring loaded flap.

The washbasin cabinet has a door that gives access to:

- the washbasin drain lines,
- the potable water faucet supply lines,
- the potable heater,
- the waste container (connected to the waste chute)
- the waste container fire extinguisher.

4 Auxiliary light unit

The auxiliary light unit is installed in each lavatory. The light is on all the time the aircraft is supplied with electrical power.

5 Light unit

The light unit/units are installed in each lavatory. They are controlled by the lavatory door–lock microswitch.

6 Handgrip

Handgrip/s are installed in each lavatory to give the lavatory user help, if necessary.

7 Coat hook

The coat hook is installed on the inside of each lavatory door. When it is not in use the coat hook folds up.

8 Ashtrays

The ashtrays are installed internally and externally on each lavatory.

9 Baby nursing table

A baby nursing table is installed in each lavatory. The nursing table is attached to a lavatory walloping above the toilet unit shroud. For use, unlock and fold down the nursing table on to its support, witch is attached to a lavatory wallpanel.

10 Stretcher access

An access flap is installed in the aft sidewall of lavatory D. This gives sufficient space for an occupied strecher to get access to the cabin from the aft passenger/crew door. When it is not in use the access flap is fastened from inside the lavatory.

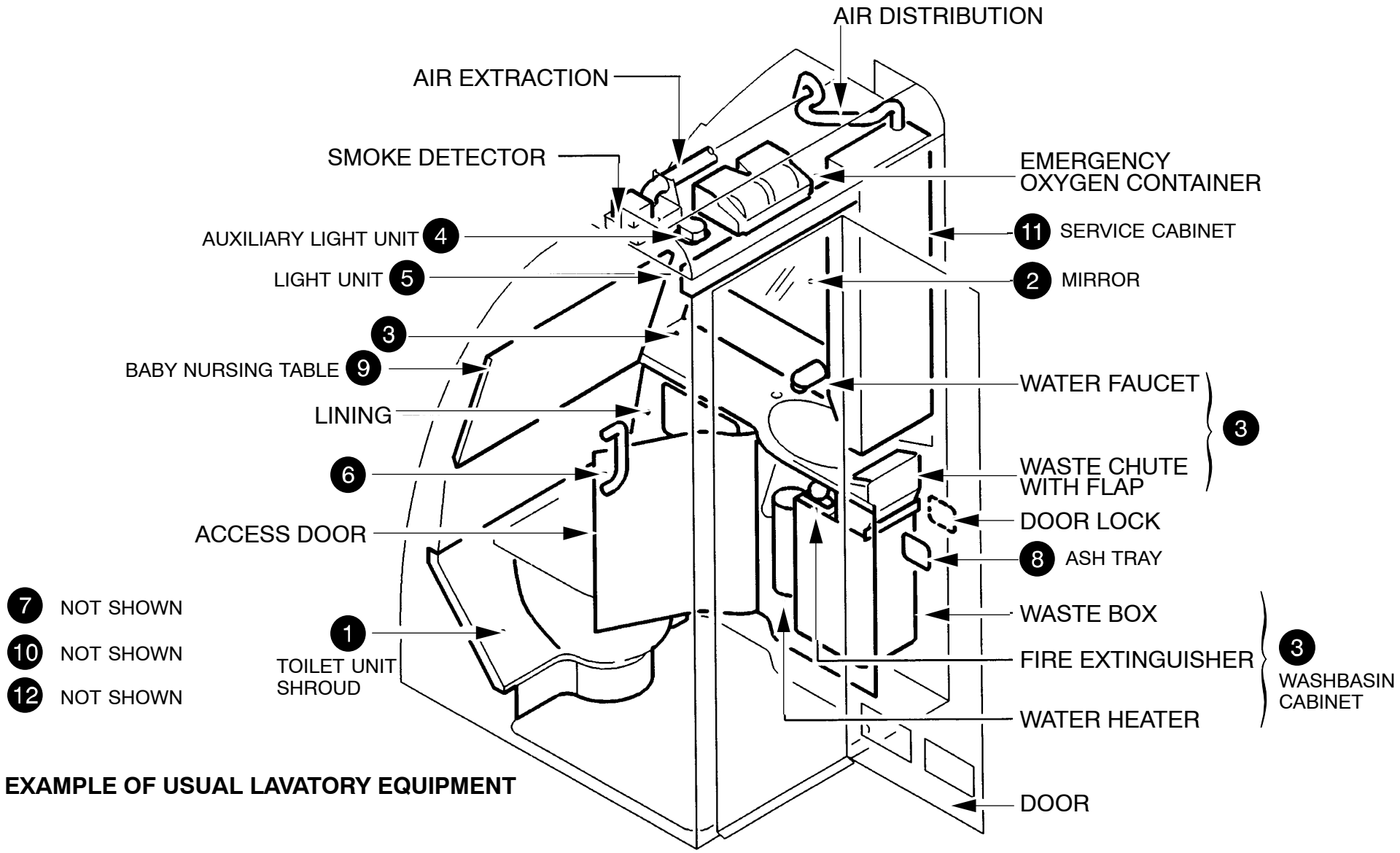
11 Service cabinet

The service cabinet has:

- an individual air outlet
- a loudspeaker (passenger address system)
- a dispenser for towels, sickbags, etc.,
- a razor socket,
- a lighted sign RETURN TO SEAT and/or NO SMOKING,
- a call button.

12 Liquid soap dispenser

A liquid soap dispenser is installed next to the washbasin in each lavatory.



EXAMPLE OF USUAL LAVATORY EQUIPMENT

Figure 30 Lavatory Equipment–Component

25–50 CARGO COMPARTMENTS

CARGO COMPARTMENTS DESCRIPTION (A320/321)

General (A320)

In the lower deck of the aircraft, there are two lower holds (FWD and AFT hold) which are divided into three cargo compartments. The FWD hold is referred to as the FWD cargo compartment. A divider net divides the AFT hold into two cargo compartments. They are referred to as the AFT cargo compartment and the Bulk cargo compartment.

The FWD and AFT cargo compartments each have an equivalent semi–automatic cargo loading system. Cargo can be in containers, on pallets or loaded in bulk. Containers and pallets can be loaded in the FWD and AFT cargo compartment only. The Bulk cargo compartment has tiedown/attachment points for the door nets and for the nets and straps which keeps the bulk cargo in place.

Two hydraulically operated cargo doors which opens to the outside are installed on the right side of the aircraft. A manually operated Bulk door which opens to the inside, is also installed on the lower right side of the aircraft.

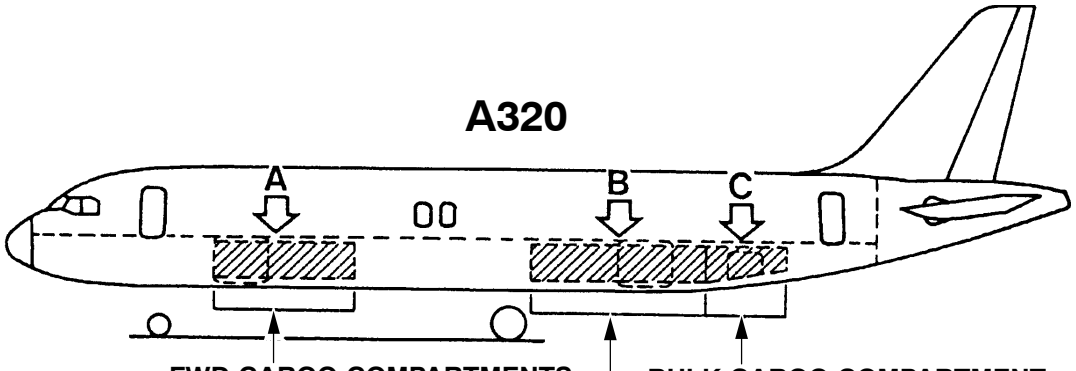
General (A321)

In the lower deck of the aircraft, there are two lower holds (FWD and AFT hold) which are divided into cargo compartments. The FWD into cargo compartment No.1 and No. 2, the AFT into cargo compartment No. 3 and No. 4. The bulk cargo compartment No. 5 is divided from compartment No.3 and No. 4 by an divider net.

The FWD and AFT cargo compartments each have an equivalent semi–automatic cargo loading system. The Bulk cargo compartment has tiedown/attachment points for the door nets and for the nets and straps which keeps the bulk cargo in place.

Two hydraulically operated cargo doors which opens to the outside are installed on the right side of the aircraft. between frame 24A and 28 for the FWD cargo compartment, and between frame 52A and 56 for the AFT cargo compartment.

A manually operated Bulk door which opens to the inside, is also installed on the lower right side of the aircraft.



NOTE:
THE POSSIBILITY OF CONTAINER LOADING IS OPTIONAL ON A320/321

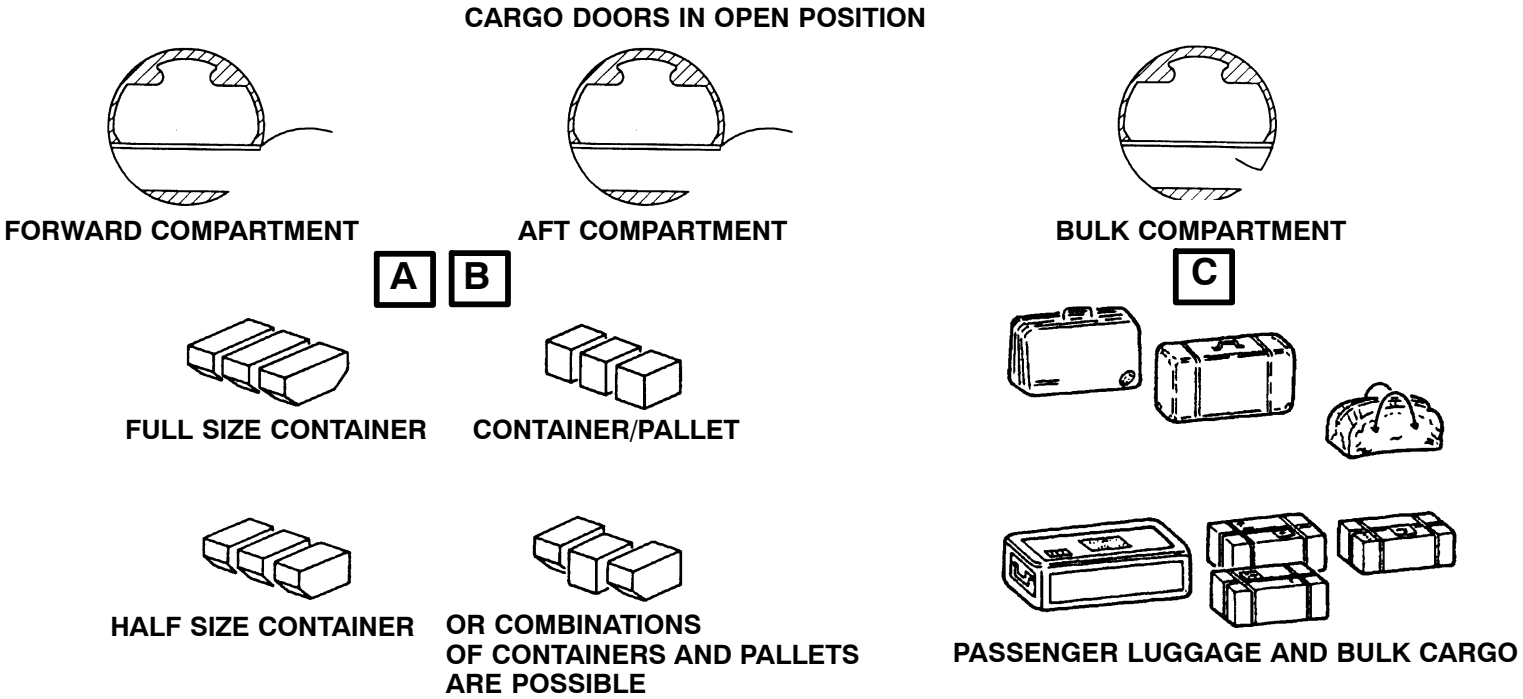


Figure 31 FWD & AFT Lower Holds (A320)

CARGO COMPARTMENTS DESCRIPTION A319

General (A319)

In the lower deck of the aircraft, there are two lower holds (FWD and AFT hold) which are divided into cargo compartments. The FWD into cargo compartment No.1, the AFT into cargo compartment No. 3 and No. 4 and the bulk cargo compartment No. 5. A divider net isolates the cargo compartment No. 5 from the cargo compartments No.3 and No. 4. The FWD, AFT and Bulkcargo compartments have tiedown/attachment points for the door nets and for the nets and straps which keeps the bulk cargo in place.

Two additional door nets are installed in the FWD and AFT cargo compartments.

Two hydraulically operated cargo doors which opens to the outside are installed on the right side of the aircraft for the FWD cargo compartment, and for the AFT and Bulk cargo compartment.

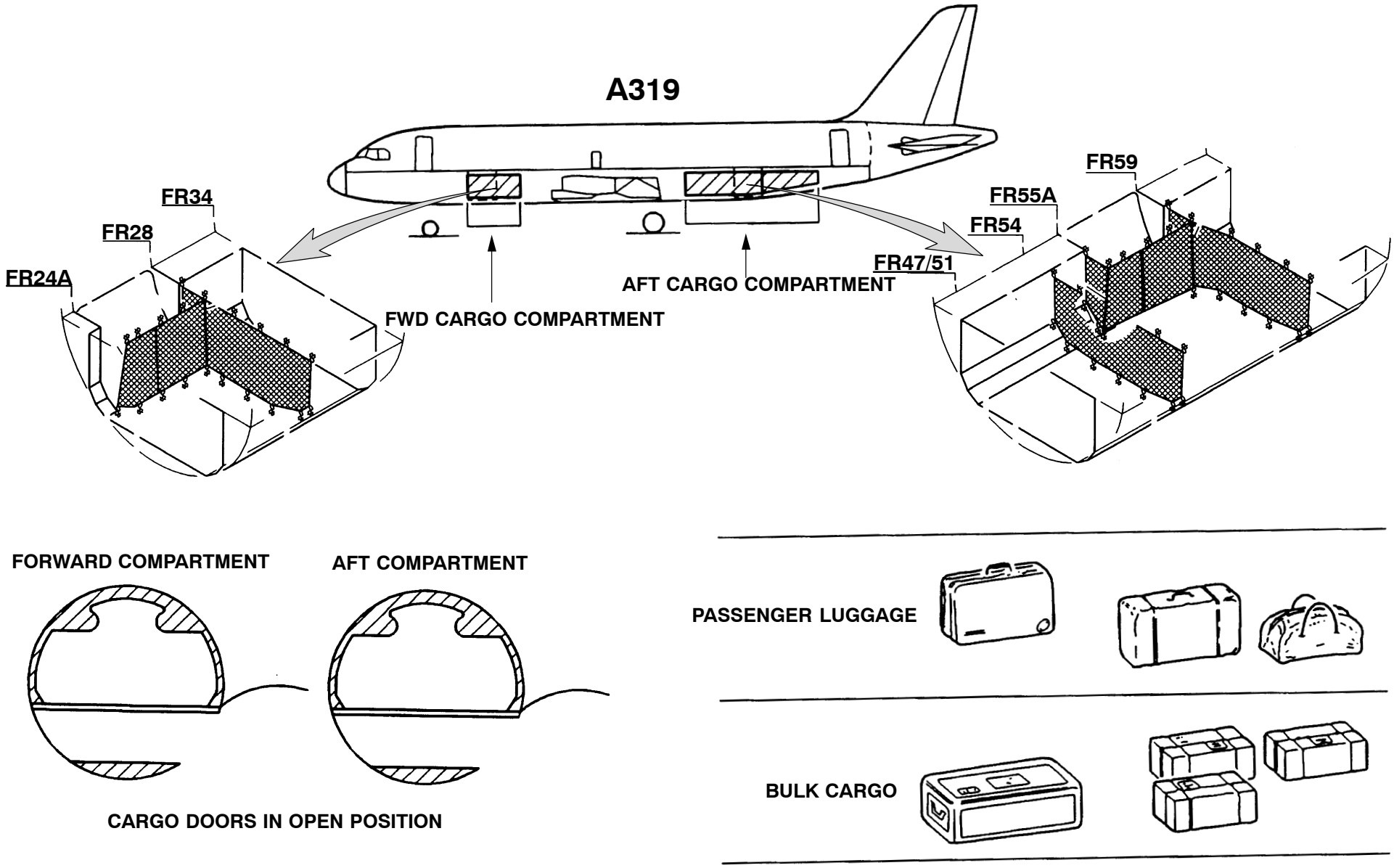


Figure 32 FWD & AFT Lower Holds (A319)

SEMI AUTOMATIC CARGO LOADING DESCRIPTION

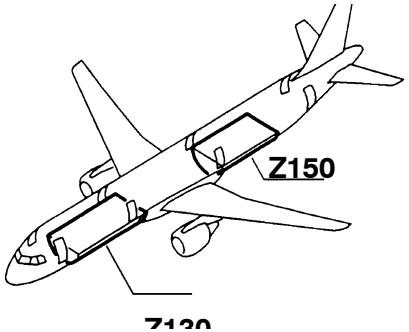
There are two Lower–deck cargo holds in the aircraft, the forward (FWD) lower hold and rear (AFT) lower hold. The FWD lower hold is the FWD cargo compartment. A divider net divides the AFT lower hold into two cargo compartments. The two compartments are referred to as the AFT cargo compartment and the Bulk cargo compartment. The FWD and AFT cargo compartments each have an equivalent semi–automatic cargo loading system. The semi–automatic cargo loading systems transport pallets and containers (unit load devices (ULD)).

System Description

NOTE: The semi–automatic cargo loading systems in the FWD and AFT cargo compartment are equivalent and have the same components. Thus only the semi–automatic cargo loading system description in the FWD cargo compartment is given. Differences between the FWD and AFT cargo compartments are given where applicable.

On each cargo compartment door there is a control panel from which you operate the semi–automatic cargo loading system in the cargo compartment. One person is sufficient to operate a cargo loading system.

A joystick on the control panel controls the movement of ULD to and from their bay in the cargo compartment. The control panel sends electrical signals through the control box to the applicable power drive units (PDU). The PDU move the ULD in the necessary direction and to their bays. When the ULD is in the correct bay, you lock it with a manually operated latch. If a power failure or malfunction occurs, it is possible to load/unload the ULD manually.



CARGO LOADING COMPONENTS

Ball Mats

The ball mats are installed across the full width of the cargo compartment floor. In the FWD cargo compartment they are between FR25 and FR28. In the AFT cargo compartment they are between FR52A and FR56.The ball strips are installed between the door sill latches. The ball mats and ball strips make it possible to move a ULD in the longitudinal and lateral direction. The ball mats and ball strips have an aluminum structure and hold the ball unit assemblies.

Ball Unit

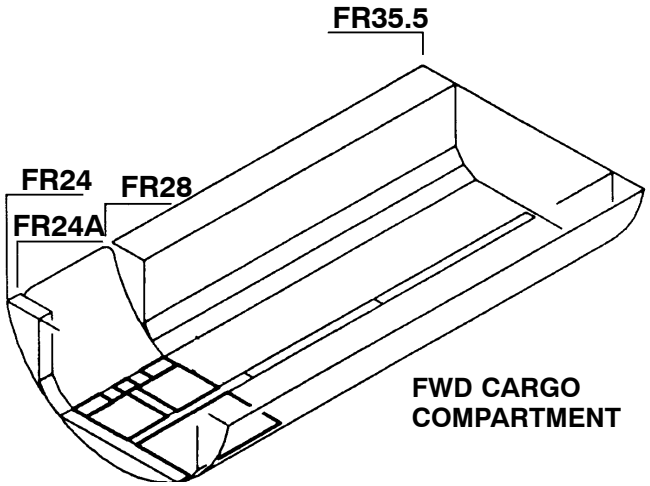
Each ball unit has a ball installed in a bearing shell. This shell is contained in a circular housing. A top cover holds the ball and bearing shell in the housing. The top cover is also a dirt shield. The top cover has 2 spring struts for installation.

Roller Tracks

The roller tracks are on the centerline of the cargo compartment floor. Installed in the roller tracks are transport rollers. The roller tracks permit ULD to move in the longitudinal direction.

Transport Roller

Each transport roller assembly has a roller and 2 bearings installed on a shaft. A washer and a cotter pin on each end of the shaft safety the roller assembly to the roller track.



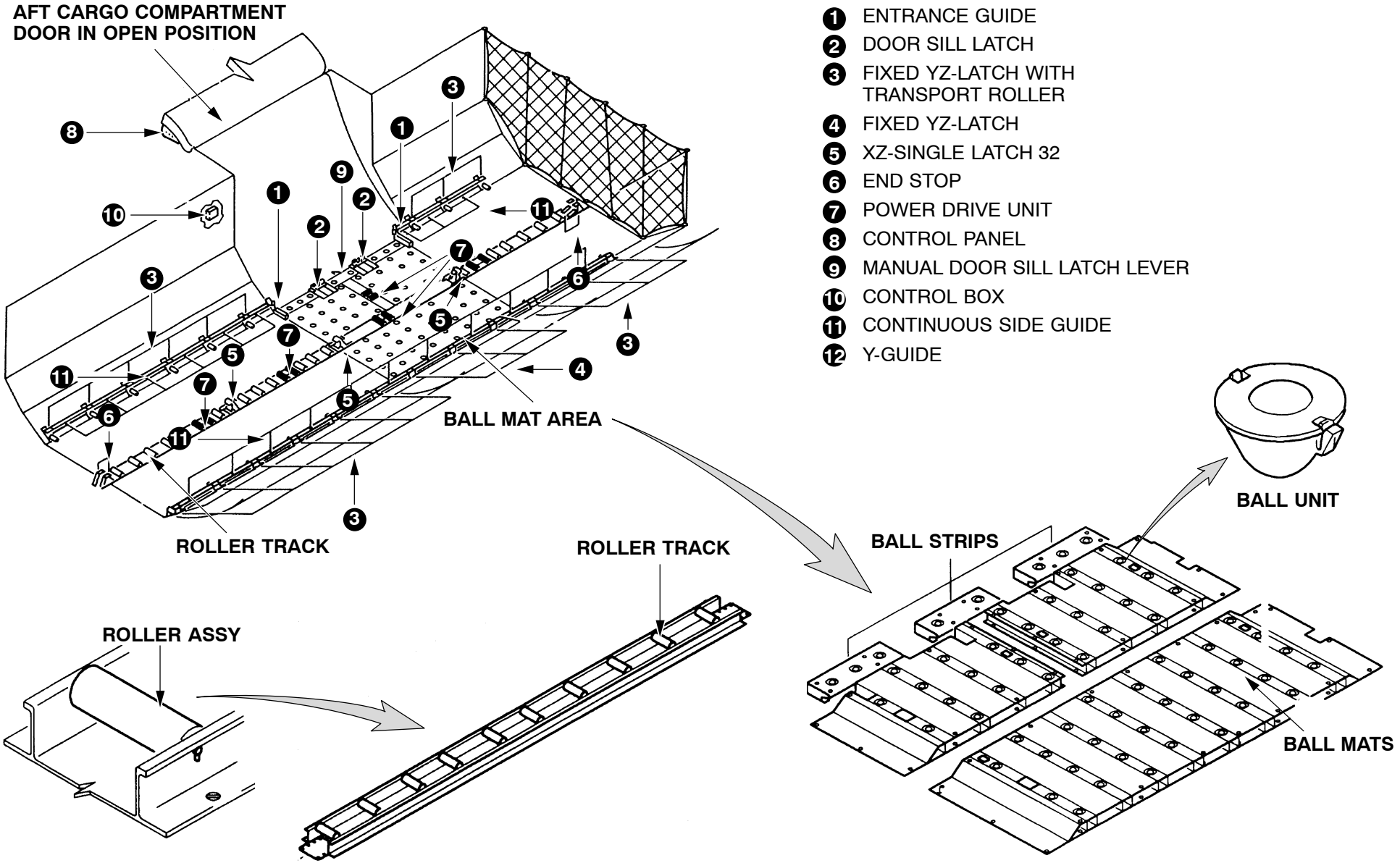


Figure 33 AFT Cargo Compartment (Example)

Control Panel

The control panels for the FWD and AFT semi–automatic cargo loading systems (FWD and AFT systems) are on the cargo compartment doors. They are installed at the forward edge on the inner face of each cargo compartment door. The control panels are the control panel 2O2OVU1 for the FWD system and the control panel 2O2OVU2 for the AFT system. On each control paneL there are:

1 One POWER ON/OFF switch 5MY,

The POWER ON/OFF switch 5MY is a toggle switch. The four–position joystick 4MY goes back to the center/neutral position automatically. The joystick controls the operation of the PDU. The joystick is gated to permit the manual seLection of one operation at a time. The four positions available are:

- IN–the lateral PDU operates in the load direction,
- OUT–the lateral PDU operates in the unload direction,
- FWD–the longitudinal PDU operate in the flight direction,
- AFT–the longitudinal PDU operate against the flight direction.

When the POWER ON/OFF switch is set to ON, power is supplied to the system when the YZ–latches of the door sill latches are lowered. This operates the limit switches (2004VU1, 2OO4VU2 for the FWD system and 2OO4VU3, 2OO4VU4 for the AFT system).

2 One joystick 4MY,

3 One DOOR SILL LATCH switch 6MY,

The DOOR SILL LATCH switch 6MY is a toggle switch. An internal spring keeps it in the UP position. The DOOR SILL LATCH switch 6MY operates the override-able Y–latch of the door sill latch. To lower the override-able Y–latch, put the DOOR SILL LATCH switch to the DOWN position and hold it there. This causes the actuator 2OMY for the FWD system to operate and Lower the override-able Y–Latch. For the AFT system it is the actuator 12OMY.

You can release the DOOR SILL LATCH switch 6MY when the ULD is above the override-able Y–latch. It then goes back to the UP position. The actuator is then in operation and compresses a spring in the mechanism. The spring makes the override-able Y–latch move to the lifted position when the ULD is moved away.

4 One POWER indicator light 7MY.

When you put the POWER ON/OFF switch to the ON position, the power contactor in the control box closes, and AC and DC power is supplied to the system. The control box has a monitor circuit which controls the power to the POWER light 7MY. The POWER light comes on when the power supply is correct.

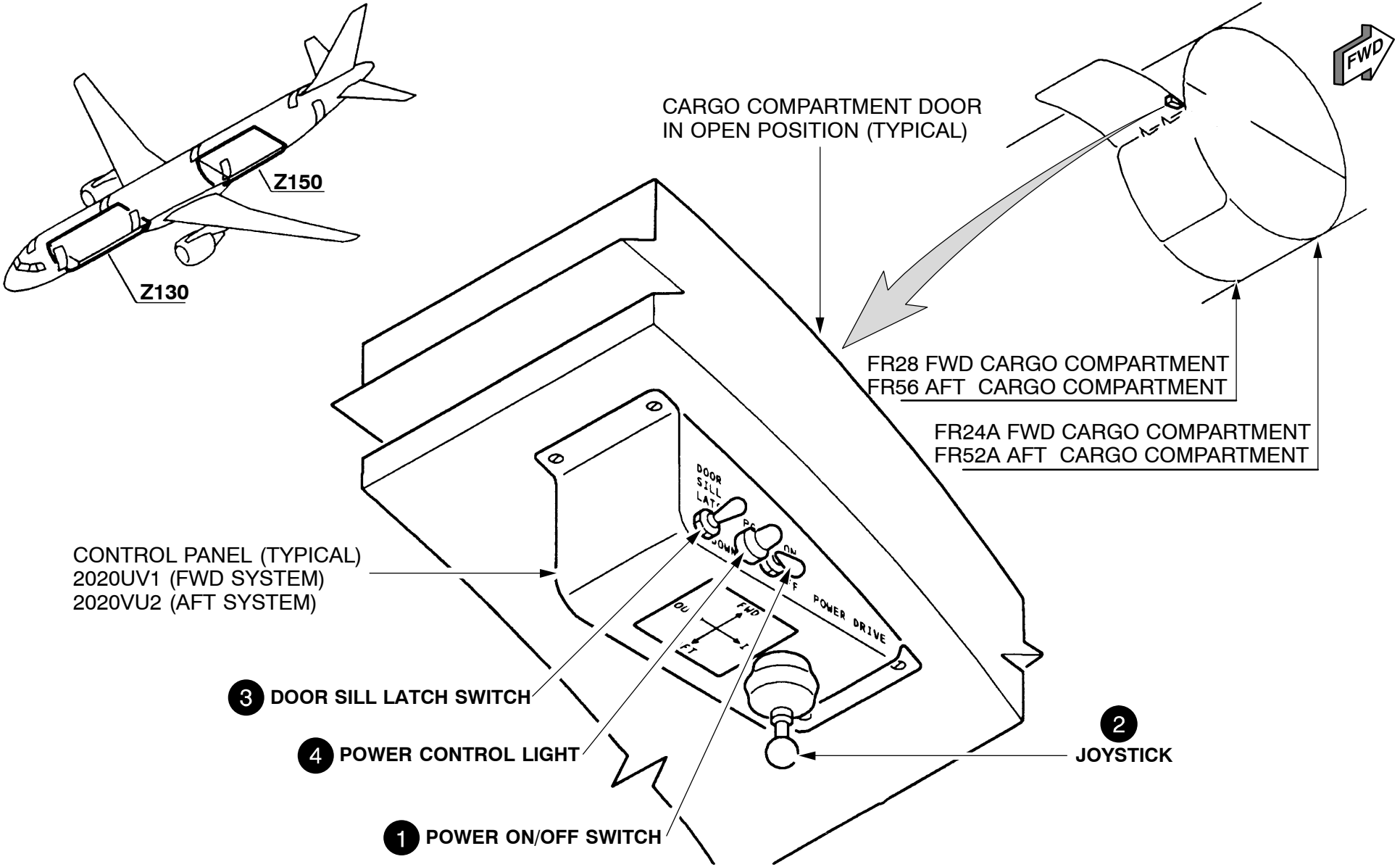


Figure 34 Contr. Panel–FWD/AFT Cargo Compart. (Typical)

CONTROL BOX DESCRIPTION

The control boxes 1MY and 1OMY are installed behind the sidewall panels of the FWD and AFT cargo compartments. The control box 1MY is between STA1163 (FR28) and STA1217 (FR29) in the FWD cargo compartment. The control box 1OIMY is between STA2349 (FR51) and STA24O3 (FR52) in the AFT cargo compartment.

Each control box has two relays which are power relay D2 and AC reverse relay D1. The control boxes also have an electronic circuit card, terminal junctions and two electrical connectors.

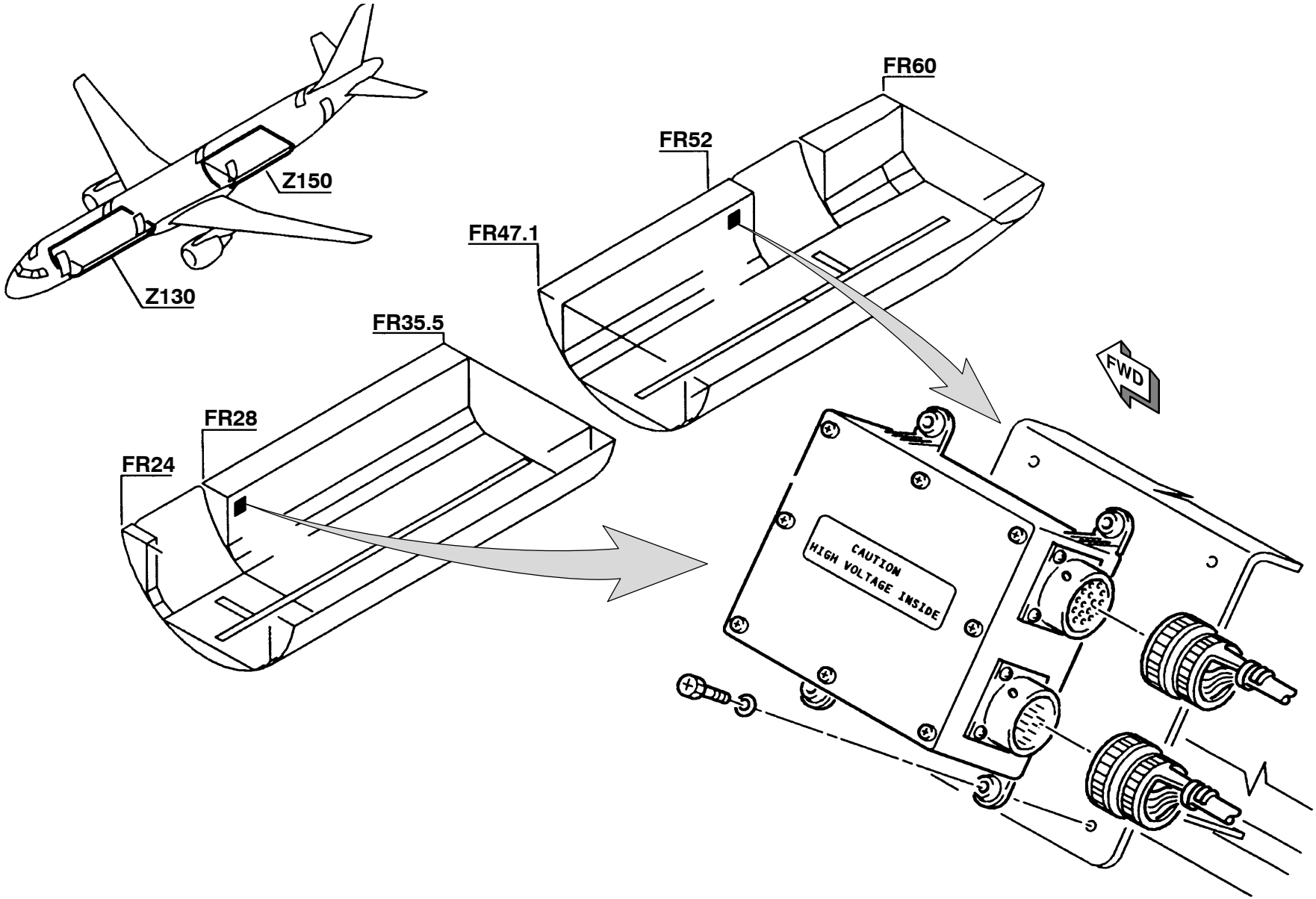


Figure 35 Cargo Loading System Control Box

POWER SUPPLY CARGO LOADING SYS. DESCRIPTION

Power Supply

The AC and the DC systems of the aircraft, supply electrical power to the semi–automatic cargo loading system.

The busbar 212XP supplies 115/2OO V AC through the circuit breaker 3MY to the control box 1MY in the FWD cargo compartment. The busbar 212XP also supplies 1l5/2OO V AC through the circuit breaker 1O3MY to the control box 1O1MY in the AFT cargo compartment. The control boxes 1MY and 1OMY supply electrical power (AC) to the power drive units.

The busbar 6O2PP supplies 28 V DC through the circuit breaker 2MY to the control box 1MY in the FWD cargo compartment. The busbar 6O2PP also supplies 28 V DC through the circuit breaker 1O2MY to the control box 1O1MY in the AFT cargo compartment.

The control boxes supply electrical power to:

- the door sill latch actuator 2OMY (FWD cargo compartment),
- the door sill latch actuator l2OMY (AFT cargo compartment),
- the relays in all the power drive units,
- the proximity switches,
- the control panels.

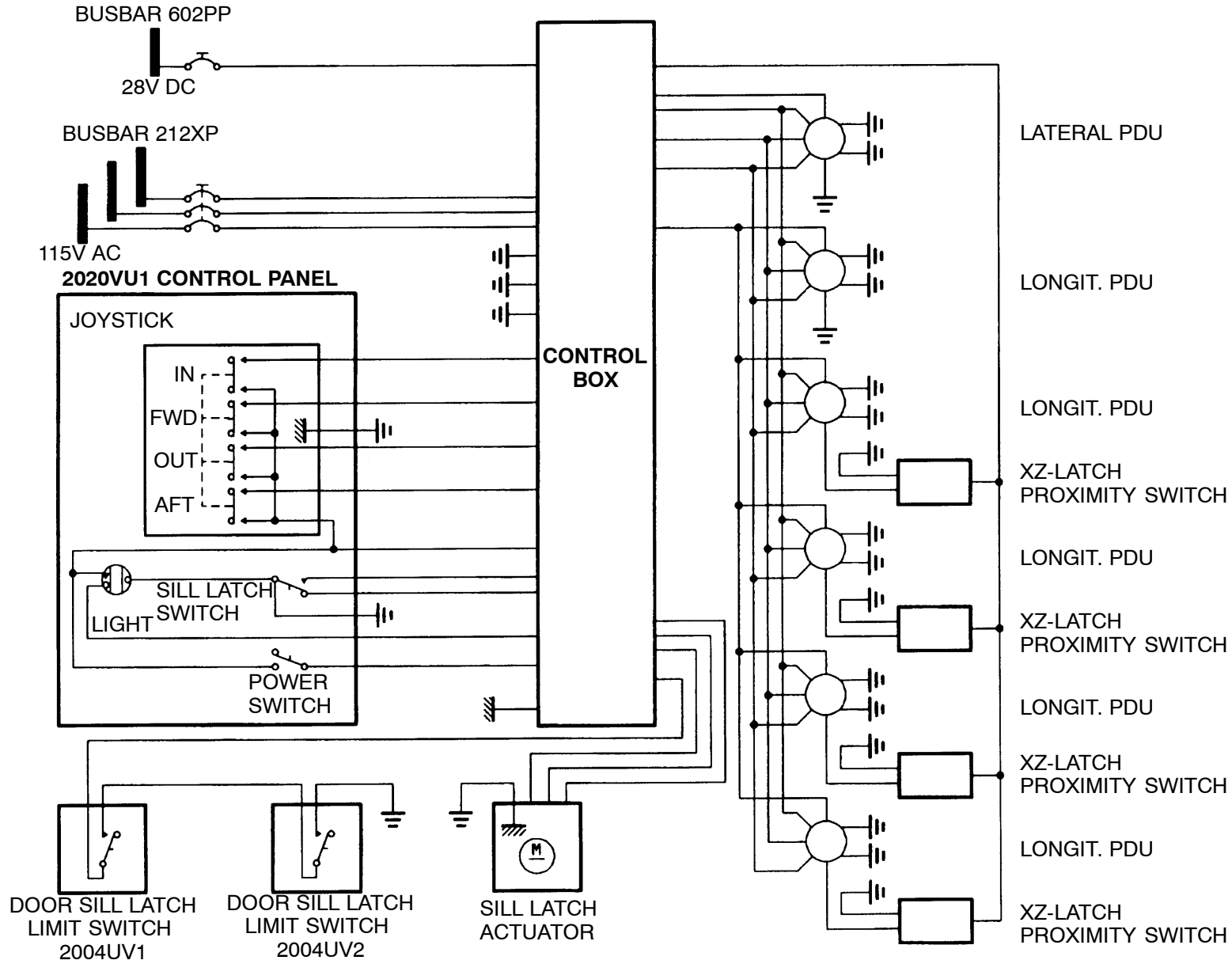


Figure 36 FWD Cargo Loading Power Supply (AFT is Similar)

POWER DRIVE UNITS DESCRIPTION

The power drive units (PDU) are installed in the FWD and AFT cargo compartments. The PDU for longitudinal movement of the ULD are in the roller tracks. For the lateral movement there is a single PDU on the right side of each cargo compartment in the ball mat area.

In the FWD cargo compartment the PDU to move the ULD in the longitudinal direction are installed:

- one at FR27,
- one behind FR29,
- one behind FR31,
- one at FR35,
- one behind FR35.2.

In the AFT cargo compartment the PDU to move the ULD in the longitudinal direction are installed:

- one at FR47.4,
- one at FR49,
- one between FR51 and FR52,
- one at FR54,
- one behind FR56.

The PDU to move the ULD in the lateral direction in the FWD cargo compartment is between FR26 and FR27. In the AFT compartment the PDU is between FR54 and FR54A. Each PDU has an aluminum housing with an electrical motor, a gear train and a rubber–covered roller. The motor is a three–phase squirrel–cage motor with a thermal overload protection.

The motor operates with 115/200 V AC, 400 Hz. When the PDU is energized, the drive roller is lifted until it touches the underside of the ULD. When the PDU is de–energized, the roller stops and is lowered to the cargo compartment floor level. When the PDU operates in the opposite direction the supply phases are changed and make the gears operate in the opposite direction.

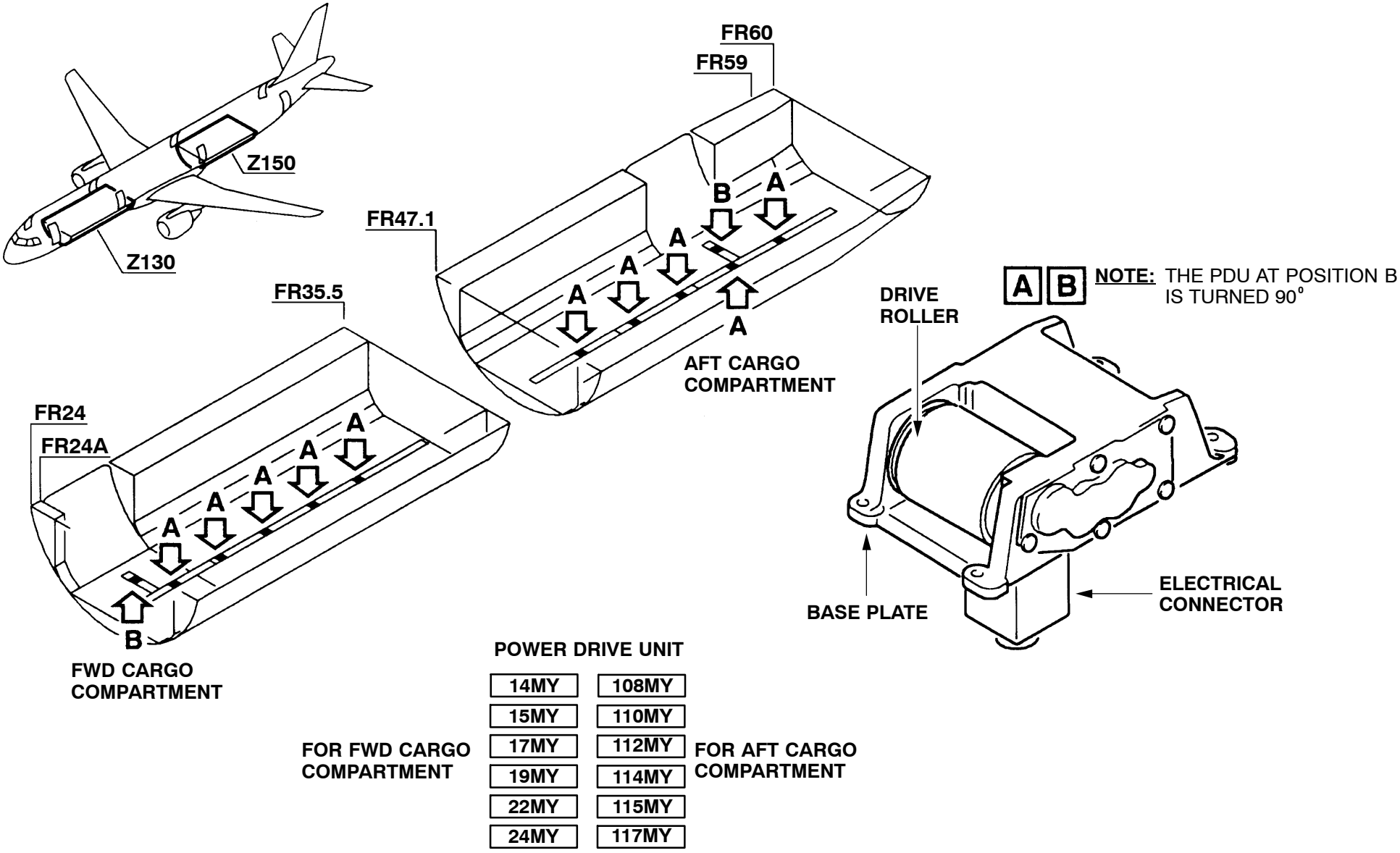


Figure 37 Power Drive Unit–FWD & AFT Cargo Compartment

DOOR SILL LATCHES DESCRIPTION

General

Two door sill latches are installed in the FWD and AFT cargo compartments. The latches are installed on the door sills of each cargo compartment. In the FWD cargo compartment they are at FR26 and FR27. In the AFT cargo compartment they are installed between FR53 and FR54 and at FR55.

Each door sill latch has:

- a housing,
- a manually operated YZ–latch,
- an override-able Y–latch,
- a guide–in roller,
- a limit switch.

The functions of the door sill latches are:

- to prevent the accidental roll–out of a ULD,
- to lock a ULD in position,
- to hold the ULD vertical with the guide–in roller.

Manually operated YZ–Latch

The manually operated YZ–latch locks the ULD in the door area in position. When the YZ–latch is lifted, a spring pushes on a pawl which locks the YZ–latch in position. When you push the release lever on the side of the door sill latch down, the pawl disengages and permits a spring to lower the YZ–latch manually until the pawl locks it in position. When the YZ–latch moves, it operates a limit switch.

Limit Switch

The limit switch supplies an electrical two–way lock. It prevents the operation of the cargo compartment door when the YZ–latch is in the lowered position. The limit switch also electrically isolates the cargo loading system when the YZ–latch is in the lifted position.

Override-able Y–LATCH

A ULD can move over the Y–latch, but only in the load direction. The ULD pushes the Y–latch down. A spring lifts the Y–latch again when the ULD is moved away. Thus the latch prevents the accidental roll–out of a ULD. To unload a ULD you must lower the Y–latch. To lower the Y–latch electrically, you operate the SILL LATCH switch on the control panel.

When you operate the SILL LATCH switch, the electric motor of the actuator starts to turn and lowers the Y–latch through an actuating mechanism.

If an electrical malfunction occurs, you can lower the Y–latch manually. To lower the Y–latch manually, operate the manual door–sill latch lever which is installed between the door sill latches.

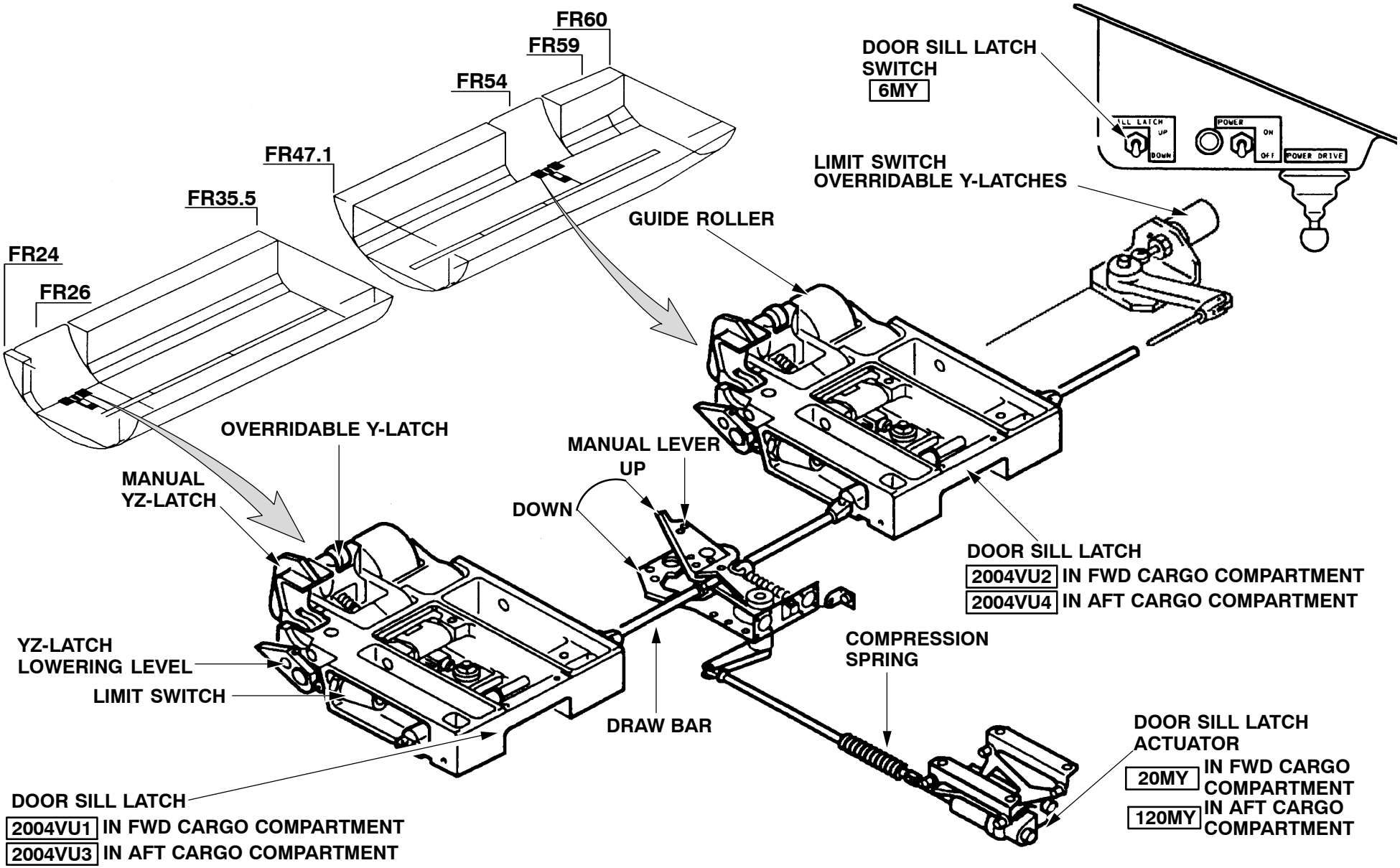


Figure 38 Door Sill Latches & Sill Latch Actuator

GUIDES & FIXED YZ–LATCHES DESCRIPTION

General

The components to guide and latch the ULD have code letters which help to identify them.

The code letters are:

- X for the longitudinal direction,
- Y for the lateral direction,
- Z for the vertical direction.

More than one code letter shows that the component operates in more than one direction. For example, the XZ–latch is for the X and Z directions. Also, the distance between the locking faces is given in millimeters. Thus the XZ–single latch 32 tells you that the distance between the locking faces is 32 mm (1.2598 in.).

Entrance Guide

There are two fixed entrance guides in each of the cargo compartments. The entrance guides are installed on the door sills, one on each side of the door openings. The entrance guides align the ULD in the X and Y directions when they move through the openings. The guides also prevent damage to the door frame. A vertical guide roller is in each entrance guide. The guide roller keeps the friction between the base plate of the ULD and the guide to a minimum.

Y–Guide

A fixed Y–guide is installed in the FWD cargo compartment. The Y–guide is installed across the forward end of the ball mat area. It is installed from the entrance guide to the end stop in the roller track between FR24A and FR25. The Y–guide aligns the ULD in the ball mat area. Three vertical guide rollers are installed in the Y–guide. The guide rollers keep the friction between the base plate of the ULD and the guide to a minimum.

Fixed YZ–Latch and Continuous Side Guide

The fixed YZ–latches are on each frame at the sidewalls of the FWD and AFT cargo compartments. On some of the YZ–latches, a transport roller is installed which functions as a roller track.

The latches hold the ULD in the Y and Z directions. A vertical roller in the latch is a guide in the X direction. On the top of each fixed YZ–latch there is a tie–down point which has a load capacity of 2000 lb (907.1840 kg) in any direction. Fixed YZ–latches without a transport roller are on the frames opposite the cargo compartment doors in the ball mat areas.

They are equivalent to the YZ–latches with the transport roller. The YZ–guide rails are installed between the fixed YZ–latches on the left and right sides of the FWD and AFT cargo compartments. The YZ–guide rails between the fixed YZ–latches give a continuous side guide. The continuous side guide permits an easier movement of ULD with a baseplate deformation. It also prevents damage to the floor panels which are not level.

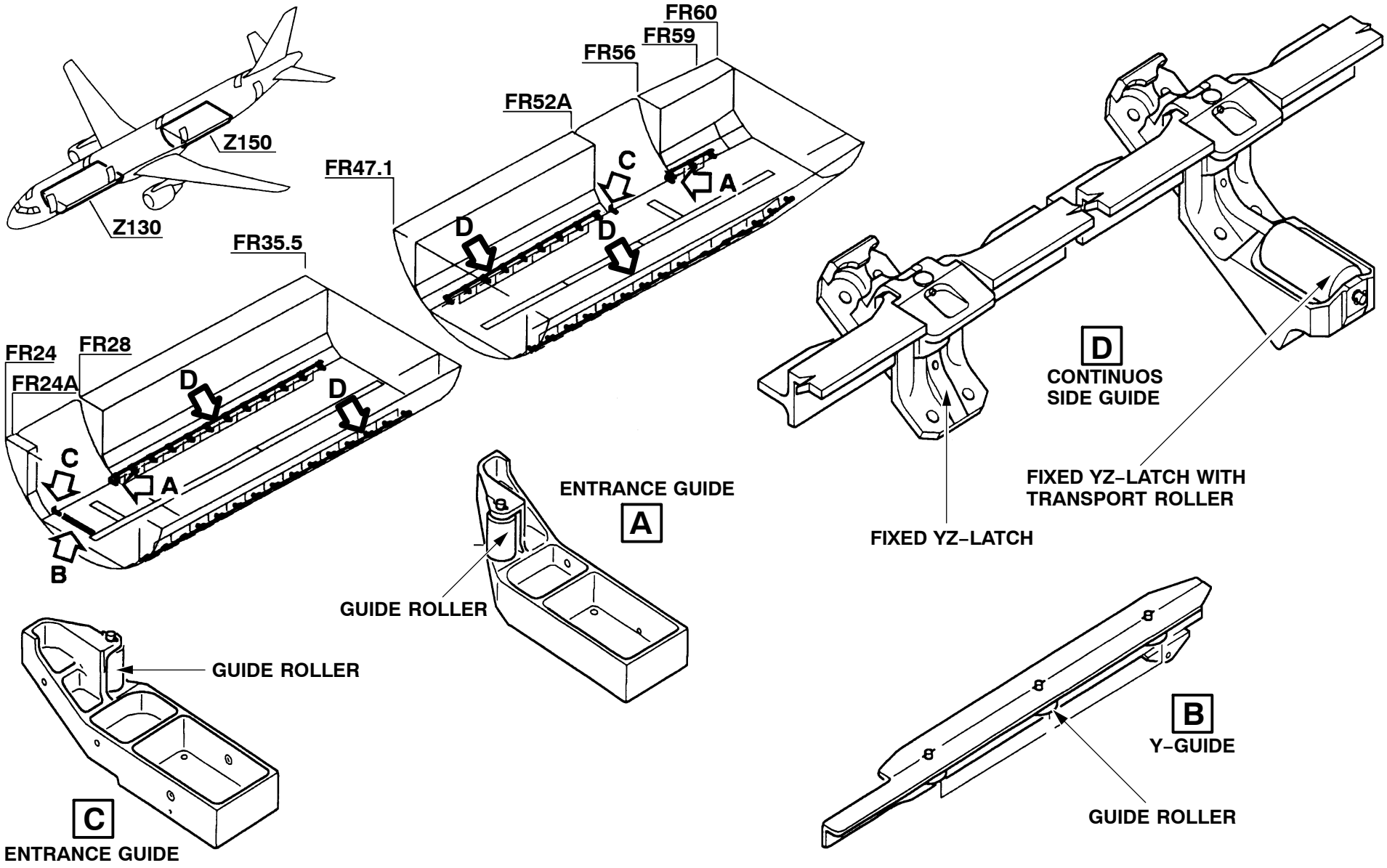


Figure 39 Guides and Fixed YZ–Latches

XZ–SINGLE LATCHES 32 & END STOPS DESCRIPT.

XZ–Single Latch 32

The manually operated XZ–single latches 32 are in the FWD and AFT cargo compartments. The XZ–single latches 32 are installed in the roller tracks which are on the centerline of the cargo compartment floor. The XZ–single latches 32 can lock one or two ULD (two when the ULD are placed back to back). They hold ULD with a base plate size of 60.4 x 61.5 in. in the X and Z directions. The XZ–single latch 32 have latching elements which lock and secure ULD in their related positions.

The latching elements can lock and secure one or two ULD (two when the ULD are placed back to back). A yellow marked safety indicator is located on the surface of the locking element, this shows if the latch is in the fully locked or unlocked condition. When the latch is in the fully locked position you can not see the yellow indicator.

A proximity switch is below each XZ–single latch 32. The proximity switches are wired in series with the PDUs. Thus power is only available at the PDU when the latches are lowered.

End Stops

The end stops are in the roller tracks installed on the center line of the cargo compartment floor in the FWD and AFT cargo compartments. They have the shape of fixed XZ–single latches and hold the ULD in the X and Z directions.

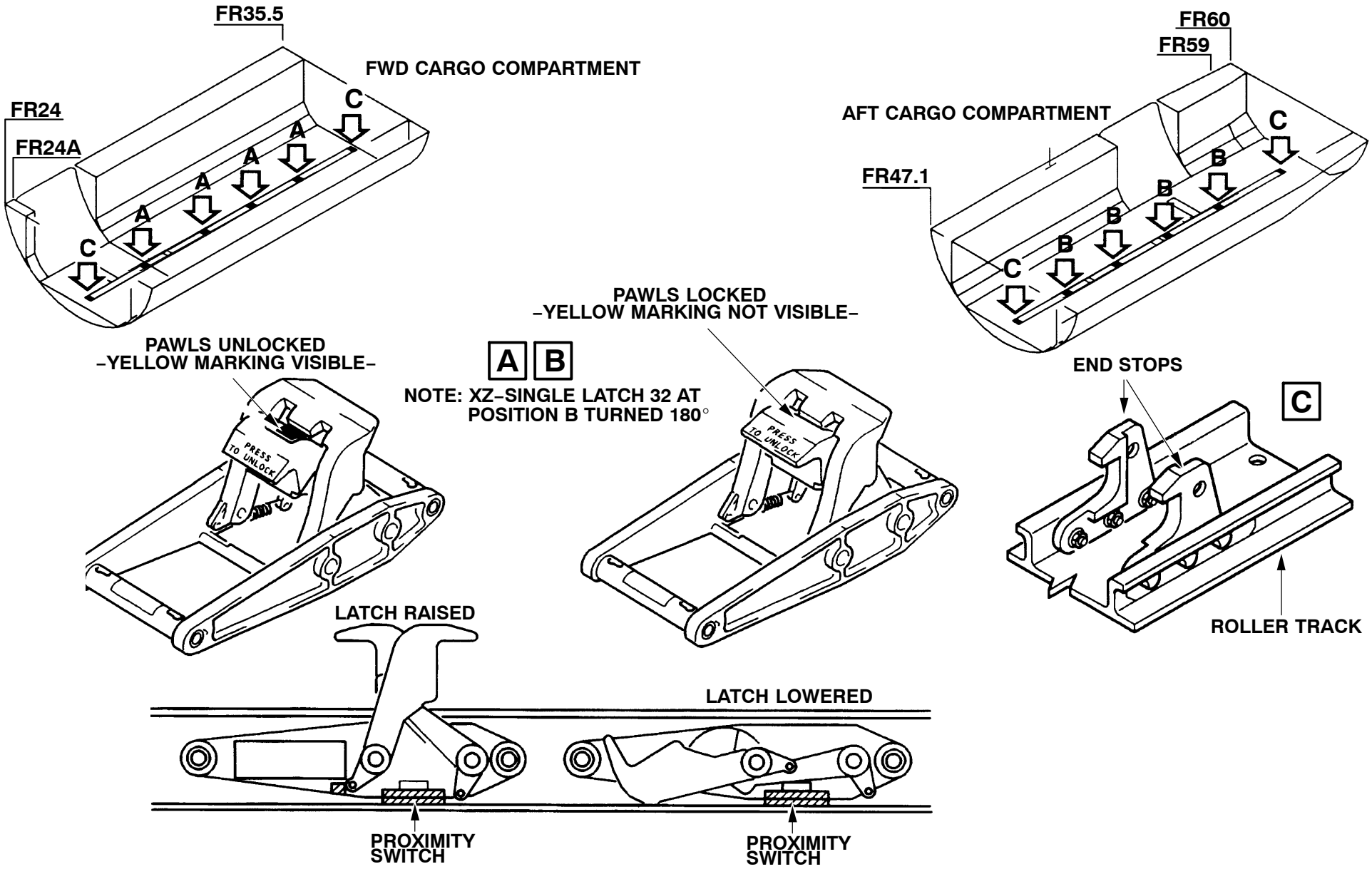


Figure 40 XZ–Single Latch 32 & End Stops

FWD/AFT CARGO COMP. DRAIN DESCRIPTION

General

The drainage system of each cargo compartment is installed below the cargo compartment floor. The drainage system in the FWD cargo compartment is installed at FR34. In the AFT cargo compartment it is installed at FR58 and FR59. The drainage system collects and lets rain water and spilt liquids flow out of the cargo compartments.

Description

The drainage system of each cargo compartment has filters, filter housings, drain funnels, elbows and flexible hoses. Short pieces of flexible hose also make connection sleeves. The filter and filter housing are installed on the drain inlets in the cargo compartments. The filter prevents a blockage of the drain system. The drain funnels are installed beneath the drain inlets. Flexible hoses connect the drain funnels to the elbows. From the elbows the flexible hoses end at a mutual tee. The flexible hoses are secured in position with straps.

Operation

The rain water and spilt liquids that may have collected in the cargo compartments, flow out through the inlet points. From the inlet points, the liquid moves through the sleeves, elbows and the flexible hoses into the tee. The tee lets the liquid out into the fuselage lower shell where the collected liquid is let out of the aircraft.

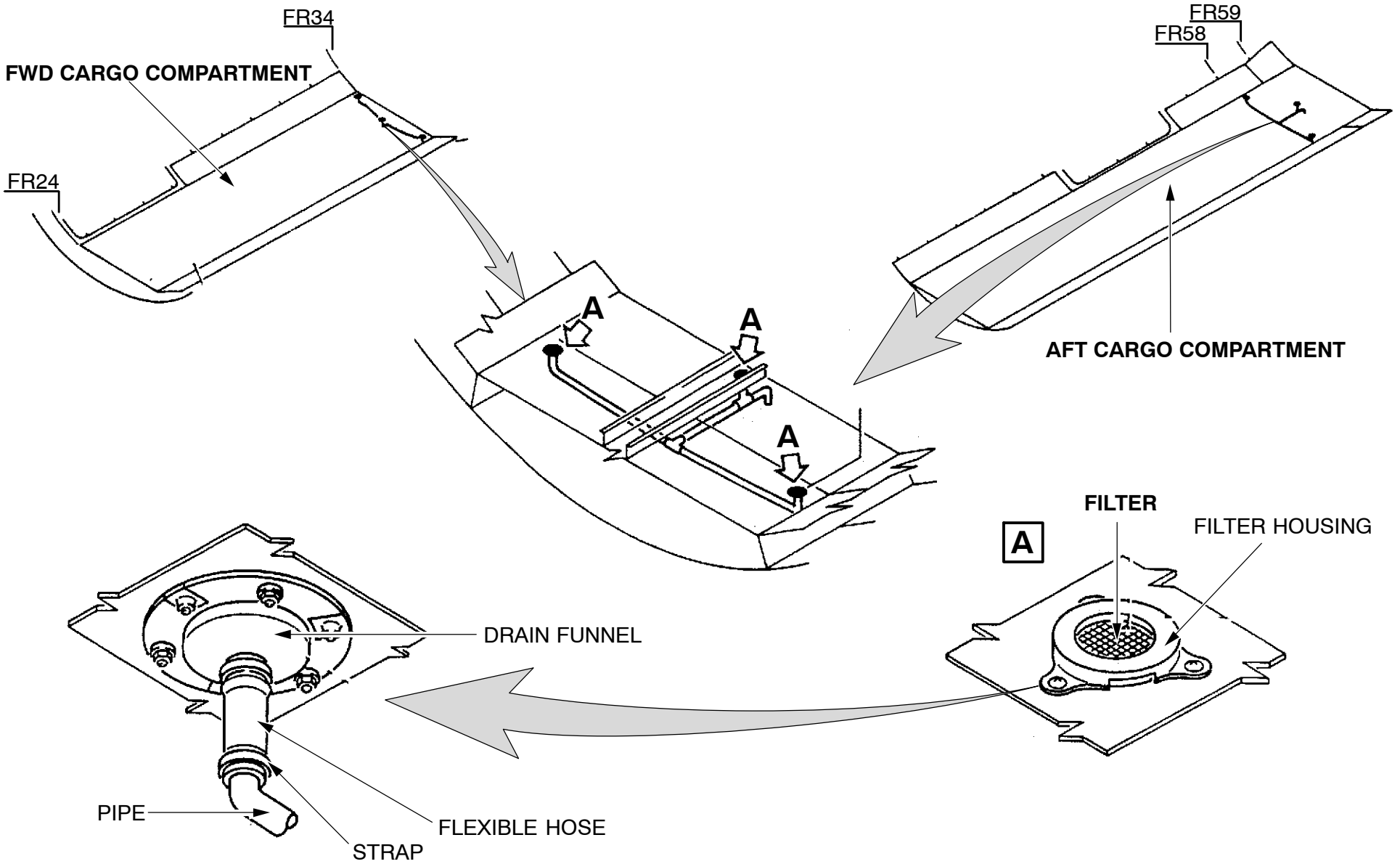


Figure 41 Cargo Compartment Drain System

LININGS AND FURNISHINGS DESCRIPTION

GENERAL

NOTE: The description is for the FWD Cargo compartment the AFT Cargo compartment is similar.

The FWD cargo hold is specified as the FWD cargo compartment. Included in the FWD cargo compartment are the subsequent linings:

- the left sidewall lining
- the ceiling panel
- the right sidewall lining.

Included in the FWD cargo compartment are the subsequent furnishings:

- the loading area light
- the smoke detector panels
- the rapid decompression panels
- the cargo compartment lighting
- the door net and the divider net
- the tie–down/net attachment points.
- the cargo loading system

SYSTEM DESCRIPTION

Sidewall Linings and Ceiling Panels

The sidewall linings and ceiling panels in the FWD cargo compartment prevent damage to the aircraft structure. They are made of flame–resistant synthetic material and permit fast decompression.

The sidewall linings and ceiling panels are attached with quick–release fasteners to:

- the support struts
- the cross beams
- the cargo compartment brackets.

The sidewall linings and ceiling panels are a sandwich construction. They are made of honeycomb core, which is bonded between the layers.

Deflector Strips

Deflector strips are installed at the center of the ceiling panels in the cargo compartment. The deflector strips keep a clearance between the top of the cargo and the components of the smoke detection and fire extinguishing system. The deflector strips also make sure that the decompression panels for a fast decompression can open.

Smoke Detector Panel

The FWD cargo compartment is completed with the smoke detection system. The ceiling panel has therefore a cutout for the smoke detector panel. The smoke detector panel is installed at the center of the ceiling panel between FR29 and FR30.

Rapid Decompression Panels

Rapid decompression panels (blow–in and blow–out) are part of the cargo compartment linings. They are installed in the cutouts of the ceiling panels, the lateral right sidewall lining at FR28 and in the FWD cargo compartment FWD wall lining. Catch assemblies hold them in the cutouts. The rapid decompression panels are sealed to the ceiling panels and to the sidewall lining with adhesive tape.

Divider Net and Door Net

There are two types of nets installed in the FWD cargo compartment. The divider net divides the cargo compartments into sections. The door net prevents damage to the cargo compartment door. The door net and the divider net are attached to the tie–down and net attachment points.

Loading Area Light

The loading area light is a spotlight and is installed in the ceiling panel at the FWD cargo compartment door. The intensity of the loading area light permits to read labels on equipment near the cargo compartment door.

Cargo Compartment Lighting

The FWD cargo compartment has a lighting system with neon tubes and is installed in the center of the ceiling panel. Toggle switches installed at the FWD cargo compartment door control the lighting system.

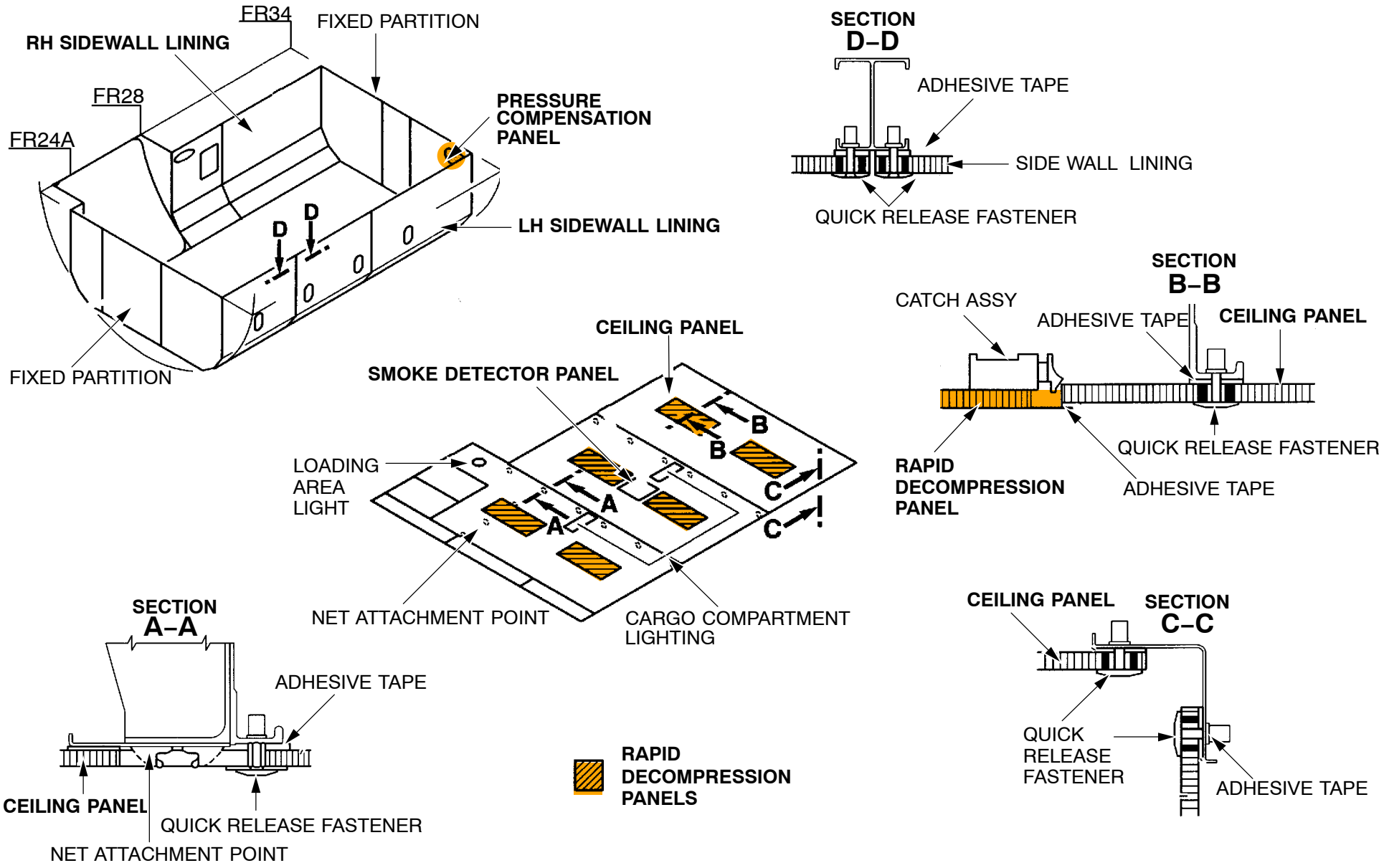


Figure 42 Sidewall Linings & Ceiling Panels

MODIFIED STUDS AND DECOMPRESSION FUNCTION

CAUTION: MAKE SURE YOU DO NOT INSTALL OLD VERSION FASTENERS ON MODIFIED SIDEWALL AND CEILING PANELS. THIS WOULD DE-ACTIVATE THE DECOMPRESSION FUNCTION.

CAUTION: THE TORQUE VALUE FOR MODIFIED FASTENERS IS VERY LOW. MAKE SURE NOT TO DAMAGE THE FASTENERS.

The panels in the ceiling, side walls, and partition walls installed in the cargo compartments are attached to cargo frames by fasteners. The panels have a composite structure made of a honeycomb–core, flame–retardant laminated–skin and foam–tape.

The Panel assemblies include a panel and fastener assemblies. The fastener assemblies are attached to the frames and include pin, fastener with internal thread and bracket. The bracket has a release mechanism (the bracket bends and allows the fastener to release) that opens the panel into the cargo compartment in case of sudden pressure difference. The venting area created by opening of panels provides pressure equalization between cabin and cargo (blow in panels).

NOTE: Once the release mechanism of the bracket is operated, the fastener assembly must be replaced.

Blow out decompression panels are installed on FWD / AFT and Bulk cargo compartment ceiling panels.

In case of sudden pressure difference the blow out latches release and panels open. The venting area created by opening of panels provides pressure equalization between cabin and cargo (blow out panels).

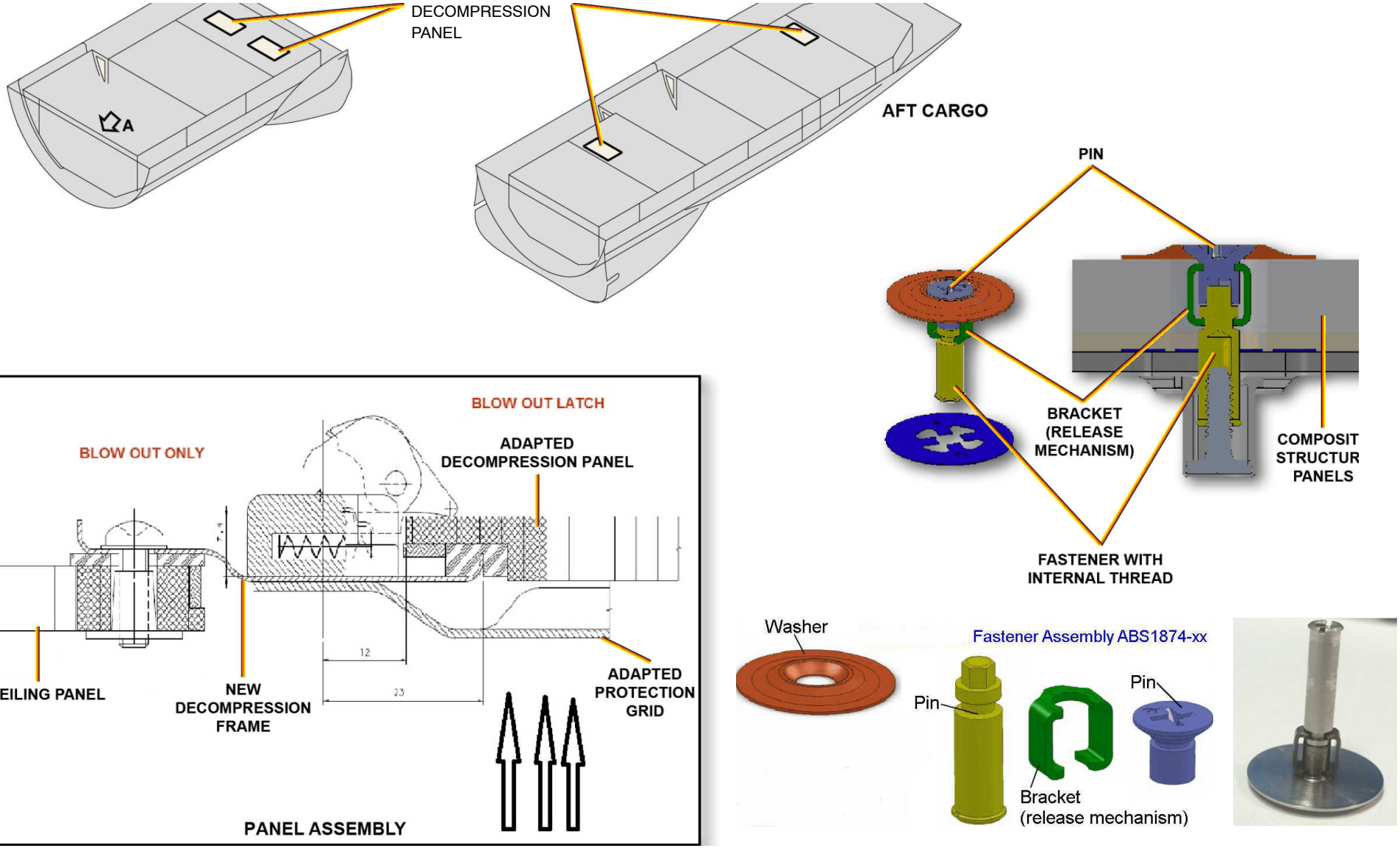


Figure 43 Modified Decompression Panels

DECOMPRESSION PANELS IN FORWARD CARGO HOLD

Aft cargo partition in forward cargo hold is installed with decompression panels (Blow In/Out) for the decompression surface to be adaptive with engine burst area of New Engine Options (NEO). To ensure equal design, these panels are also chosen for Current Engine Options (CEO).

NOTE: The new partition wall is fully interchangeable for A319, A320 and A321 CEO Aircrafts but it is not allowed to use old CEO Partition wall for all NEO aircrafts.

The aft cargo partition is adaptive for standard, cargo loading system and sliding carpet system options.

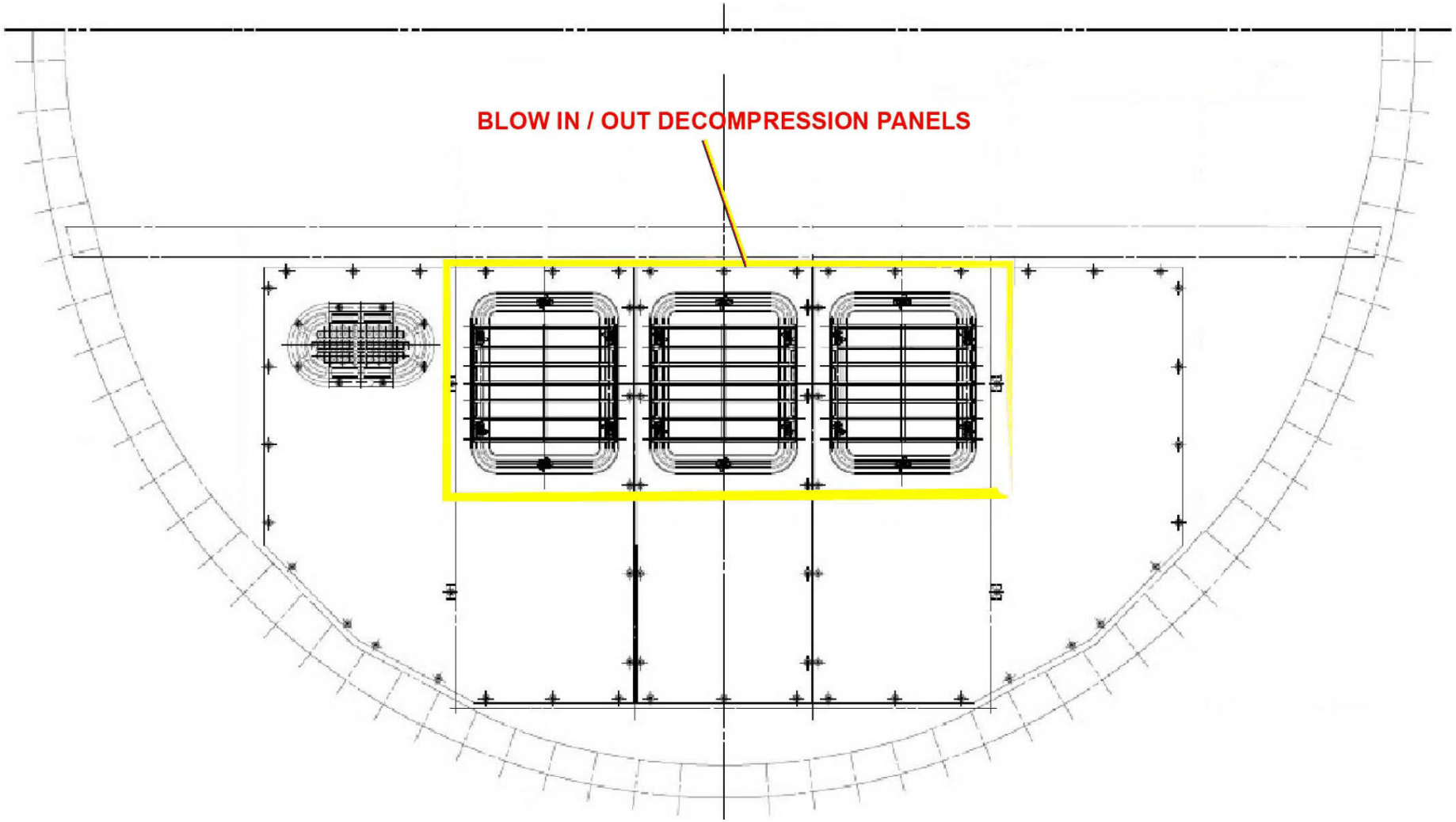


Figure 44 AFT Cargo Partion in FWD Cargo Hold

25–60 EMERGENCY

ESCAPE FACILITIES–COCKPIT DESCRIPTION

COCKPIT ESCAPE ROPE

General

In case of emergency evacuation, the occupants can evacuate the cockpit by opening the sliding windows and using the escape ropes located above the sliding windows.

Description

When the cabin is not pressurized, each sliding window can be opened using a continuous two–phase control. The control is located at the rear section of the windshield panel. The windshield panels are provided with an open–position locking system.

The dimensions of the exit provided by the open windows enable crew evacuation after a crash. A 5.5m long knotted rope is located in a stowage above the sliding windows on either side of the overhead panel. The cover plate of each stowage is held closed by VELCRO type adhesive tape which enables quick opening. These stowages are marked by red labels.

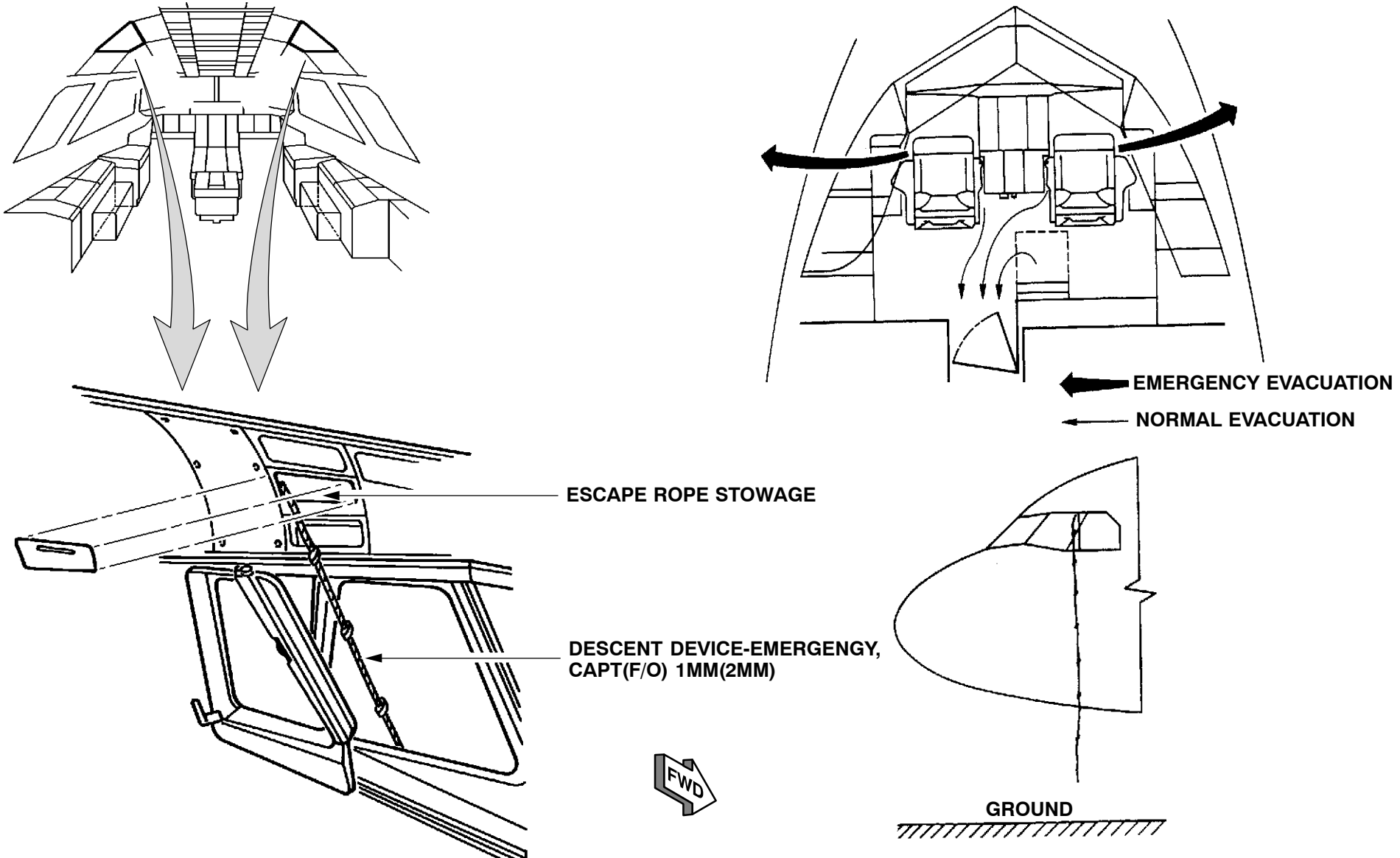


Figure 45 Cockpit–Emergency Escape Rope

ESCAPE FACILITIES CABIN INTRODUCTION

PASSENGER CABIN ESCAPE SLIDES

General

The cabin escape facilities are installed at all the aircraft exits. They permit quick evacuation for the passengers and the crew in an emergency.

System Description Door Escape Facilities

Single lane escape slides are installed at all cabin doors. Inflation is automatic if the door is opened with the Emergency Control Handle (ECH) in the ARMED mode.

Manual inflation is possible after the door is opened.

Offwing Escape Facilities

Dual lane offwing escape slides are installed above the wings in the left and right wing–to–fuselage fairings. Inflation is automatic if the emergency exit hatch is opened in the ARMED mode.

A manual inflation handle is installed at each emergency exit. You get access to the handle after the emergency exit is removed.

Warning Systems

Escape facility warning systems are installed at all cabin exits. A warning light operates immediatly if an exit is opened in the ARMED mode. An audible warning sound operates in the cockpit.

Directional Guidance Lights

Directional guidance lights are installed on all escape facilities. They are attached to the longitudinal supports and across the bottom of each inflatable assembly.

Reservoir Low Pressure Indication

Pressure sensors are installed on all cabin exit inflation reservoirs. The sensors are connected to the Cabin Intercommunication Data System (CIDS) to monitor the condition of the reservoirs.

If the pressure in a reservoir decreases, the CIDS function will be activated and indications given as follows:

- the CIDS caution light on the FWD Attendant Panel will come on.
- an illuminated system status message 'SLIDES PRESS LOW' on the Programming and Test Panel (PTP) will come on.

  The PTP can be programmed to display the reservoir affected.

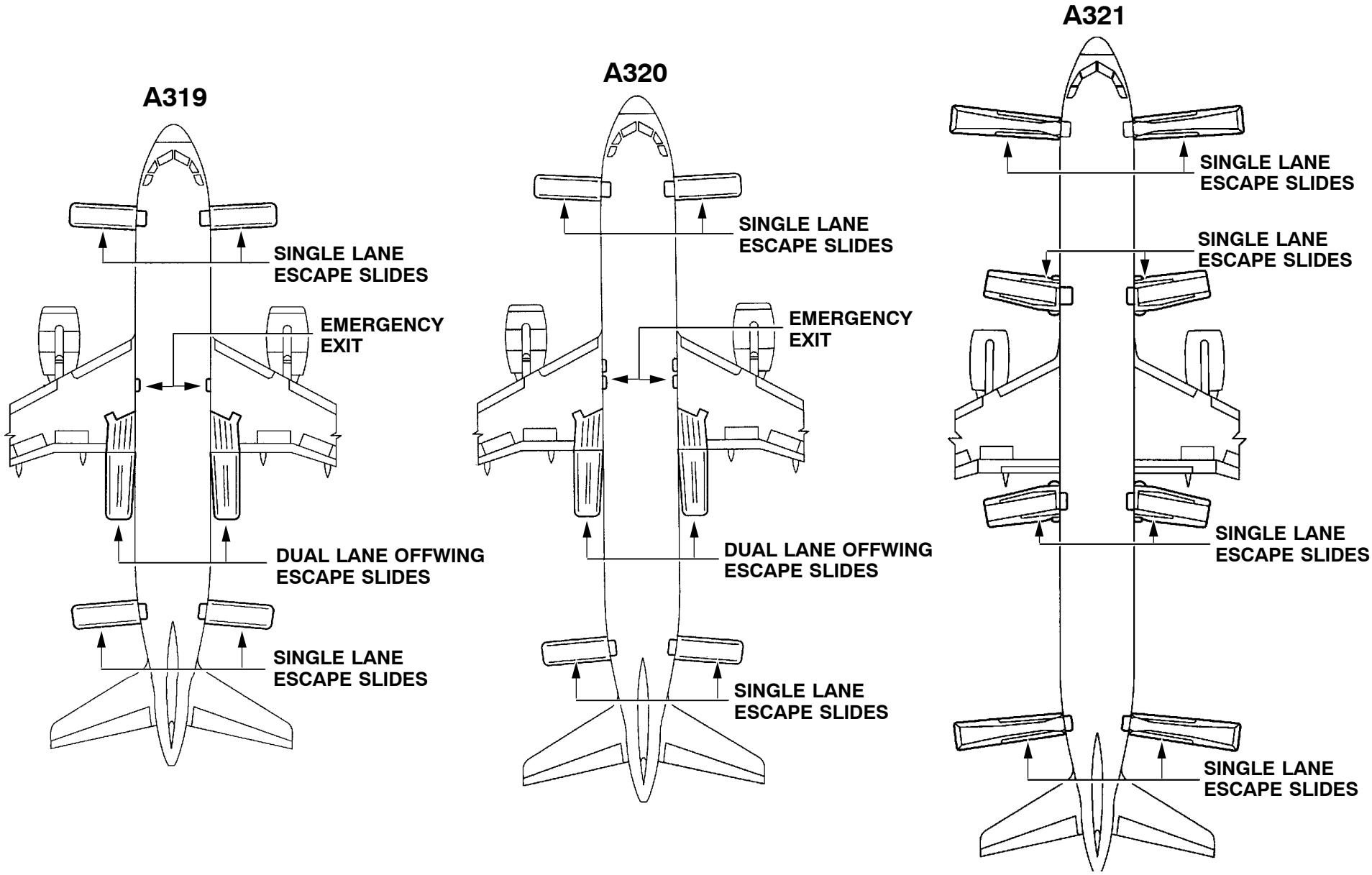


Figure 46 Cabin Escape Facilities–Location

FWD & AFT DOORS–ESCAPE SLIDES DESCRIPTION

GENERAL

Door Escape Facilities

- Each escape facility has:
- a pack assembly,
- an inflatable assembly,
- an inflation system,
- a decorative cover.

The inflatable assembly is made of urethane–coated nylon, which is flame resistant. The material is cut into panels and bonded together to make the pneumatic tube assemblies and slipway areas.

The inflation system has:

- an inflation reservoir (Nitrogen/Carbon Dioxide),
- a valve/regulator assembly,
- an aspirator.

The inflation reservoir is made of seamless aluminum. A gage shows the inflation reservoir pressure through a window in the decorative cover.

The valve/regulator assembly controls the gas flow from the inflation reservoir to the aspirator.

The pack assembly holds the inflatable assembly and the inflation system in position on the door.

The decorative cover protects the pack assembly when it is installed on the door. It has a color scheme that agrees with the cabin interior.

Door Escape Slide Operation

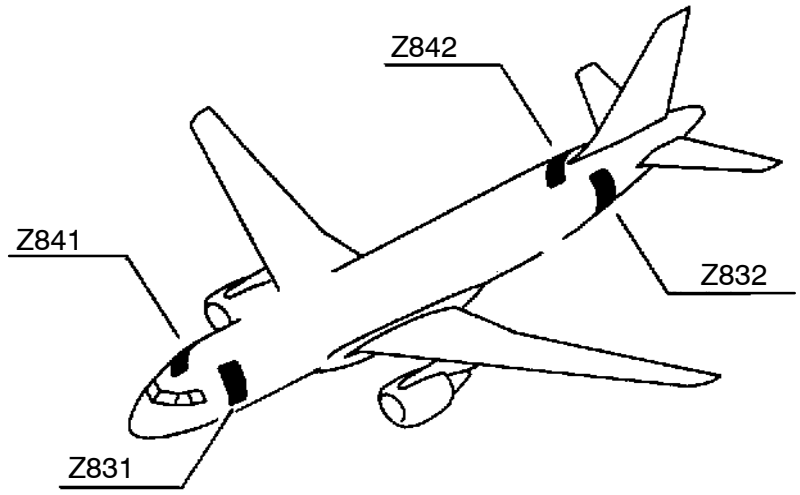
When the emergency control handle (ECH) is set to ARMED the girt bar connects the inflatable assembly to the floor attach fittings.

As the door opens the outboard movement of the door pulls the inflatable assembly from the packboard assembly. As the inflatable assembly is released its starts to fall and a lanyard pulls the reservoir valve (of the valve/regulator assembly) to open. The reservoir gas supply starts to flow through the flexible hose and the aspirator inlet assembly. The inflation procedure takes approximately 3.5s.

If the automatic inflation system does not operate, the reservoir valve (of the valve/regulator assembly) can be opened with the manual inflation handle.

The handle is red in color, identified with a label 'PULL' and installed on the girt assembly.

The directional guidance lights come on automatically during the inflation procedure. Electrical power for the lights is supplied from the cabin emergency–lighting system.



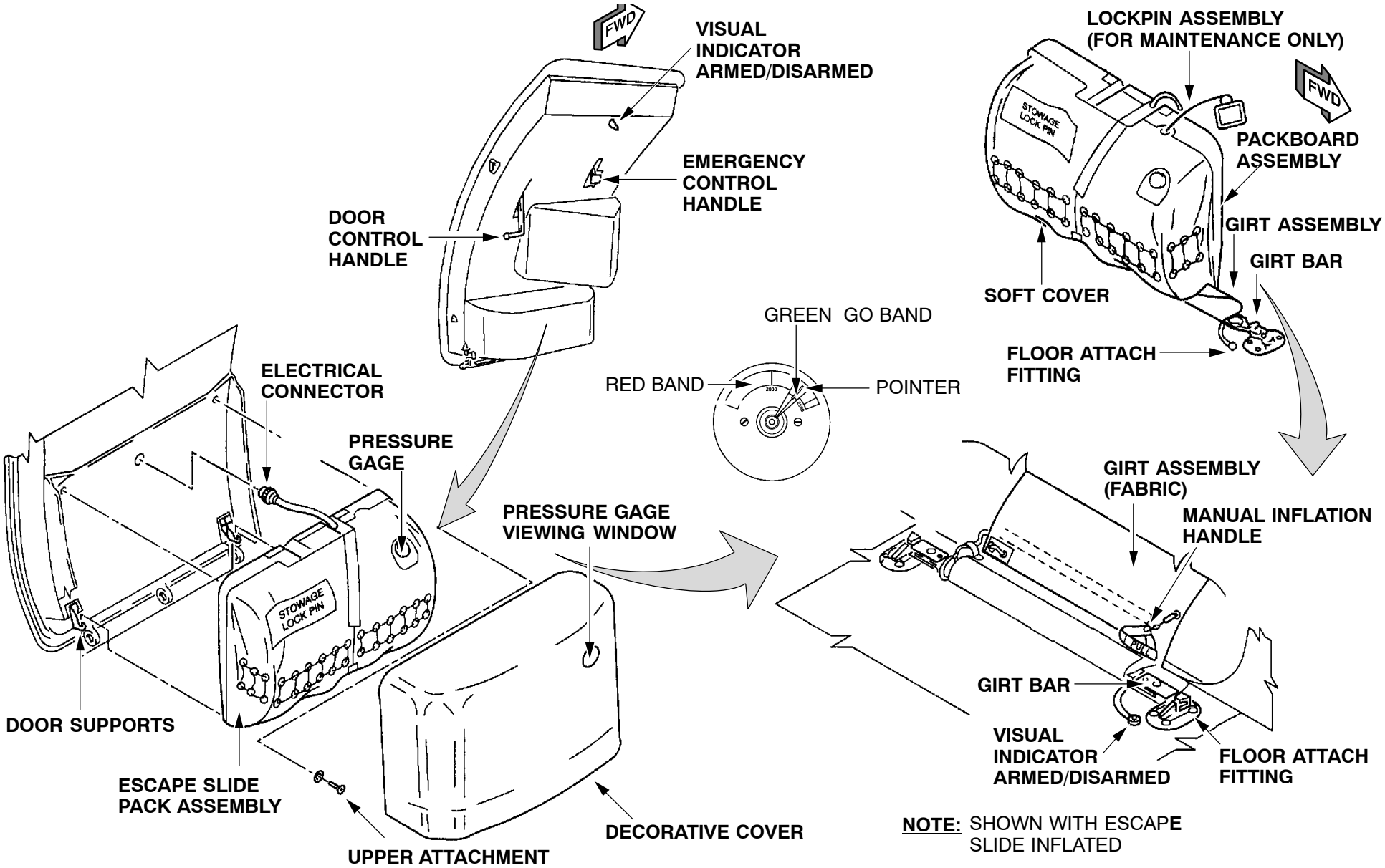


Figure 47 FWD & AFT Passenger/Crew Doors Escape Slides

ESCAPE SLIDE ASPIRATOR DESCRIPTION

General Description and Operation

The aspirator is made of fiber–reinforced plastic and has:

- an inlet assembly,
- a flexible hose assembly,
- a flapper valve assembly.

The inflation reservoir supplies gas to the inflatable assembly through the aspirator inlet assembly when the inflation system is activated.

The flexible hose assembly connects the inflation reservoir to the inlet assembly.

Flapper valves installed in the aspirator operate as a one–way check valve for inlet air. The fast expansion of gas in the aspirator when the inflation system is activated causes the flapper valves to open.

They open because of the induction effect from gas movement into the inflatable assembly and let ambient air into the aspirator. System inflation is faster when the air and gas mix and decreases the size (capacity) necessary for the reservoir.

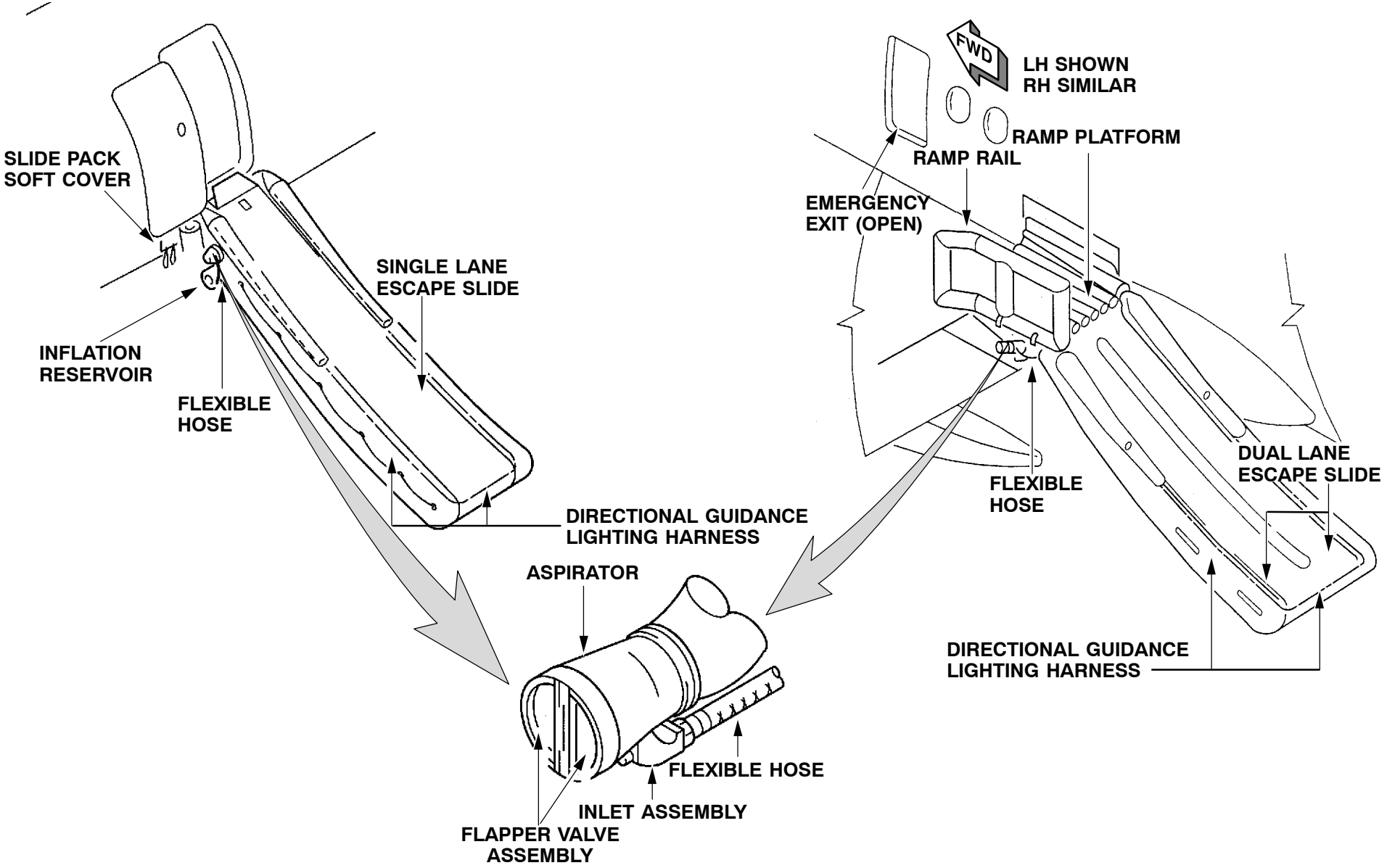


Figure 48 Inflated Door & Offwing Escape Slides

OFFWING ESCAPE SLIDE DESCRIPTION (A318–320)

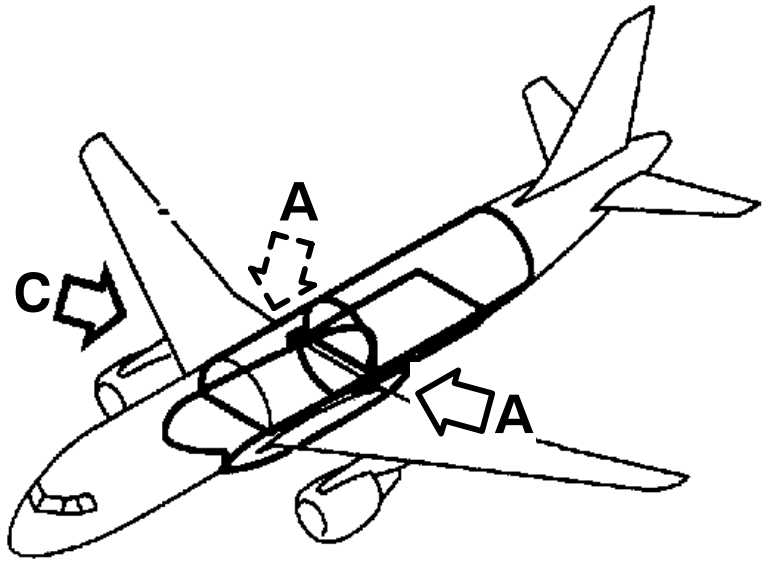
Offwing Escape Facilities description

The offwing escape slides are made of the the same materials as the door escape–slides. The slide pack is held in a stowage compartment and the stowage compartment attach–panel completes the wing–to–fuselage fairing assembly, left and right. Access to the offwing escape slides is through the emergency exits. Each assembly has a ramp platform and a dual–lane slide. The ramp platform has an inflatable ramp rail to guide the passengers and crew onto the slide.

The inflation reservoirs are installed in the AFT cargo compartment, behind the sidewall panels 151CW and 152CW.

Each inflation reservoir includes a pressure gage and valve/regulator assembly. The valve/regulator assembly is connected to the release mechanism of an emergency exit with release cables. The release mechanism is operated when one of the emergency exits is opened.

The inflation procedures for the offwing escape slides are similar to the door escape–slides.



Offwing Escape Slide Operation

The offwing escape slide inflates when you remove one of the emergency exit hatches. As the exit hatch is removed the hatch latch–pin engages a release lever installed in the exit fuselage frame.

Movement of the release lever causes a tension in the release cable which opens the reservoir valve (of the valve/regulator assembly). The initial gas supply releases the blow–out door installed in the stowage compartment attach–panel. It then inflates the offwing escape slide through the flexible hose and aspirator inlet assembly. The inflation procedure takes approximately 5s.

If the automatic inflation system does not operate the reservoir valve (of the valve/regulator assembly) can be opened with the manual inflation handle. The manual inflation handle is red in color and can be seen when the emergency exit hatch is removed.

The directional guidance lights come on automatically during the inflation procedure. Electrical power for the lights is supplied from the cabin emergency–lighting system.

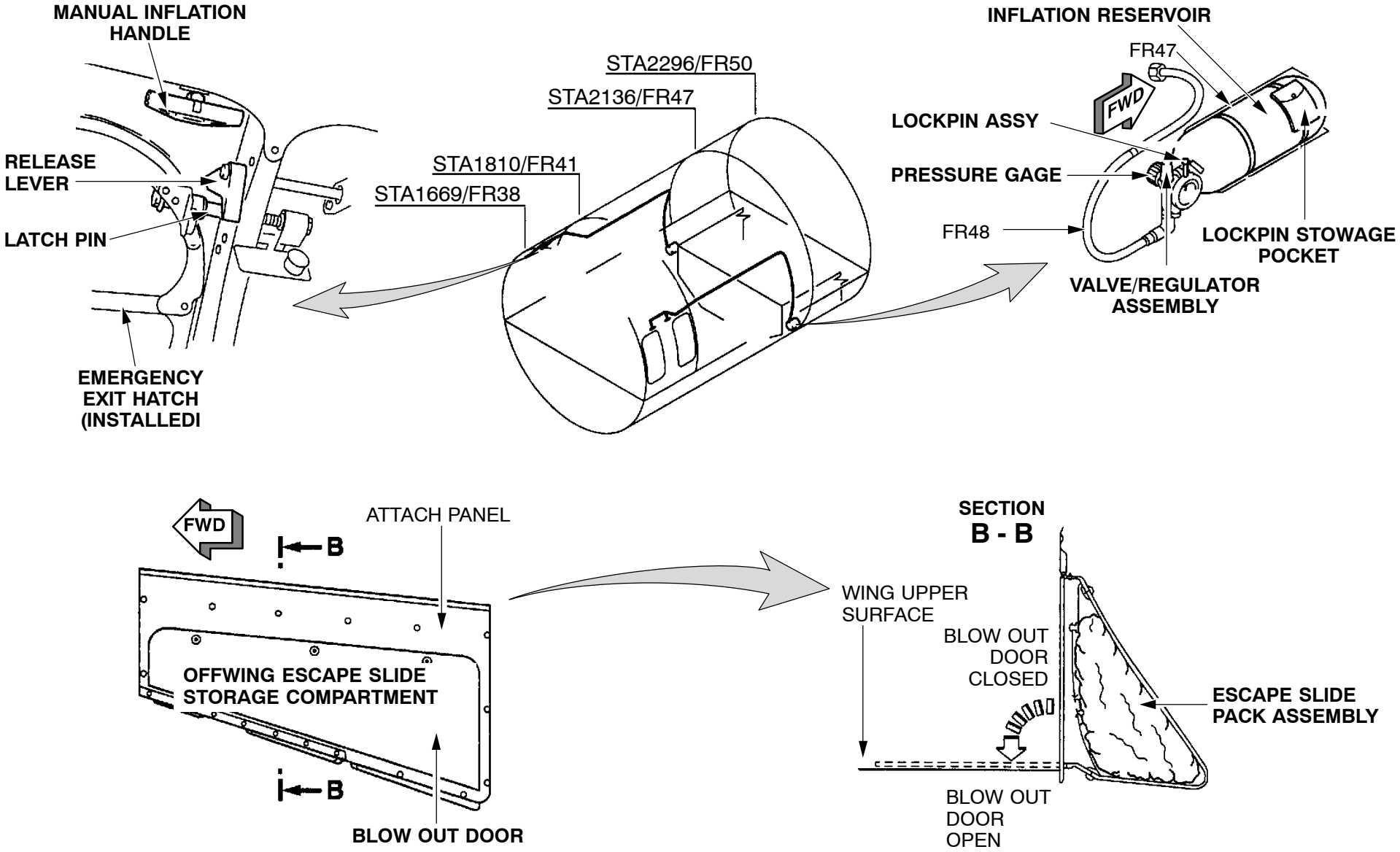


Figure 49 Offwing Escape Slide Assembly (A318–A320)

FWD & AFT EMER. DOORS–ESCAPE SLIDES (A321)

Emergency Door Escape Facilities

Each escape facility has at the FWD/AFT emergency doors:

- an inflatable assembly,
- an inflation system.

NOTE: The inflatable assembly and inflation system are divided. The inflation reservoir is installed above the door, and the inflatable assembly is installed below the door.

- an inflation reservoir (Nitrogen/Carbon Dioxide),
- a valve/regulator assembly,
- one aspirator (FWD/AFT passenger/crew doors),
- two aspirators (FWD/AFT emergency doors).

The inflation reservoir is made of seamless aluminum. At the FWD/AFT emergency doors, access to the inflation reservoir pressure gage is through the overhead stowage compartment.

At the FWD/AFT emergency doors, the pack assembly holds the inflatable assembly in position below the door. The pack assembly is installed in a stowage compartment in the fuselage.

Emergency Door Escape Slide Operation

At the FWD/AFT emergency doors, when the ECH is set to ARMED, the door release lever is positioned to engage the slide release mechanism. As the door opens, the outboard movement of the door strikes the release mechanism and starts inflation. The inflation procedure takes approximately 3s.

The handle is red in color, identified with a label 'PULL' and is installed at the FWD/AFT emergency doors, at the top right hand corner of the door. Location of the manual inflation handle is possible only after the door is open.

At the FWD/AFT emergency doors, a re–entry line is installed on the slide to assist crew members to re–enter the aircraft, if necessary, after evacuation. The re–entry line is attached to the sill tube, adjacent to the girt. It is held with velcro strips on one side of the slide assembly; FWD at the FWD emergency door, AFT at the AFT emergency door (when you look at the inflated assembly from the bottom).

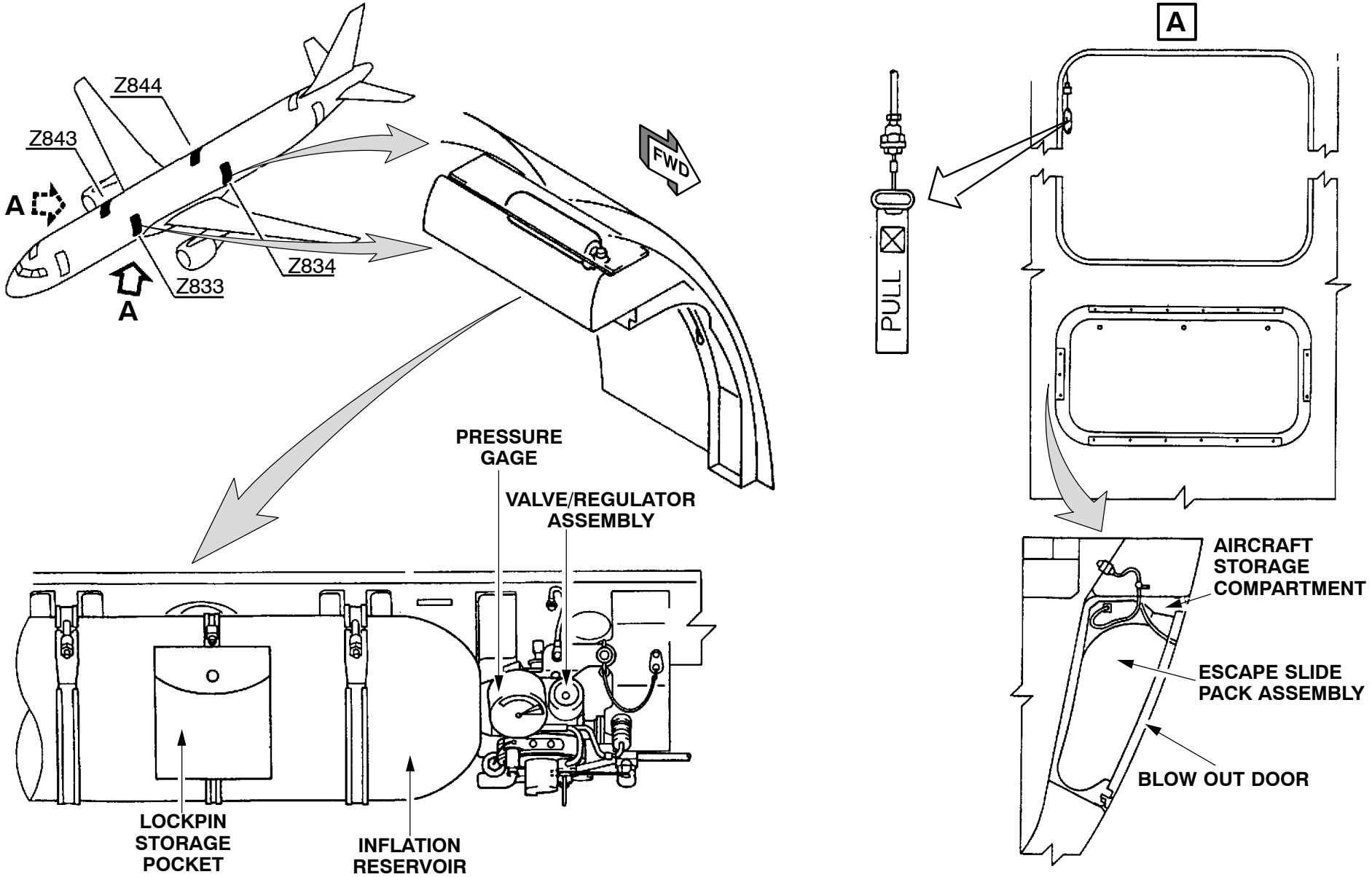


Figure 50 Emergency Door Escape Slides (A321)

25–62–44 ESCAPE SLIDES REMOVAL/INSTALLATION

ATTENTION: The following example is for information only and without obligation!

REMOVAL OF THE ESCAPE–SLIDE PACK–ASSEMBLY (EXAMPLE)

After reading the Job Set–up Information and doing the associated Job Set–up Subtask the following has to be done:

When the the ground service network has been energized make sure that the EMER EXIT LT switch In the cockpit, on the overhead panel, is set to the OFF position.

1. Make sure that the passenger/crew door (referred to as door) is safetied:

WARNING: BEFORE YOU START WORK ON THE ESCAPE–SLIDE, MAKE SURE THAT THE DOOR IS SAFETIED. THIS PREVENTS SUDDEN MOVEMENT OF THE DOOR AND ACCIDENTAL DEPLOYMENT OF THE ESCAPE–SLIDE, WHEN YOU OPEN THE DOOR. SUDDEN MOVEMENT OF THE DOOR AND ACCIDENTAL DEPLOYMENT CAN CAUSE INJURY AND/OR DAMAGE.

2. Make sure that the door–damper and emergency–operation cylinder is DISARMED (Ref. to applicable AMM TASK).
3. Make sure that the emergency control–handle (3) is set to the DISARMED/MANUAL position, with the SAFETY PIN–SLIDE ARMING (4) installed.
4. Make sure that the applicable door is closed

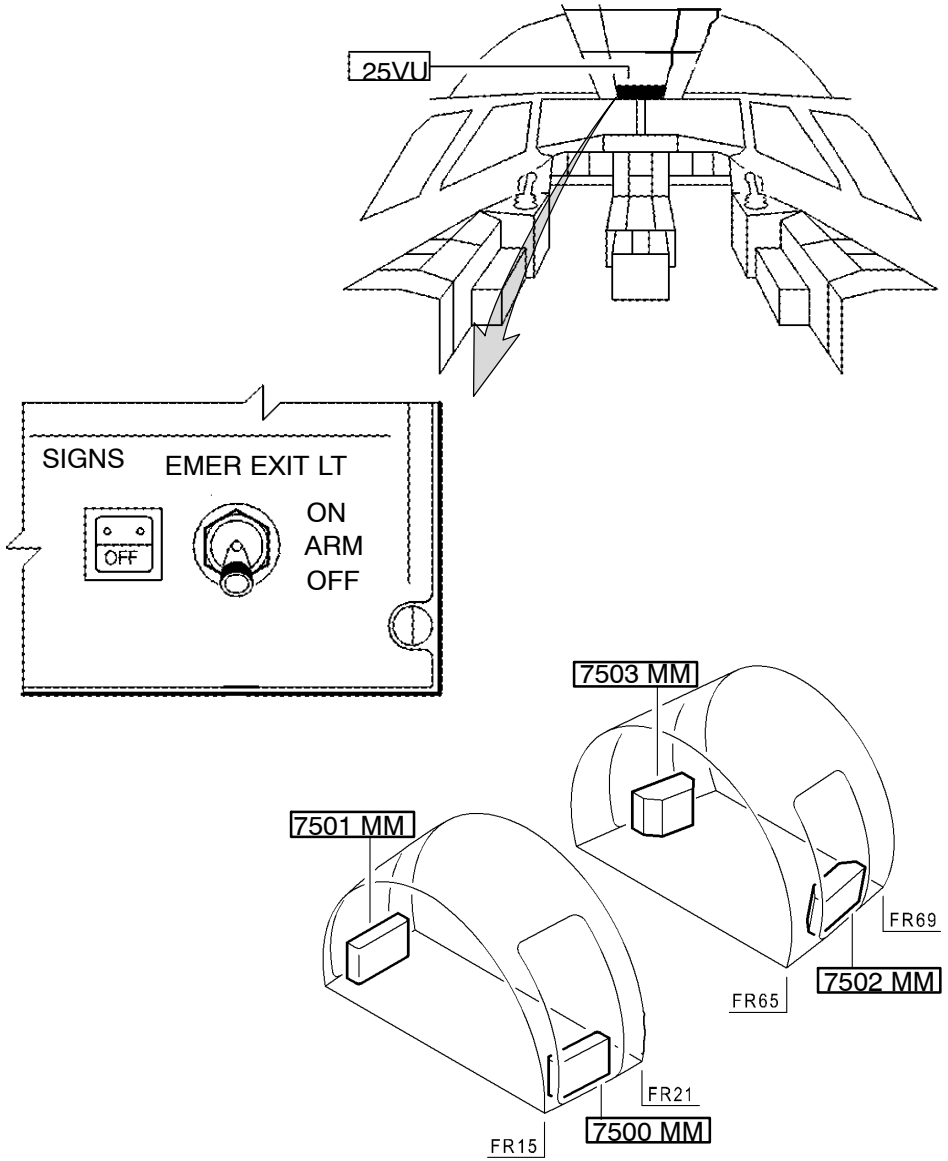
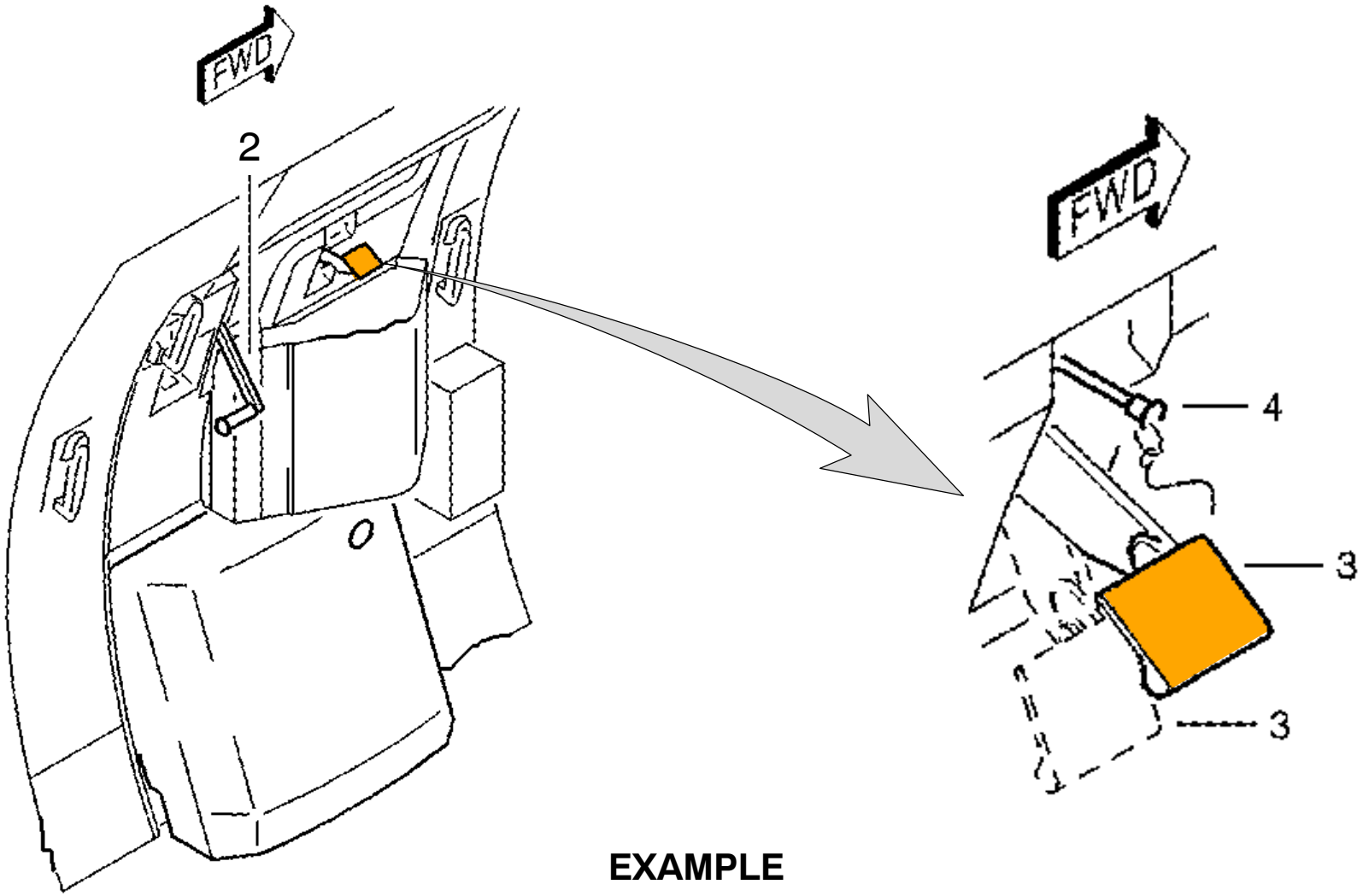


Figure 51 Figure Cockpit/Cabin Locations



EXAMPLE

ATTENTION: The following example is for information only and without obligation!

Figure 52 Escape Slide Pack Assembly

REMOVAL OF THE ESCAPE–SLIDE PACK–ASSEMBLY

ATTENTION: The following example is for information only and without obligation!

5. Remove the decorative–cover (20) from the pack–assembly (9):

NOTE: There are three different types of decorative–cover (20) attachment:
– Type 1, burr–strip (Velcro).
– Type 2, dual–lock re–closable fastener–strip.
– Type 3, spring loaded latches.
The three different types are not interchangeable. It is necessary to use more force, to pull apart dual–lock re–closable fastener–strip, than for burr–strip. You hear a continual click sound as the two halves are pulled apart.

A. Types 1 and 2:

Pull the lower edge of the decorative–cover (20) away from the pack–assembly (9), to disengage the spring clips. Carefully pull the top edge of the decorative–cover (20), from the attach–strips (16), and remove it.

B. Type 3:

Pull the lower edge of the decorative–cover (20) away from the pack–assembly (9), to disengage the spring clips. Disengage the spring loaded bolts (73) and remove the decorative–cover (20).

C. Keep the decorative–cover (20) with the aircraft.

6. Safety the inflation reservoir of the escape–slide:

WARNING: MAKE SURE THAT THE SAFETY/LOCK PIN IS CORRECTLY INSTALLED IN THE REGULATOR VALVE ASSEMBLY OF THE INFLATION RESERVOIR.
THIS PREVENTS ACCIDENTAL:
– DISCHARGE OF THE INFLATION RESERVOIR
– DEPLOYMENT OF THE ESCAPE–SLIDE
WHICH CAN CAUSE INJURY AND/OR DAMAGE.

A. Install the lock pin (18) in the regulator valve assembly (19).

NOTE: The lock pin (18) is kept in a pocket on the soft–cover (12) of the pack–assembly (9).

7. Get access to the girt bar (10) and the floor fittings (26):

CAUTION: DO NOT OPEN THE PASSENGER/CREW DOOR. IF YOU DO, YOU WILL START THE SEQUENCE OF STEPS THAT PULLS THE INFLATABLE ASSEMBLY OUT OF THE PACK–ASSEMBLY.

A. Remove the SAFETY PIN–SLIDE ARMING (4) and set the emergency control–handle (3) to the ARMED/AUTOMATIC position.

B. Carefully lift the door with the door control–handle (2) (Fig. 43).

C. Hold the door in this position, to prevent it to open fully.

D. Remove the girt bar (10):

CAUTION: DO NOT PULL THE GIRT ASSEMBLY. IF YOU DO, YOU WILL OPEN THE PACK ASSEMBLY.

- Push the spring pawls (29), to release the girt bar (10).
- Pull the girt bar inboard, from the floor fittings (26).
- Put the girt bar on the cabin floor, inboard of the floor fittings (26).

E. Carefully lower, and lock the door with the door control–handle (2).

F. Set the emergency control–handle (3) to the DISARMED/MANUAL position, and install the SAFETY PIN–SLIDE ARMING (4) (Fig.43).

8. Remove the pack–assembly (9) from the door:

A. Hold the pack–assembly (9).

B. Remove the bolts (24) and the washers (25), and keep them with the aircraft.

C. Let the pack–assembly (9) fall inboard on the supports (14), and continue to hold it.

D. Disconnect the electrical connectors for the associated pack-assy (15):

9. Remove the girt bar (10) from the girt assembly (11):

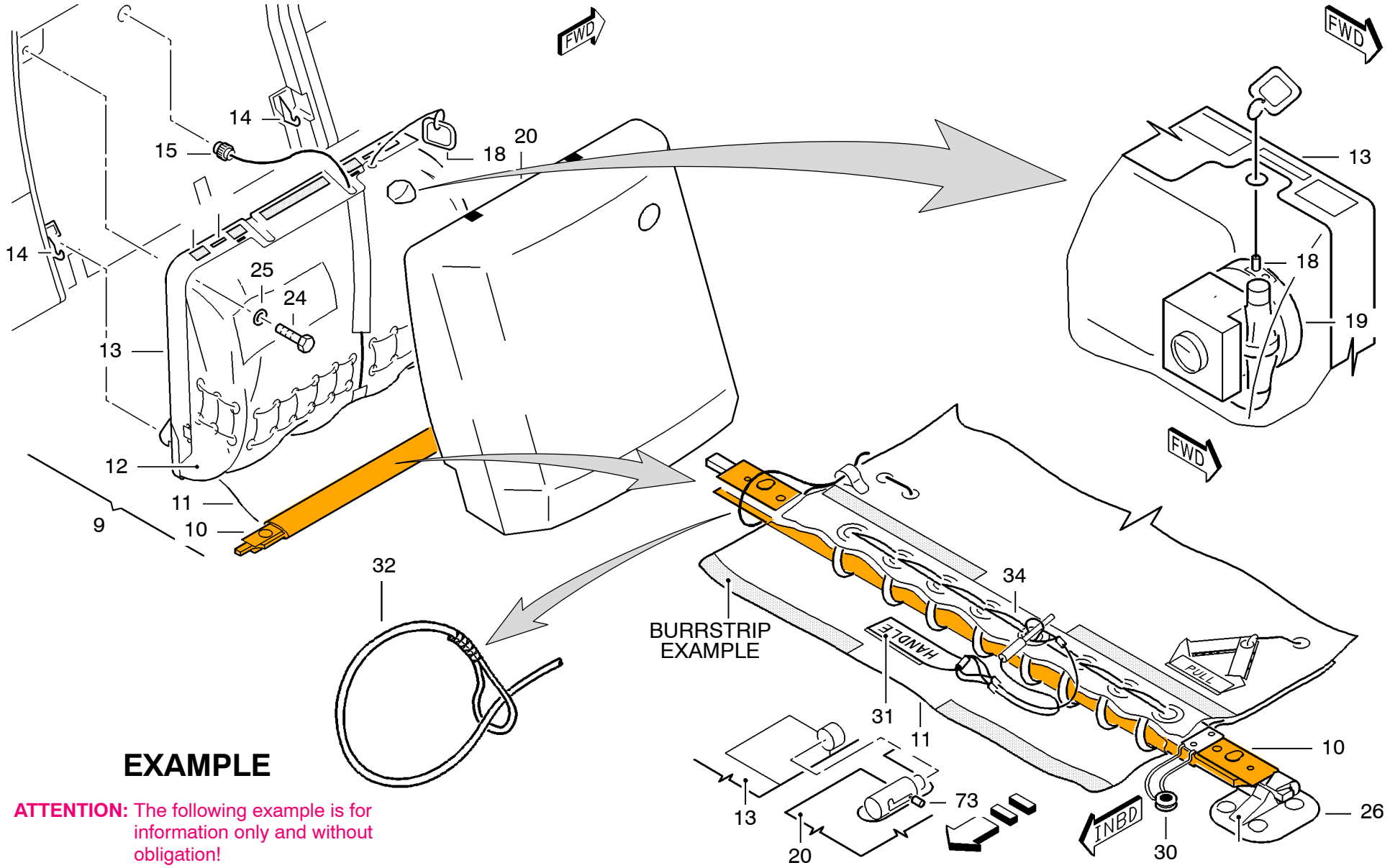
CAUTION: DO NOT PULL THE GIRT ASSEMBLY. IF YOU DO, YOU WILL OPEN THE PACK ASSEMBLY.

A. Remove the mooring line (32) from the girt bar (10).

B. Carefully pull the girt bar (10) out of the girt assembly (11).

C. If you cannot pull the girt bar (10) out of the girt assembly (11), do the respective steps according the AMM.

D. Remove the pack–assembly (9) from the aircraft.



EXAMPLE

ATTENTION: The following example is for information only and without obligation!

Figure 53 Removal of the Escape Slide Pack Assembly

INSTALLATION OF THE ESCAPE–SLIDE PACK–ASSEMBLY

ATTENTION: The following example is for information only and without obligation!

If you install the pack–assembly (9) at a passenger/crew door where the escape–slide has fired during an accident or an operational test, make sure that the diaphragm is replaced. (It is in the percussion mechanism of the door damper and emergency–operation cylinder)

1. Make sure that the door is safetied:

WARNING: BEFORE YOU START WORK ON THE ESCAPE–SLIDE, MAKE SURE THAT THE DOOR IS SAFETIED. THIS PREVENTS SUDDEN MOVEMENT OF THE DOOR AND ACCIDENTAL DEPLOYMENT OF THE ESCAPE–SLIDE, WHEN YOU OPEN THE DOOR. SUDDEN MOVEMENT OF THE DOOR AND ACCIDENTAL DEPLOYMENT CAN CAUSE INJURY AND/OR DAMAGE.

   A. Make sure that the door damper and emergency–operation cylinder is DISARMED (Ref to appropriate AMM Task).
   B. Make sure that the emergency control–handle (3) is in the DISARMED/ MANUAL position with the SAFETY PIN–SLIDE ARMING (4) installed.

2. Close the door from the passenger compartment.
3. Examine the pack assembly (9):

Do a check of the general condition of the slide pack–assembly and make sure that the inflation reservoir is safetied.

WARNING: MAKE SURE THAT THE SAFETY/LOCK PIN IS CORRECTLY INSTALLED IN THE REGULATOR VALVE ASSEMBLY OF THE INFLATION RESERVOIR.
THIS PREVENTS ACCIDENTAL:
– DISCHARGE OF THE INFLATION RESERVOIR
– DEPLOYMENT OF THE ESCAPE–SLIDE
WHICH CAN CAUSE INJURY AND/OR DAMAGE.

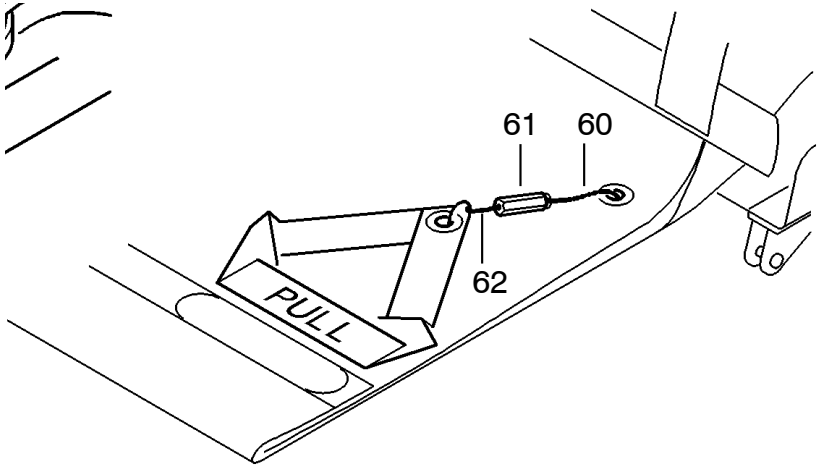
Make sure that the locking assembly (18) is installed in the regulator valve assembly (19).

NOTE: The lockpin assembly is kept in a stowage pocket on the soft–cover of the pack–assembly.

Make sure that the inflation cable (16) is installed correctly:

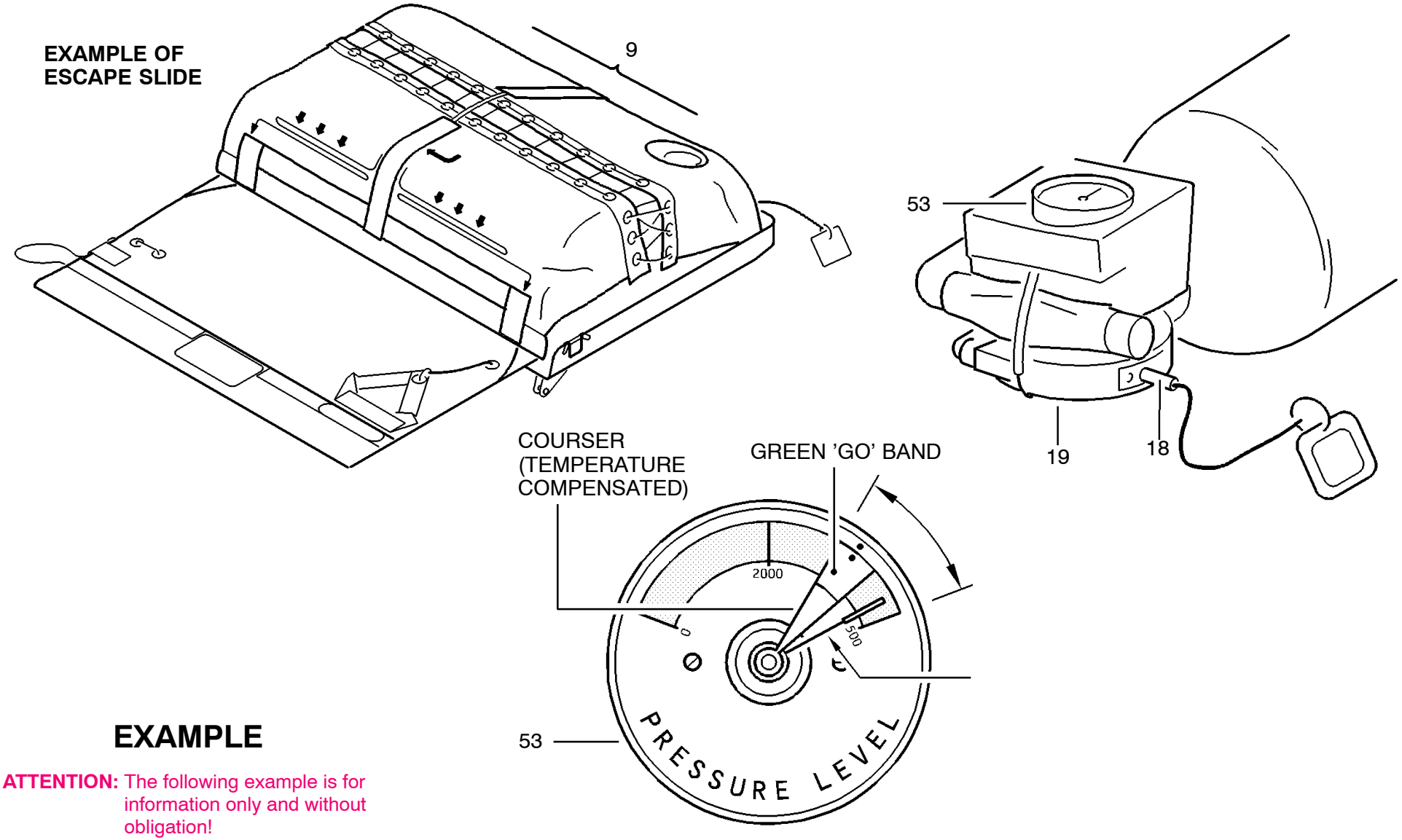
CAUTION: MAKE SURE THAT THE INFLATION CABLE IS NOT PULLED OUT FROM THE PACK–ASSEMBLY. IF IT IS PULLED OUT, DO NOT PUT IT BACK, BUT REPLACE THE PACK–ASSEMBLY. IF THE INFLATION CABLE IS PUT BACK INCORRECTLY, IT CAN PREVENT THE INFLATION OF THE ESCAPE–SLIDE RAFT.

Make sure that the inflation cable is not pulled out of the pocket in the pack–assembly. Make sure that the parts retained from the removed component are clean and in the correct condition. Do an inspection of the component interface and/or the adjacent area. Make sure that the connector (61) between the pull–handle cable (62) and the inflation cable is connected.



Make sure that the connector between the cable and loop assembly and the cover release–cable is disconnected. Make sure that the related pressure gage (53) shows the correct pressure.

NOTE: The gage is temperature sensitive. Temperature changes (from cool storage into a warm cabin) can temporarily effect gage indication. The cursor is temperature compensated and moves independently of the gage needle. It reacts to temperature changes faster than the gas expansion the inflation reservoir.



EXAMPLE

ATTENTION: The following example is for information only and without obligation!

Figure 54 INSTALLATION OF THE ESCAPE–SLIDE PACK–ASSEMBLY

4. Install the electrical harness on the correct side of the pack–assembly:

WARNING: MAKE SURE THAT THE ELECTRIC HARNESS IS CORRECTLY INSTALLED ON THE PACK–ASSEMBLY. IF THE ELECTRICAL HARNESS IS NOT CORRECTLY INSTALLED, IT CAN PREVENT THE CORRECT INFLATION AND/OR DEPLOYMENT OF THE ESCAPE–SLIDE/SLIDE RAFT.

NOTE: The pack–assembly can be installed on a left or a right door.

5. Operational Test Procedure before Installation

Do an operational test of the girt bar (10) before it is installed in the girt–assembly and do a visual inspection of the pin (69). Make sure that there is no corrosion.

6. Installation of the Escape–Slide Pack–Assembly

WARNING: MAKE SURE THAT THERE IS A GOOD FLOW OF AIR THROUGH THE WORK AREA WHEN YOU USE SPECIAL MATERIALS. IF YOU GET ONE OF THESE MATERIALS ON YOUR SKIN, IN YOUR MOUTH OR IN YOUR EYES:
– FLUSH IT AWAY WITH A FLOW OF CLEAN WATER FOR BETWEEN 10 AND 15 MINUTES.
– GET IMMEDIATE MEDICAL AID IF IRRITATION OCCURS.
DO NOT BREATHE THE FUMES FROM THE MATERIAL.
DO NOT SMOKE WHEN YOU USE THE MATERIAL.
DO NOT USE THE MATERIAL NEAR A FLAME, SPARKS OR SOURCES OF HEAT.
THESE MATERIALS ARE DANGEROUS: THEY ARE POISONOUS, FLAMMABLE AND SKIN IRRITANTS.

A. Install the girt bar (10) in the girt assembly (11):

CAUTION: DO NOT PULL THE GIRT ASSEMBLY. IF YOU DO, YOU WILL OPEN THE PACK ASSEMBLY.

B. Carefully push the girt bar (10) through the girt assembly (11).

C. Make sure that the visual indicator (30) points inboard and is on the side of the girt assembly (11) in flight direction.

D. Put the loop of the mooring line (32) on the end of the girt bar (10).

E. Make sure that the loop is on the left side of the girt bar (10) when you look outboard.

F. Connect the connector between the cable and loop assembly and the cover release–cable:

7. Install the pack–assembly (9) on the door:

A. Lift the pack–assembly (9) on the supports (14) and hold the pack–assembly (9) at an angle inboard on the supports (14).

B. Connect the electrical connector:

C. Make sure that there is no play between the packboard (13) and the door.

8. Install the girt bar (10) in the floor fittings (26):

CAUTION: DO NOT OPEN THE PASSENGER/CREW DOOR. IF YOU DO, YOU WILL START THE SEQUENCE OF STEPS THAT PULLS THE INFLATABLE ASSEMBLY OUT OF THE PACK–ASSEMBLY.

A. Remove the SAFETY PIN–SLIDE ARMING (4) and set the emergency control–handle (3) to the ARMED position.

B. Carefully lift the door with the door control–handle (2) and hold the door to prevent it to open fully.

C. Install the girt bar (10):

CAUTION: DO NOT PULL THE GIRT ASSEMBLY. IF YOU DO, YOU WILL OPEN THE PACK ASSEMBLY.

D. Carefully lower and lock the door with the door control–handle (2) and make sure that the control–shaft levers (28) have engaged correctly in the holes in the girt bar (10).

E. Set the emergency control–handle (3) to the DISARMED position.

F. Carefully lift the door with the door control–handle (2) and hold the door to prevent it to open fully.

G. Make sure that the girt bar (10) has engaged correctly with the telescopic forks (27) of the door structure.

H. Carefully lower and lock the door with the door control–handle (2) and set the emergency control–handle (3) to the ARMED position.

I. Carefully lift the door with the door control–handle (2) and hold the door to prevent it to open fully.

J. Make sure that the girt bar (10) has engaged correctly in the floor fittings (26).

K. Carefully lower and lock the door with the door control–handle (2) and make sure that the girt (10) can move freely:

L. Move the emergency control–handle (3) from the ARMED to the DISARMED position four times. Set the emergency control–handle (3) to the DISARMED position and install the SAFETY PIN–SLIDE ARMING (4).

M. Remove the lockpin assembly (18) from the valve/regulator assembly (19). Put the lockpin assembly (18) in the stowage pocket on the soft–cover (12) of the pack–assembly (9).

N. Install the decorative cover (20) on the pack–assembly (9):

9. Do a visual inspection of the visual indicator (30) and its related ARMED indication:

A. Remove the SAFETY PIN–SLIDE ARMING (4) and set the emergency control–handle (3) to the ARMED position.

B. Make sure that the self–adhesive placards are in a good condition, if installed.

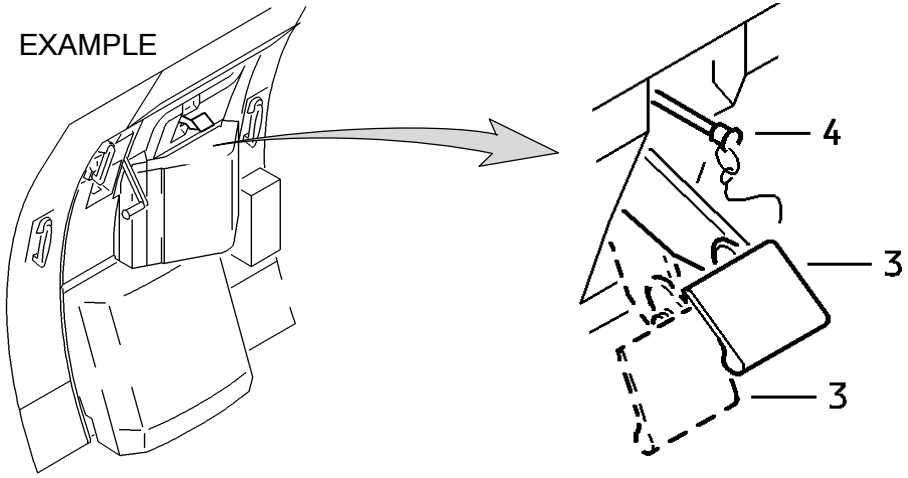
C. It is not necessary to make adjustments on aircraft where an ARMED placard (68) is installed on the cabin floor.

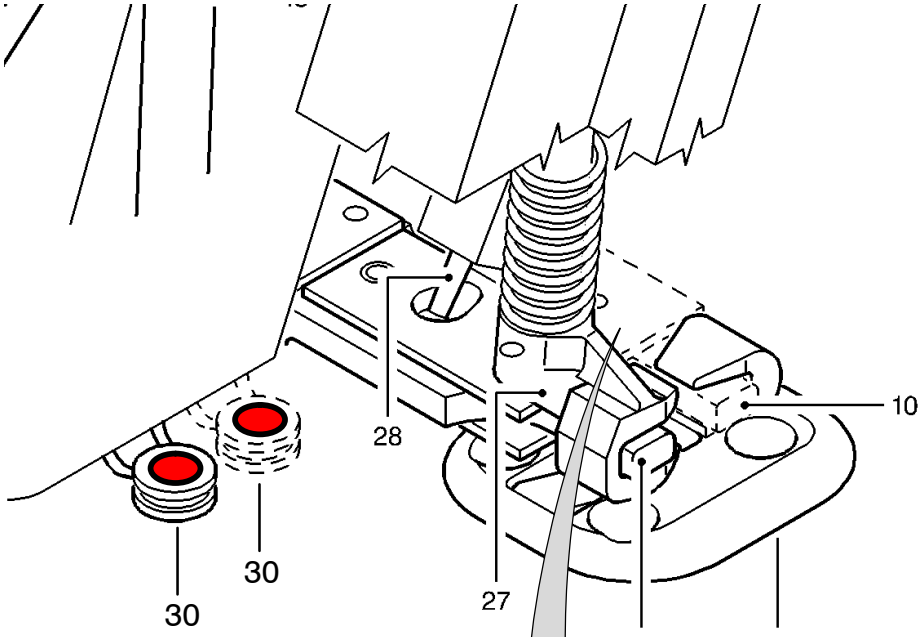
D. Set the emergency control–handle (3) to the DISARMED position and install the SAFETY PIN–SLIDE ARMING (4).

10. Operational Test of the Escape–Facilities

Do the appropriate test, as discribed in the AMM and do the close-up.

EXAMPLE

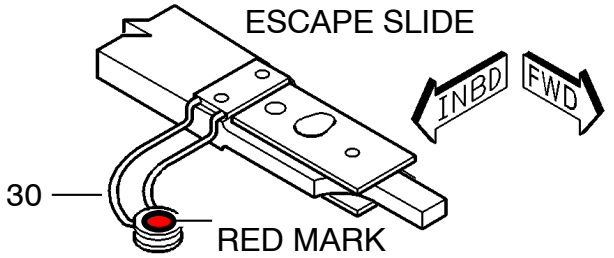




EXAMPLE

ATTENTION: The following example is for information only and without obligation!

EXAMPLE OF ESCAPE SLIDE



FIRST AID EQUIPMENT DESCRIPTION

General

Items of first aid equipment, for use during medical emergencies, are kept at different locations in the aircraft. These items include first aid kits, support pillows, blankets, thermal blankets and sickness bags. A safety instruction card, for the aid of passengers, is kept in a pocket attached to the rear of each passenger seat.

NOTE: For details of the passenger oxygen supplies and the portable oxygen equipment.

Description

First aid kits are kept at various locations in the aircraft. The kits contain medication to give help to passengers or crew members who become ill, or suffer light injury. The contents of each kit is kept in a hermetically–sealed waterproof container. An 'in service' life, usually of five years, is given to each first aid kit.

The 'life expired' date is printed on the front of the waterproof container.

NOTE: To avoid damage to the kit equipment the kits should be removed from the parked aircraft if the temperature in the cabin is below 1 deg. C (33.80 deg. F) or above 40 deg. C (104.00 deg. F).

Pillows, blankets and thermal blankets are kept in the aircraft to give to passengers who feel cold during low cabin temperatures. A safety instruction card is put in the rear pocket of each passenger seat.

The card shows the passenger, with the aid of illustrations:

- take–off and landing procedures
- emergency exit and escape slide locations
- emergency landing procedures
- use of oxygen masks
- floor level escape route markings
- life vest installation procedures

An air–sickness bag is also kept in the seat pocket.

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MISCELLANEOUS EMER. EQUIPMENT DESCRIPTION

GENERAL

Miscellaneous emergency equipment is installed in the aircraft for use if an on–board emergency occurs. The equipment is put in locations with easy access and is kept fully prepared for immediate use.

SYSTEM DESCRIPTION

Flash Lights

Hand held flash lights are installed as a movable light source. They are used if bad light conditions occur during an on–board emergency. The batteries of the flash lights can be easily replaced.

Crash Axe

The crash axe is used to cut through light structures, panels and windows to get access or exit in an emergency. The insulated handle is resistant to high voltages.

Smoke Masks

Smoke masks are installed at different aircraft locations. They give the flight and cabin crews the protection necessary to continue with their duties during smoke and noxious gas conditions.

For details of the smoke masks, together with the portable oxygen equipment see the applicable part in ATA 26.

Protective Breathing Equipment (PBE)

The primary use of the PBE is to provide an independent supply of breathable air for the flight and cabin crews in an emergency. The PBE allows the flight and cabin crew members to move freely to extinguish fires and stop smoke and noxious gas emissions.

Protective Gloves

Protective gloves are made of materials that are resistant to heat. They are supplied for use in fire emergencies and to handle overheated equipment.

For details of portable fire extinguishers see the applicable part in ATA 26.

Crowbar

In an emergency the crowbar can be used to open doors that do not move freely, or remove panels for access or exit.

Doctors Kit

A doctors medical kit is kept in the aircraft for the use of a doctor, if on board. The kit contains medicines and equipment to help passengers or crew members who are badly injured or taken dangerously ill.

For details of first aid equipment see the applicable part in ATA 25.

First Aid Kit

First aid kits are kept in easily accessible locations in the aircraft. The kits contain medication and equipments to give help to passengers and crew members who become ill, or suffer light injury.

For details of the first aid equipment see the applicable part in ATA 25.

Megaphone

The megaphone is a horn–shaped instrument, used to project voice communications in emergency situations. The unit is basically a hand–operated, transistorized amplifier, powered by flash light batteries. The batteries should be replaced at regular intervals.

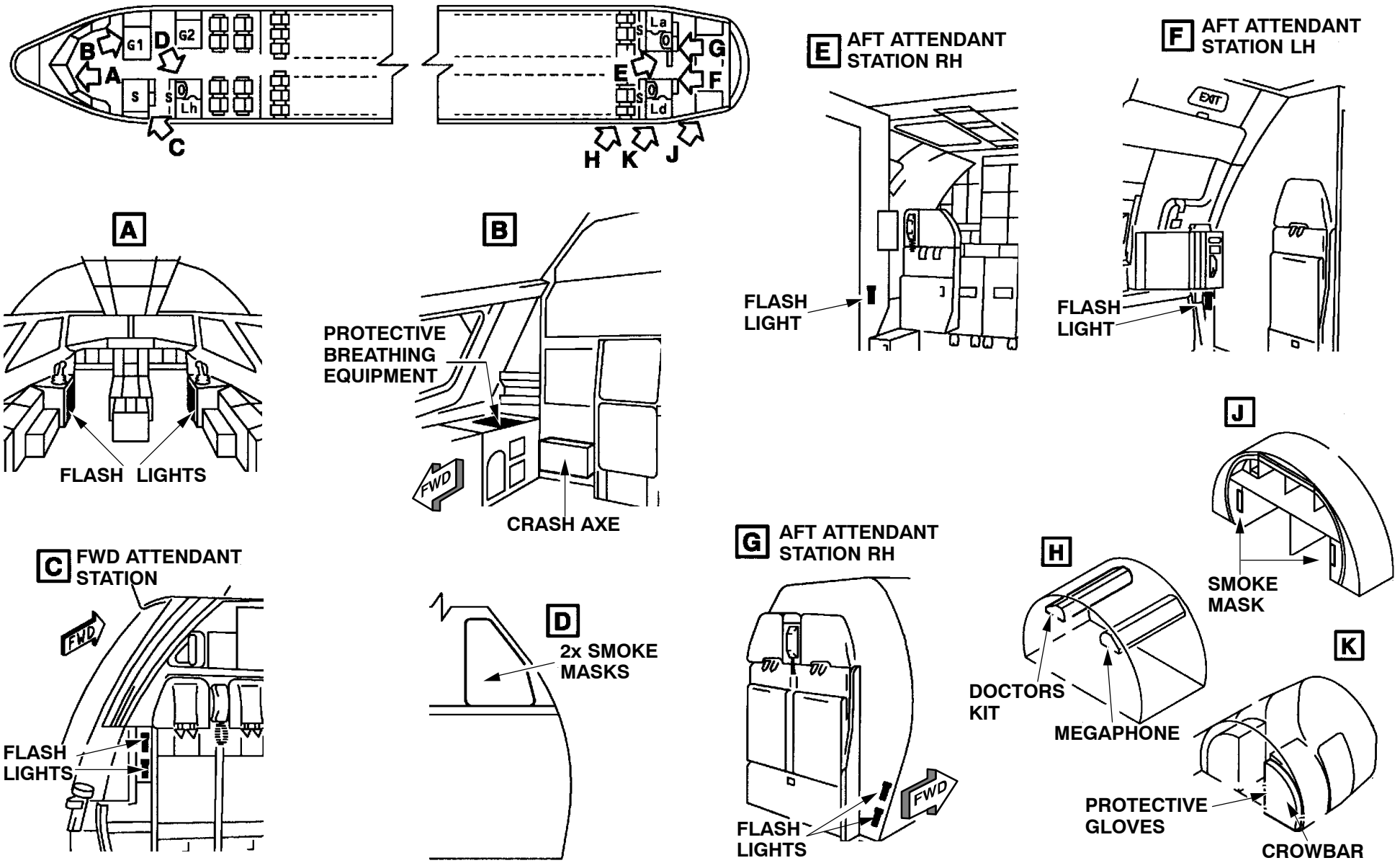


Figure 55 Miscellaneous Emerg. Equipment (Typical) Location

LIFE VESTS AND LIFE LINES DESCRIPTION

GENERAL

Floatation and survival equipment for the passengers and crew is kept in easily accessible locations in the cockpit and in the cabin.

NOTE: A small quantity of nonfunctional life vests are kept in the aircraft for cabin crew to give visual instructions to passengers. To prevent errors, the nonfunctional life vests are identified with DEMO in large

Life Vest Description

Each life vest has a buoyancy chamber with a waistbelt harness. The harness has attach clips and adjustable buckles.

- Life vest components include:
- a CO2 gas inflation system,
- an oral inflation tube,
- a lamp for survivor location in poor visibility or night conditions,
- a water activated cell (battery) to bring the lamp on,
- a whistle to attract attention.

The life vests are kept below the passenger seats, in the cabin attendant's seats and on the rear of each cockpit seat.

Life Line Description

Life lines assist passengers evacuating the aircraft to remain on the wings after ditching. The life lines are installed in the hatracks adjacent the emergency exits (FR 38) left and right.

Life line installation points are yellow in color for easy identification and located as follows:

- inside each emergency exit hatch recess (top forward corner of the FWD exit; top rear corner of the AFT exit) and accessible only after the exit hatch is removed,
- on the upper surface of each wing, approximately above the outer limit of the engine nacelle.

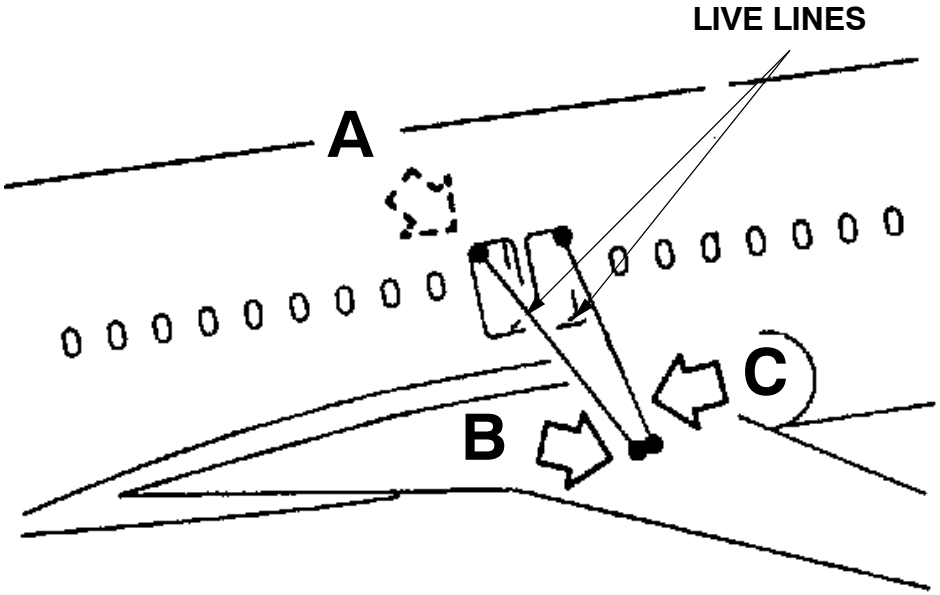
OPERATION/CONTROL AND INDICATION

Life Vests

The 'Instructions for Use' are clearly printed on each life vest. When you pull the 'JERK TO INFLATE' handle, you release the gas in the CO2 cylinder and the bouyancy chamber inflates. If the primary system (CO2 gas cylinder) fails, you can inflate the bouyancy chamber with the oral inflation tube (or if additional pressure in the life vest becomes necessary).

Life Lines

If an emergency occurs and the aircraft ditches, you must remove the exit hatches and install the life lines. Snap hooks connect the lines to the installation points, they are located at each end of the life lines. You can tighten the life lines after installation when you pull on the tabs at the two sliding buckles.



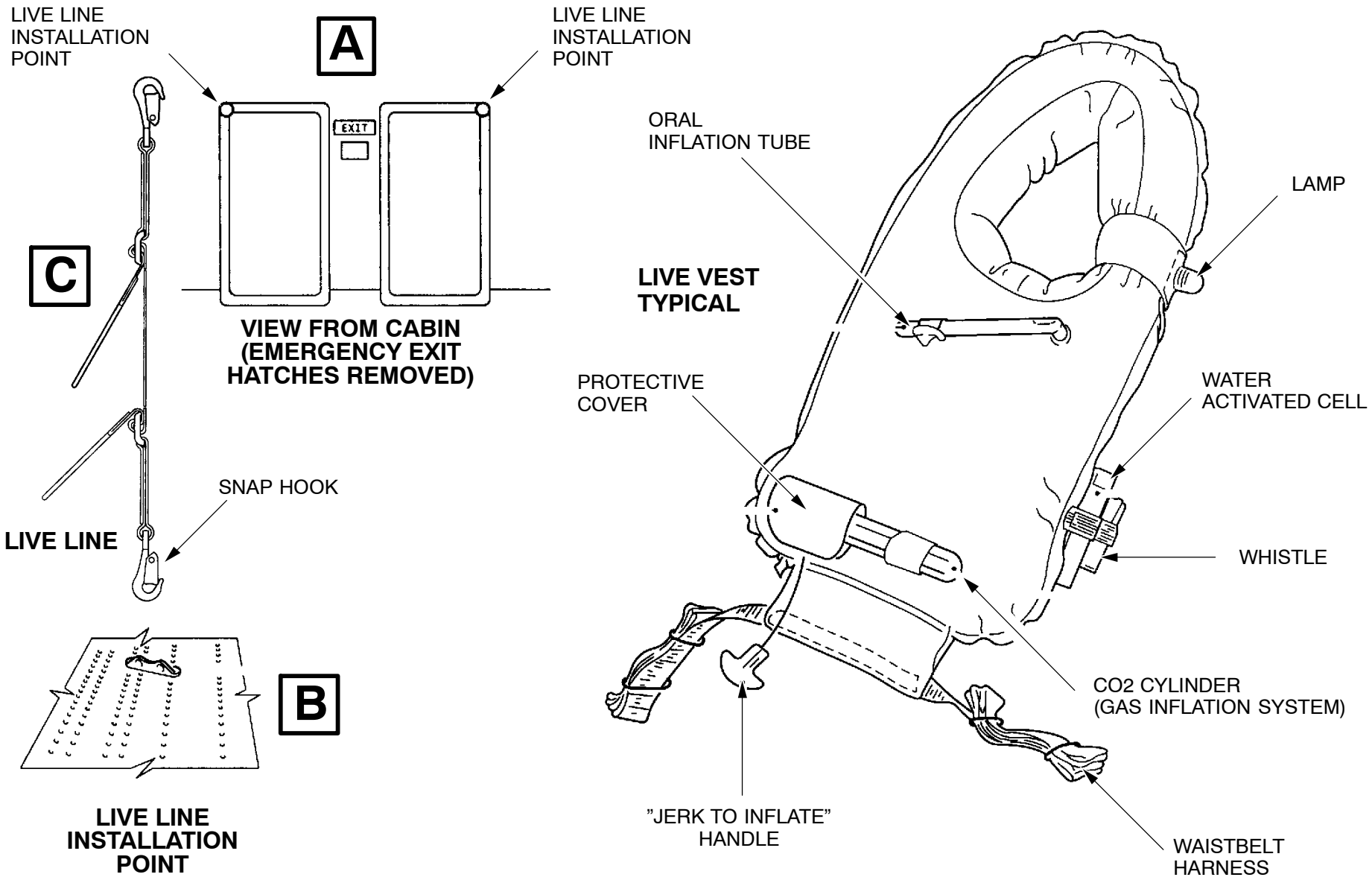


Figure 56 Live Vest & Live Lines – Location

25–80 AIRCRAFT INSULATION

INSULATION DESCRIPTION

GENERAL

The thermal insulation does the following:

- minimizes the loss of heat from the fuselage,
- stops the formation of condensation,
- reduces the noise level in the fuselage.

The thermal insulation is a material and not a component. This material is distributed through the pressurized fuselage, and is of different thickness, and installed in different ways.

SYSTEM DESCRIPTION

Fuselage Primary Insulation

The fuselage is insulated with glasswool blankets that have a density of 0.42 lb/ft3 (6.73 kg/m3), except for the cockpit area. The cockpit area is insulated with glasswool blankets that have a density of 0.6 lb/ft3 (9.63 kg/m3). In both places the insulation blanket is covered with a foil material with seams that are either sewn or thermal impact bonded. The foil material at one side of each blanket has ventilation holes. These face inboard of the aircraft skin to stop condensation entering the blankets, except under the aircraft's floor. Under the aircraft floor the holes in the foil material face outboard (aft of frame 24), to stop condensation entering.

The passenger/emergency doors and door frames are insulated with glasswool cushions and/or polyethylene foam plates.

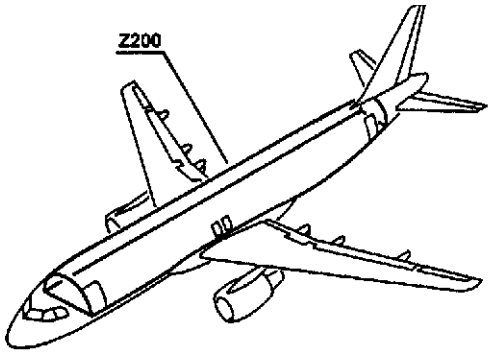
Cabin Secondary Insulation

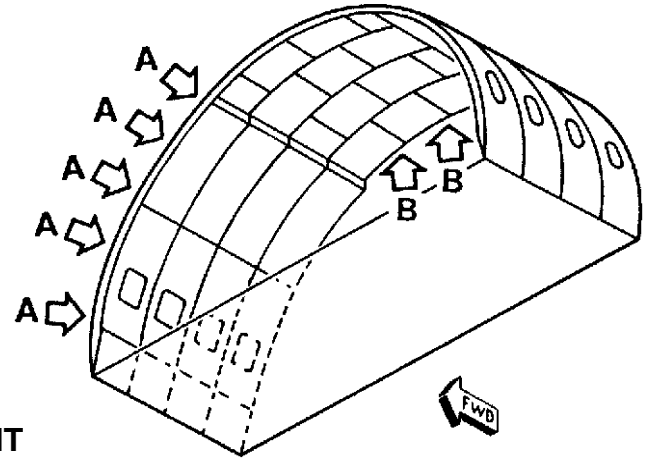
Secondary insulation is fitted to, or integrated with, the following interior panels:

- the rear side of the hatracks (when necessary for acoustic reasons),
- the rear side of the upper sidewall panel,
- the rear side of the lower sidewall panels (dado panels).

This insulation has a minimum thickness of 6 mm. Insulation under the floor of the forward and aft cargo compartment reduce heat–loss of the cargo heating system.

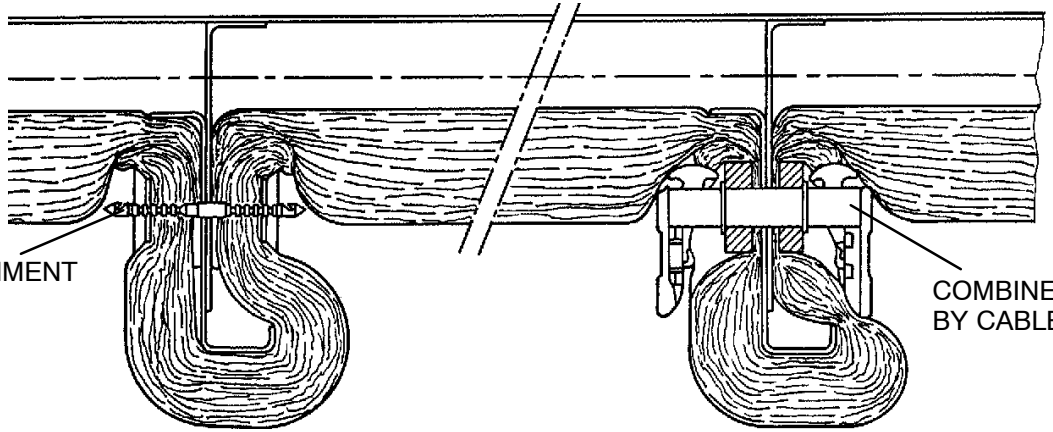
This helps to meet specified cargo compartment temperatures, and reduces the quantity of condensation. The insulation used is foam panels with a thickness of 30 mm. These are bonded with adhesive to the underside of the floor of each cargo compartment.

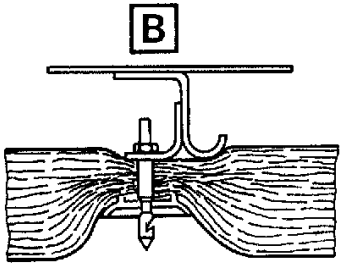




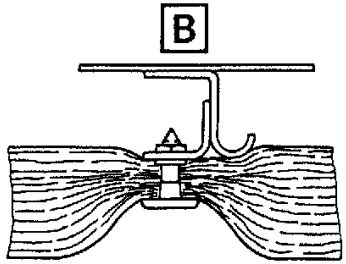
A

SIDEWALL AND FRAME BLANKET ATTACHMENT





BLANKET ATTACHMENT
ON STRINGERS



BLANKET ATTACHMENT
ON STRINGERS
(ALTERNATIVE)

Figure 57 Insulation Mats, Typical Installation

25–65 EMERGENCY LOCATOR TRANSMITTER

EMERGENCY LOCATOR TRANSMITTER (ELT) SYSTEM DESCRIPTION

ELT Version 1 (CEIS) General

The ELT system transmits on 3 frequencies, 121.5 MHz (Civil) and 243 MHz (Military) homing–signals and 406 MHz to the COSPAS–SARSAT satellite system. The battery–pack, installed in the ELT housing, supplies the power to operate the system.

The satellite system transmits the 406 MHz distress signal to a Local User Terminal (LUT), when the LUT is in range. The LUT receiving range is a radius of approximately 2.500 km (1367.00 NM). When the LUT is not in receiving range, the satellite system stores the distress signal until transmission is possible. The LUT automatically processes the distress signal to identify and show the position of the aircraft to a radius of approximately 1.8 km (5900.00 ft.). The processed data is transmitted to a Mission Control Center (MCC). The MCC sends the data to an applicable Rescue Coordination Center (RCC), where Search And Rescue (SAR) operations are started. The 121.5 MHz (civil) and 243 MHz (military) signals are used to find the aircraft in the final stage of SAR operation.

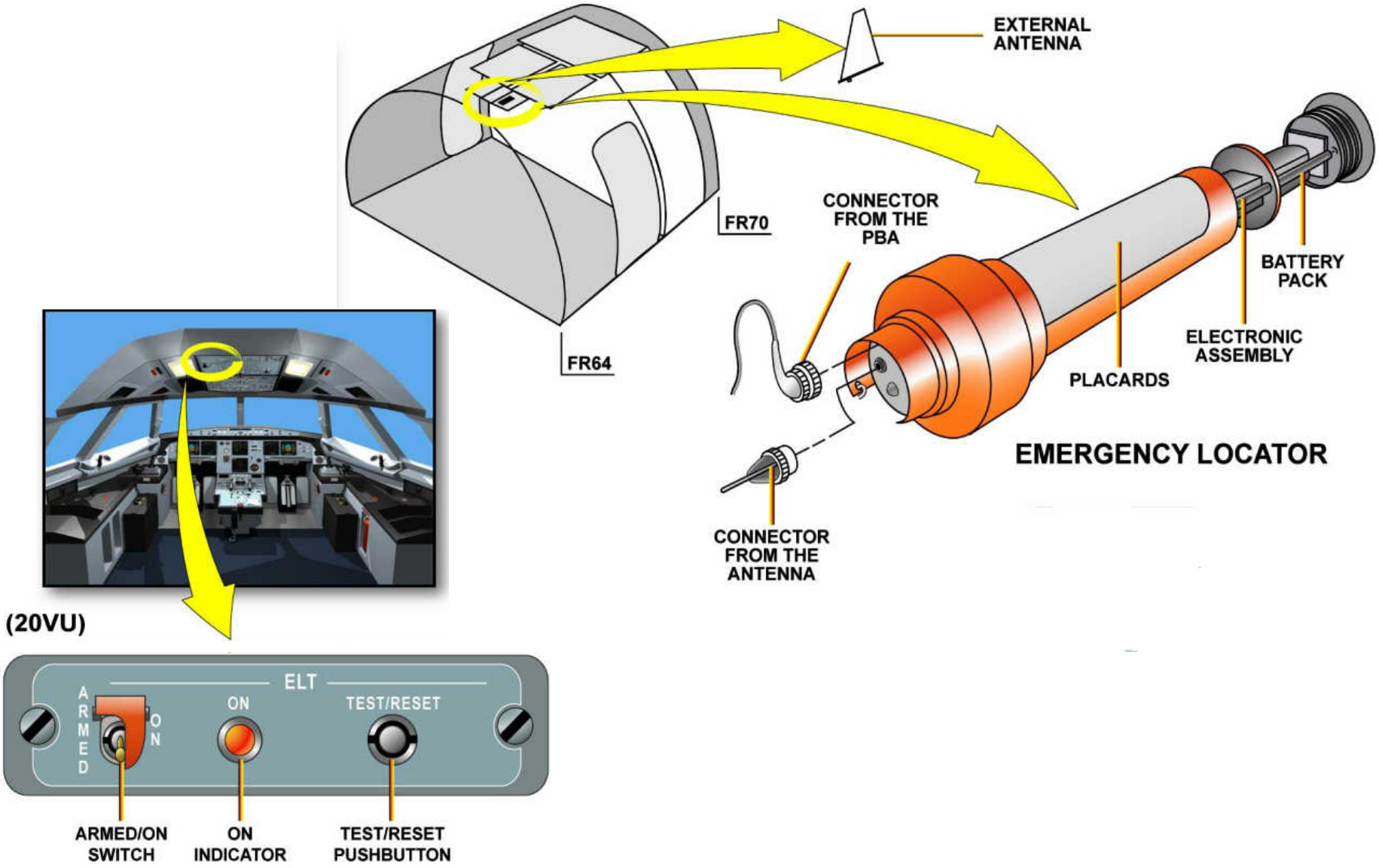


Figure 58 ELT General

ELT Version 1 (CEIS)

The ELT system transmits on 3 frequencies, 121.5 MHz (Civil) and 243 MHz (Military) homing–signals and 406 MHz to the COSPAS–SARSAT satellite system. The battery–pack, installed in the ELT housing, supplies the power to operate the system.

The satellite system transmits the 406 MHz distress signal to a Local User Terminal (LUT), when the LUT is in range. The LUT receiving range is a radius of approximately 2.500 km (1367.00 NM). When the LUT is not in receiving range, the satellite system stores the distress signal until transmission is possible. The LUT automatically processes the distress signal to identify and show the position of the aircraft to a radius of approximately 1.8 km (5900.00 ft.). The processed data is transmitted to a Mission Control Center (MCC). The MCC sends the data to an applicable Rescue Coordination Center (RCC), where Search And Rescue (SAR) operations are started. The 121.5 MHz and 243 MHz signals are used to find the aircraft in the final stage of SAR operation.

ELT Description

The ELT system is composed of:

- an emergency locator, installed in a support assembly which is installed above the ceiling panel in the AFT utility area, between FRame 65 and FR66,
- a programming–box assembly, which is a part of the support assembly and is connected by a short cable to the ELT,
- a remote control panel, installed on the cockpit overhead panel,
- an external antenna, linked to the ELT which is installed on the upper external fuselage between FR64 and FR65,
- a remote control panel, installed on the cockpit overhead panel.

The ELT has a cylindrical orange–colored housing which includes these components:

- placards attached to the housing (Identification, expiry date and operating instructions, battery),
- an electronic assembly,
- a high–powered battery–pack,
- an interface,
- a float and a whip–antenna (referred to as antenna).

The electronic assembly and the battery–pack are kept in the cylindrical housing, the battery–pack supplies the power to operate the ELT, installed in the aircraft, or used in portable mode. The electronic assembly components are an activation board, which includes the G–switch, and a triple–frequency transmitter board. The interface includes:

- an ANT connector, to connect the whip or external antenna,
- a TX indicator, to indicate a BITE test result or when ELT operates,
- an AUTO/OFF/ON switch, to select desired mode,
- a TC connector, used to connect a remote control panel, a programming–box assembly and programming/test/reading equipment.

Programming Box Description

The interface on the front face of the programming–box assembly includes:

- a connector for the connection from the remote control panel,
- a connector for the connection to the TC connector on the ELT,
- a red indicator.

Remote Control Panel

The front panel of the remote control panel includes:

- an ARMED/ON switch,
- an ON indicator,
- a TEST/RESET P/B.

The ARMED/ON switch has a switch guard, to prevent inadvertent manipulation.

CAUTION: AN ELT TEST IS ALLOWED THE FIRST FIVE MINUTES AFTER THE HOUR UTC, BETWEEN XX:00 HOURS AND XX:05 HOURS. THIS IS TO PREVENT UNWANTED RESCUE OPERATIONS.

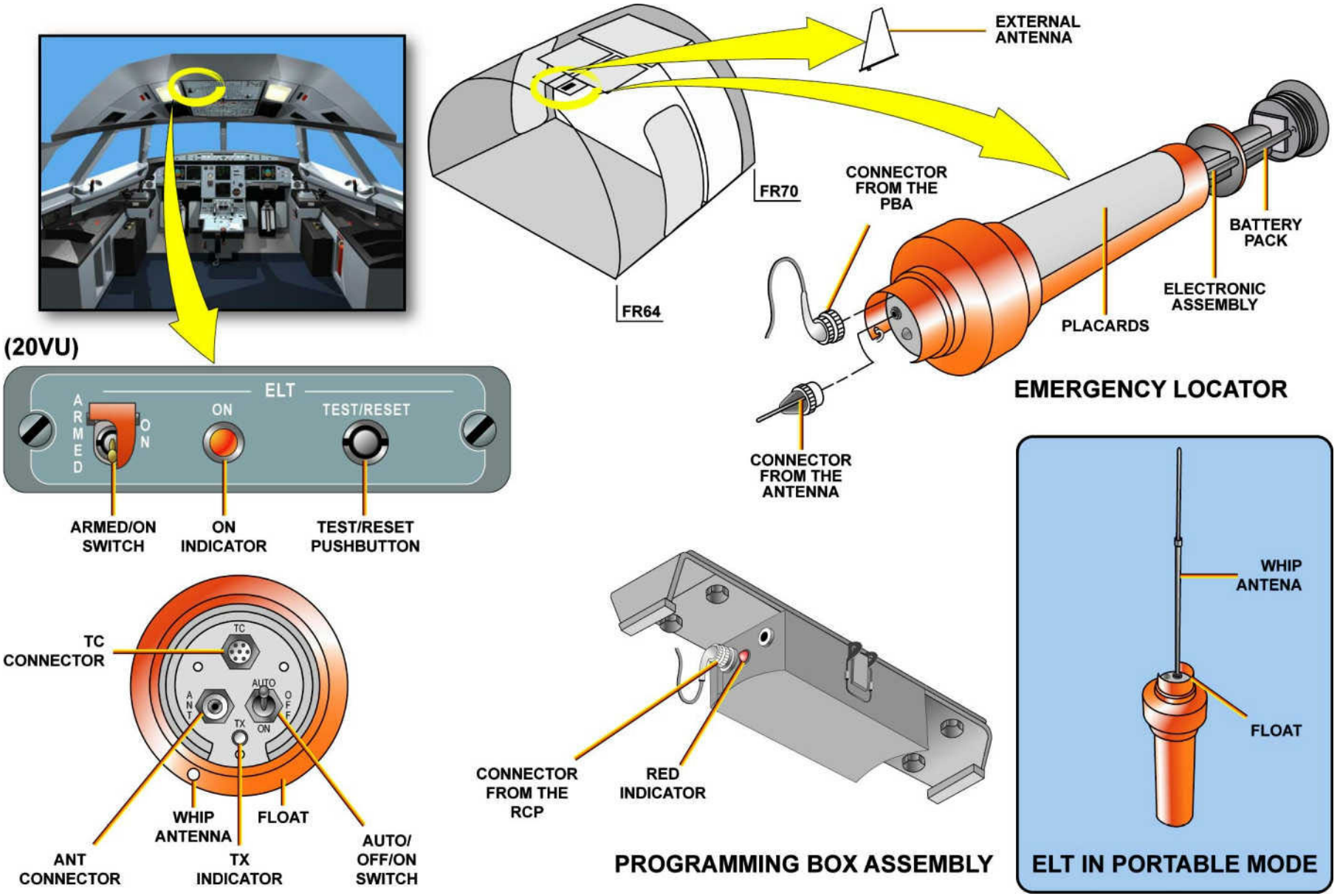


Figure 59 Emergency Locator Transmitter (Version 1)

ELT OPERATION

The ELT can be operated in automatic or manual mode. When you use the ELT in portable mode it is operated manually, this is done by removing the antenna and connect it to the ANT connection on the ELT. The AUTO/OFF/ON switch, located on the front face of the ELT has three functions:

- The AUTO position for automatic operation of the ELT.

  An automatic operation is triggered when the ELT is connected to its system in the A/C, and the G–switch detects an impact sufficient to start transmission,
- The OFF position.

  Used when the ELT is connected to its system in the A/C and requires maintenance, when the ELT is disconnected from its system and removed from the A/C, or to stop transmission,
- The ON position.

  Used for manual operation of the ELT. Manual operation is used when the ELT is connected to its system in the A/C and the G–switch is not triggered, but a signal must be transmitted (aircraft out of operation, injured passengers/crew members), when the ELT is connected to its system in the A/C and you do a self–test (BITE), or when the ELT is disconnected from its system, removed from the A/C and used in portable mode.

An accidental operation occurs when the ELT is connected to its system in the A/C, and the G–switch starts transmission without a real emergency (hard landing).

Programming Box Assembly

The programming–box assembly automatically transfers information and identification of the A/C to the ELT, when the programming–box assembly is connected to the TC connector. After the data transfer occurs, the programming–box assembly verifies the validity of the data transferred. When all programming and verification is completed the programming–box assembly goes automatically into standby mode.

The programming–box assembly is not operated when the ELT is started from the remote control panel, and has no effect on the signals between the remote control panel and the ELT. If the programming–box assembly becomes defective the connector from the remote control panel can be connected directly to the TC connector.

You can stop ELT transmission when you disconnect the programming–box assembly connector from the TC connector, the AUTO/OFF/ON switch must be set to the OFF position. The programming–box assembly has a red indicator, which comes on to indicate the BITE test result.

Remote Control Panel

The remote control panel controls and indication are as follows:

The ARMED/ON switch is set to the ARMED position for automatic operation of the ELT. The switch is kept in the ARMED position by a switch guard which stops accidental operation of the ELT. The ARMED/ON switch is set to the ON position for manual operation of the ELT. You must lift the switch guard to set the ARMED/ON switch to the ON position.

Pressing the TEST/RESET pushbutton starts a BITE test of the ELT, pressing again stops operation of the ELT, and returns the ELT to its AUTO mode after a complete BITE test sequence. The ON indicator comes on when the ELT operates, or to indicate the BITE test result. When the ELT operates the ON indicator flashes one time, then comes on continuously for 100 seconds. After 100 seconds it flashes continuously on for 1 second and off for 1.5 second.

BITE Test

This BITE test can be done by means of the ELT or the remote control panel on the front face of the ELT, the BITE test is done by, setting the ON/OFF/AUTO switch to the AUTO position and to connect the programming–box assembly to the TC connector, or on the remote control panel, by pushing the TEST/RESET P/BSW, these actions occur:

- the red indicator comes on, on the programming–box assembly,
- the TX indicator and the buzzer operate, on the ELT,
- the ON indicator flash then comes on, on the remote control panel,
- the ELT indicator flashes then comes on, on the external power panel,
- the mechanic call–horn operates, in the nose–landing–gear well.

CAUTION: DO NOT DO THE EMERGENCY LOCATOR TRANSMITTER (ELT) TEST FOR LONGER THAN 150 SECONDS. IF YOU DO, THE ELT WILL SEND DISTRESS SIGNALS AND RESCUE OPERATIONS WILL START.

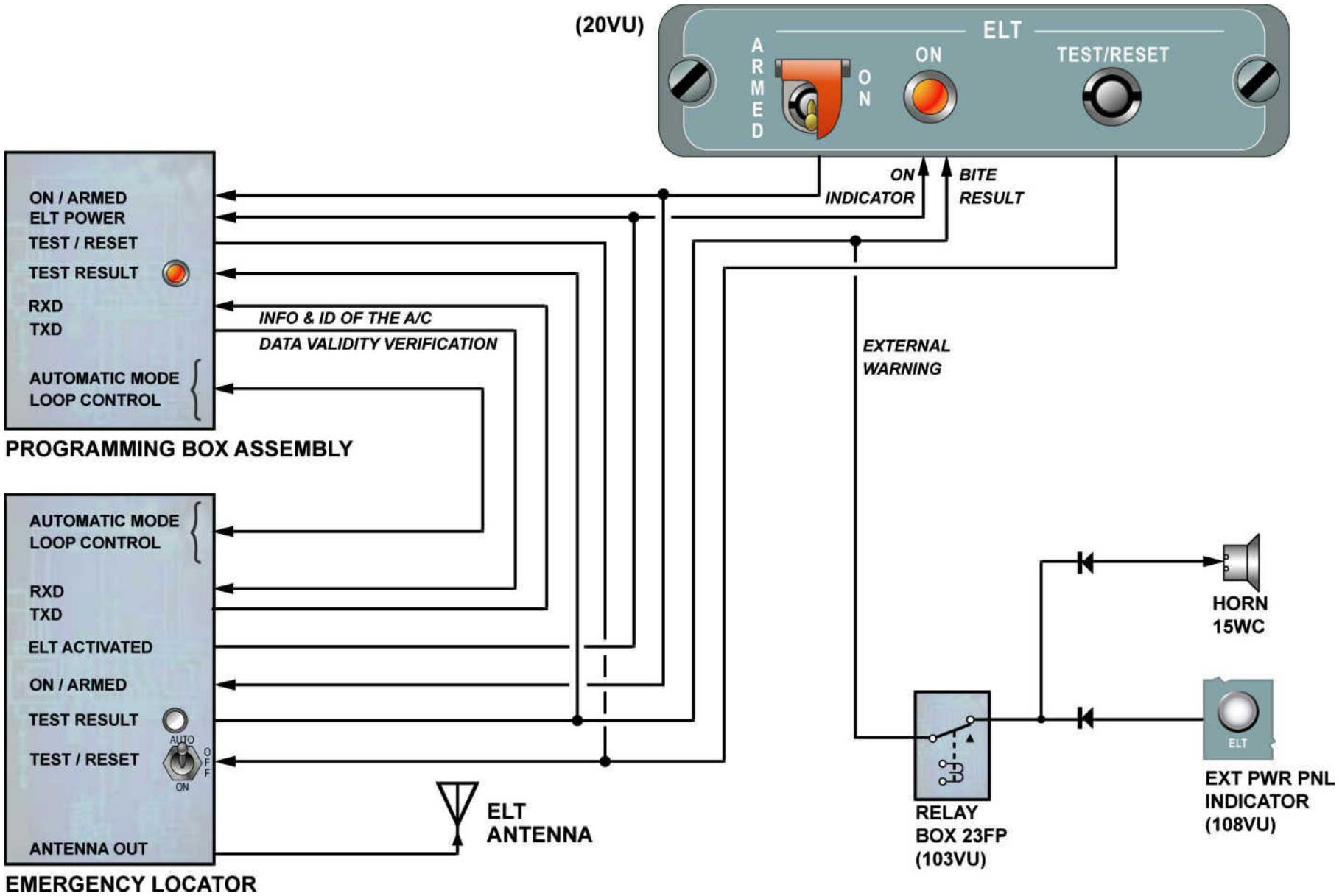


Figure 60 ELT Schematic (Version 1)

ELT VERSION 2 (SEXTANT)

ELT Description

The ELT system is composed of:

- an emergency locator, installed in a bracket, held in position with two buckles and straps, with the interface in flight direction. The bracket is installed above a ceiling panel in the AFT utility area, between FRame 65 and FR66,
- a remote control panel, installed on the cockpit overhead panel,
- an adapter cable attached to the bracket, and programming–dongle connector directly connected to the remote control panel connector,
- an external antenna, linked to the ELT which is installed on the upper external fuselage between FR64 and FR65,
- a mounting bracket.

The ELT has an orange aluminum–alloy casing. The casing has two parts, base plate and housing, and includes these components:

- placards attached to the casing (Identification, strap, instruction, type and battery),
- an electronic board,
- an interface,
- a three cell battery–pack, to supply power to the electronic board,
- a two cell battery–pack, to supply power to the G–switch,
- an auxiliary–antenna (referred to as antenna).

The electronic board is installed in the front half (flight direction), and the battery–packs are installed in the rear half. The interface, on the front face of the housing includes:

- a remote control panel connector.

  Used to connect the remote control panel, programming and test equipment, an adapter cable and programming–dongle connector, and a maintenance–dongle which has a maintenance identification data code programmed in its memory,
- an ANT connector, to connect the antenna,
- a red indicator, to indicate a BITE test result or when ELT operates,
- an ON/OFF/ARMED switch, to select desired mode.

Remote Control Panel

The front panel of the remote control panel includes:

- an ON–ARMED–TEST/RESET switch,
- an ON/TEST indicator.

CAUTION: AN ELT TEST IS ALLOWED THE FIRST FIVE MINUTES AFTER THE HOUR UTC, BETWEEN XX:00 HOURS AND XX:05 HOURS. THIS IS TO PREVENT UNWANTED RESCUE OPERATIONS.

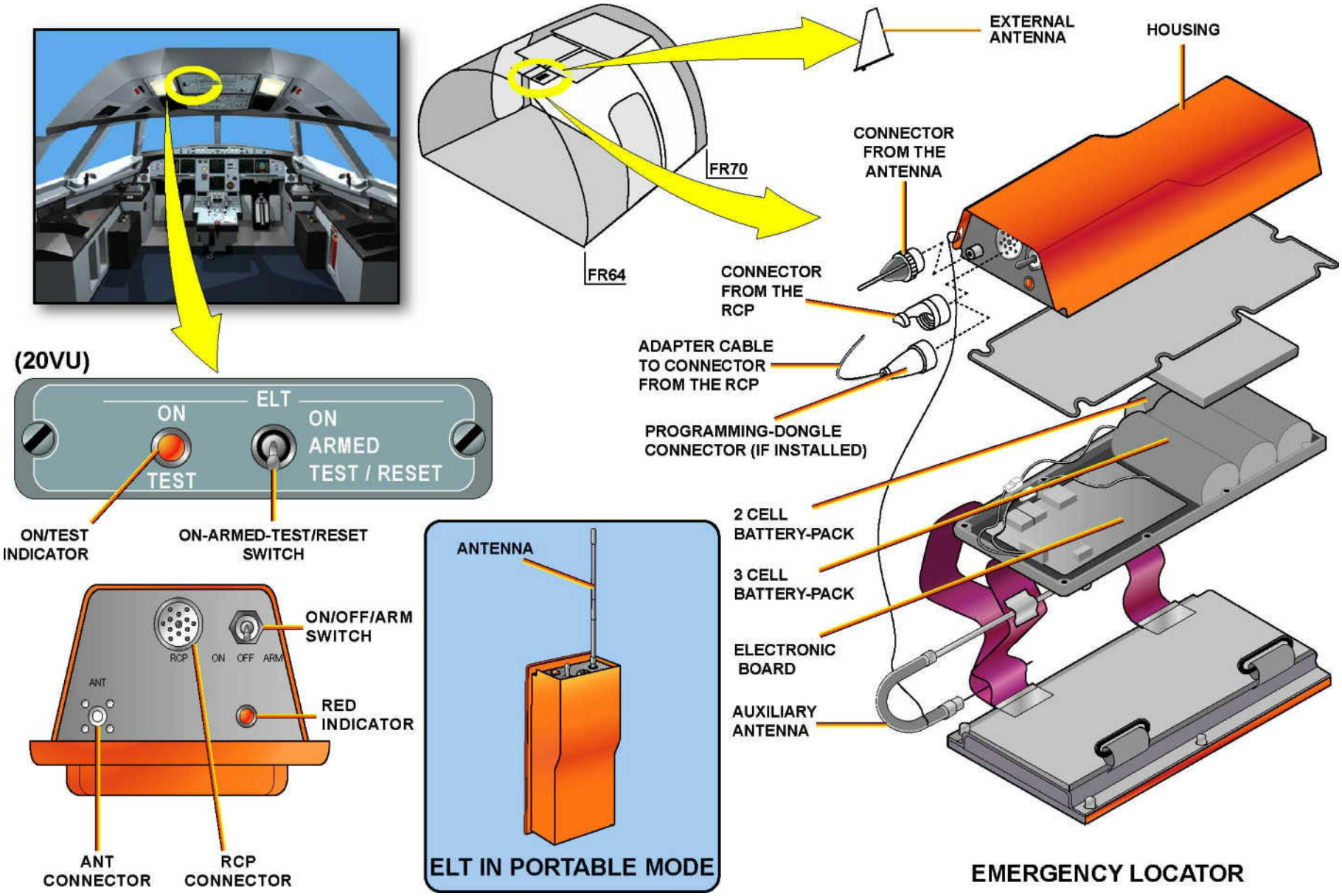


Figure 61 Emergency Locator Transmitter (Version 2)

ELT OPERATION

The ELT can be operated in automatic or manual mode. When you use the ELT in portable mode it is operated manually, this is done by removing the antenna and connect it to the ANT connection on the ELT. The ON/OFF/ARM switch, located on the front face of the ELT has three functions:

- the ARM position for automatic operation of the ELT.

  An automatic operation is triggered when the ELT is connected to its system in the A/C, and the G–switch detects an impact sufficient to start transmission,
- the OFF position,

  Used when the ELT is connected to its system in the A/C and requires maintenance, when the ELT is disconnected from its system and removed from the A/C, or to stop transmission,
- set to the ON position for manual operation of the ELT.

  A manual operation occurs when the ELT is connected to its system in the A/C and the G–switch is not triggered, but a signal must be transmitted (aircraft out of operation, injured passengers/crew members), when the ELT is connected to its system in the A/C and you do a self–test (BITE), or when the ELT is disconnected from its system, removed from the A/C and used in portable mode.

An accidental operation occurs when the ELT is connected to its system in the A/C, and the G–switch starts transmission without a real emergency (hard landing).

Remote Control Panel

The remote control panel controls and indication are as follows:

- The ON–ARMED–TEST/RESET switch is set to the ARMED position for automatic operation of the ELT. The switch is kept in the ARMED position by a stop, which is part of the switch assembly. The ON–ARMED–TEST/RESET switch is set to the ON position for manual operation of the ELT. You must pull the switch to clear the stop, and then set it to the ON position.
- The ON–ARMED–TEST/RESET switch is set to the TEST/RESET position to stop accidental operation, or to do a BITE test. The switch goes back automatically to the ARMED position after you have set it to the TEST/RESET position. The ON/TEST indicator comes on when the ELT operates, or to indicate the BITE test result.

  When the ELT operates the ON/TEST indicator:
  - flashes two times per second during military and civil transmission,
  - and, one long flash during satellite transmission.

BITE Test

This BITE test can be done by means of the ELT or the remote control panel. On the front face of the ELT, the BITE test is done by, setting the ON/OFF/ARM switch to the ARM position, or on the remote control panel, by setting the ON–ARMED–TEST/RESET switch to TEST/RESET position, these actions occur:

- the red indicator flashes one time, then comes on, and the buzzer operates, on the ELT,
- the ON/TEST indicator flashes one time, then comes on, on the remote control panel,
- the ELT indicator comes on, on the external power panel,
- the mechanic call–horn operates, in the nose–landing–gear well.

CAUTION: DO NOT OPERATE THE ELT FOR LONGER THAN 30 SECONDS AFTER THE BITE TEST. AFTER 30 SECONDS, THE ELT WILL TRANSMIT DISTRESS SIGNALS, WHICH WILL START SEARCH AND RESCUE OPERATIONS.

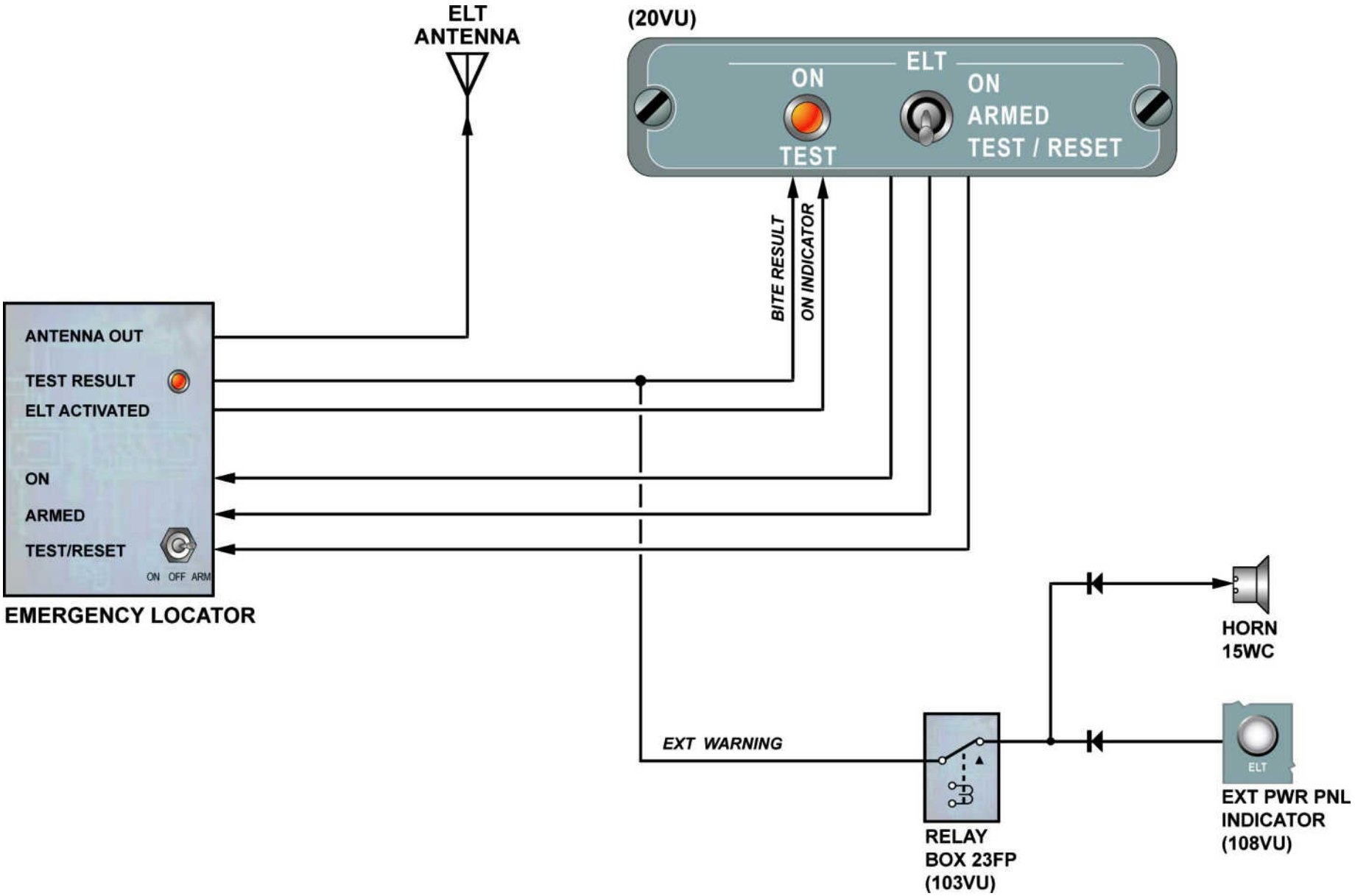


Figure 62 ELT Schematic (Version 2)

PERSONAL LOCATOR BEACON (PLB) DESCRIPTION

Operation

The PLB is switched on when you move the TEST/OFF/ON slide–switch to the ON position, or when you pull the lanyard. The lanyard is attached to the TEST/OFF/ON slide–switch.

SYSTEM PRESENTATION

Personal Locator Beacon

The PLB is installed on the AFT wall of the cockpit wardrobe. It is held in a container with a strap, which is safetied with a seal. The seal can be broken when you use the PULL handle. The PLB has a rectangular YELLOW/NATO green housing which includes these components:

- Placards attached to the housing (Identity and Operating instructions, Mod record and Battery P/N),
- a carrying strap,
- an electronic assembly,
- a battery,
- a telescopic antenna,
- a transceiver,
- a MIC/Loudspeaker,
- a TEST/OFF/ON slide–switch,
- a lanyard (ON),
- a PRESS TO TALK key,
- a HI/LO volume switch,
- a beacon active lamp (referred to as lamp) and
- a BITE (**B**uilt–**I**n–**T**est **E**quipment).

Telescopic Antenna

The antenna is attached on the back face of the PLB, and is folded along the housing, when not in use. In operation the antenna is folded open through 180 deg. and then extended telescopically.

Built In Test Equipment

This function is operated by the TEST/OFF/ON slide–switch. The switch is spring loaded to the OFF position, and must be held in the TEST position until the test is completed.

The test gives these results:

- Simultaneously, after 3–5 seconds, two short swept–tones and two flashes from the lamp
- After a further time, you hear a beep and the lamp comes on permanently.

The two swept–tones and lamp flashes indicate that the 121.5 MHz and the 243.0 MHz transmitter is in a serviceable condition. The beep and the lamp that comes on permanently indicate that the 406.025 MHz transmitter is in a serviceable condition.

Transceiver

The PLB can be used as a communications transmitter, when you press the PRESS TO TALK key and speak in the MIC/Loudspeaker. The receiving range is approximately an area of 3 to 5 miles (4.83 to 8.00 km) (if you can see or hear the SAR team).

During transmission the 406.025 MHz signal overrides all other functions, including two–way communications.

If you double–click the PRESS TO TALK key you have a communication–only mode, which is indicated by the lamp that comes on permanently. In this mode all distress signal transmissions are stopped. Communications operate when you press the PRESS TO TALK key and speak in the MIC/Loudspeaker. The communication frequency can be changed with the HI/LO volume switch (LO is 243.0 MHz and HI is 282.8 MHz). To return to distress signal transmission you double–click the PRESS TO TALK key.

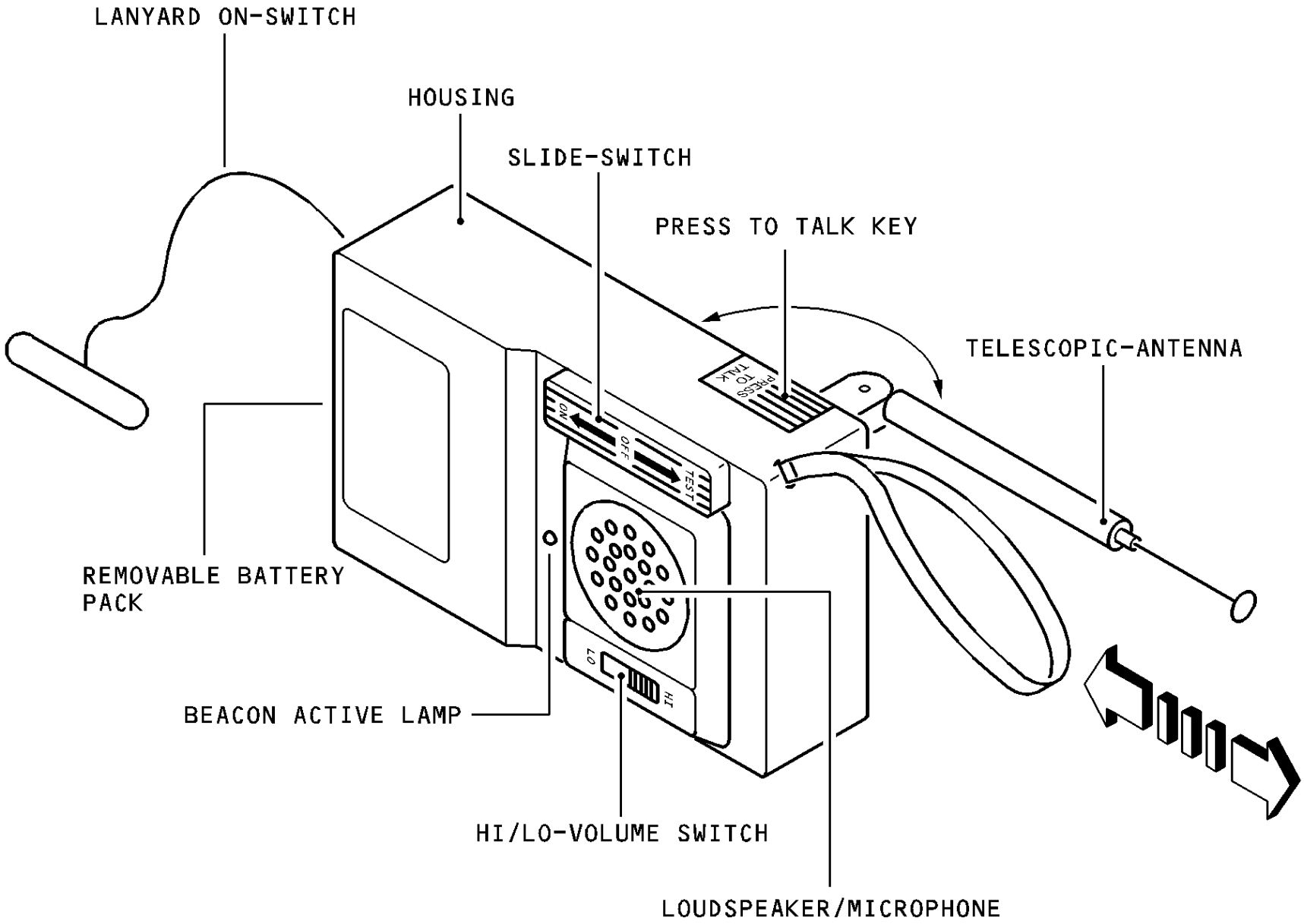


Figure 63 Personal Locator Beacon Presentation

PERSONAL LOCATOR BEACON (PLB) COMPONENT DESCRIPTION

Electronic Assembly

The electronic assembly is contained in one half of the housing, and includes the transmitters, which operate on three frequencies:

- A swept–tone–modulated homing–signal simultaneously on frequencies 121.5 MHz (Civil) and 243.0 MHz (Military).
- A signal on frequency 406.025 MHz to the COSPAS–SARSAT satellite system.

The transmissions are verified as follows:

- For the 121.5 MHz and the 243.0 MHz signals, the lamp flashes rapidly and you can hear a part of the swept–tone signal. The transmission continues for 48 hours.
- The 406.025 MHz signal is transmitted at approximately 50 second intervals, and is accompanied by a BEEP and a flash from the lamp. The transmission stops automatically after 24 hours.

The satellite system transmits the 406. 025 MHz distress signal to a LUT (**L**ocal **U**ser **T**erminal), when the LUT is in range. The LUT receiving range is a radius of approximately 2,500 km (1367.00 NM).

When the LUT is not in receiving range, the satellite system stores the distress signal until transmission is possible. The LUT automatically processes the signal to identify and show the position of the aircraft to a radius of approximately 1.8 km (5900.00 ft.). The processed data is transmitted to a MCC (**M**ission **C**ontrol **C**enter). The MCC sends the data to an applicable RCC (**R**escue **C**oordination **C**enter), where SAR (**S**earch **A**nd **R**escue) operations are started. The 121.5 MHz and the 243.0 MHz signals are used to find the aircraft in the final stage of SAR operation.

Battery

The battery is contained in the other half of the housing, and supplies the power to operate the PLB. A tool is supplied with the PLB to replace the battery and to tighten (torque) the telescopic antenna.

The battery life is 48 hours at a temperature between –20.0 deg. C (–4.00 deg. F) and 55.0 deg. C (131.00 deg. F) , or 6 hours at a temperature of –30.0 deg. C (–22.00 deg. F) .

Telescopic Antenna

The antenna is attached on the back face of the PLB, and is folded along the housing, when not in use. In operation the antenna is folded open through 180 deg. and then extended telescopically.

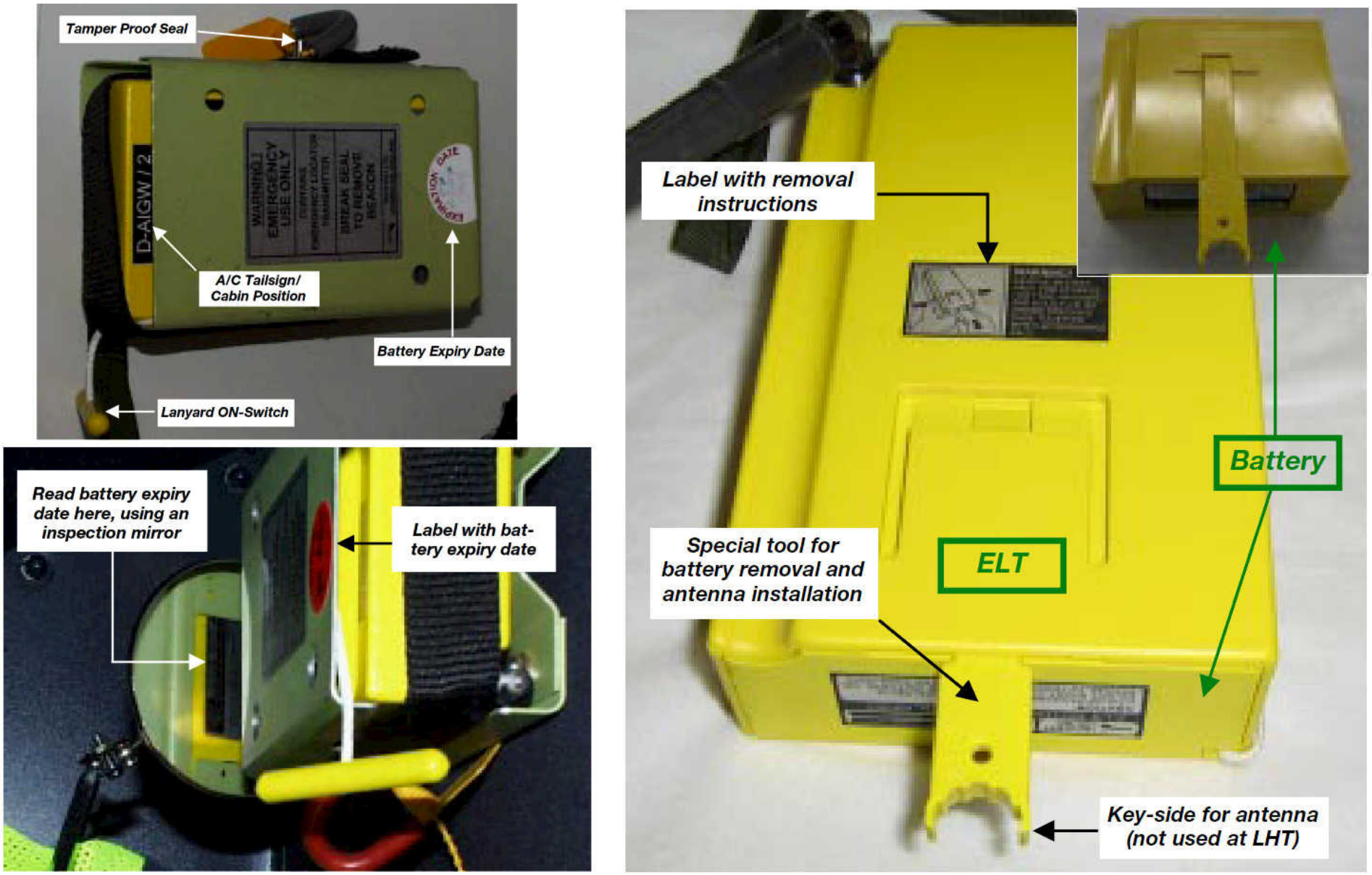


Figure 64 Personal Locator Beacon Pictures

TABLE OF CONTENTS

TABLE OF CONTENTS

TABLE OF FIGURES