CHAPTER

25

Equipment and Furnishings

CHAPTER 25
EQUIPMENT AND FURNISHINGS

A = Added, R = Revised, D = Deleted, O = Overflow, C = Customer Originated Change

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EQUIPMENT AND FURNISHINGS - INTRODUCTION

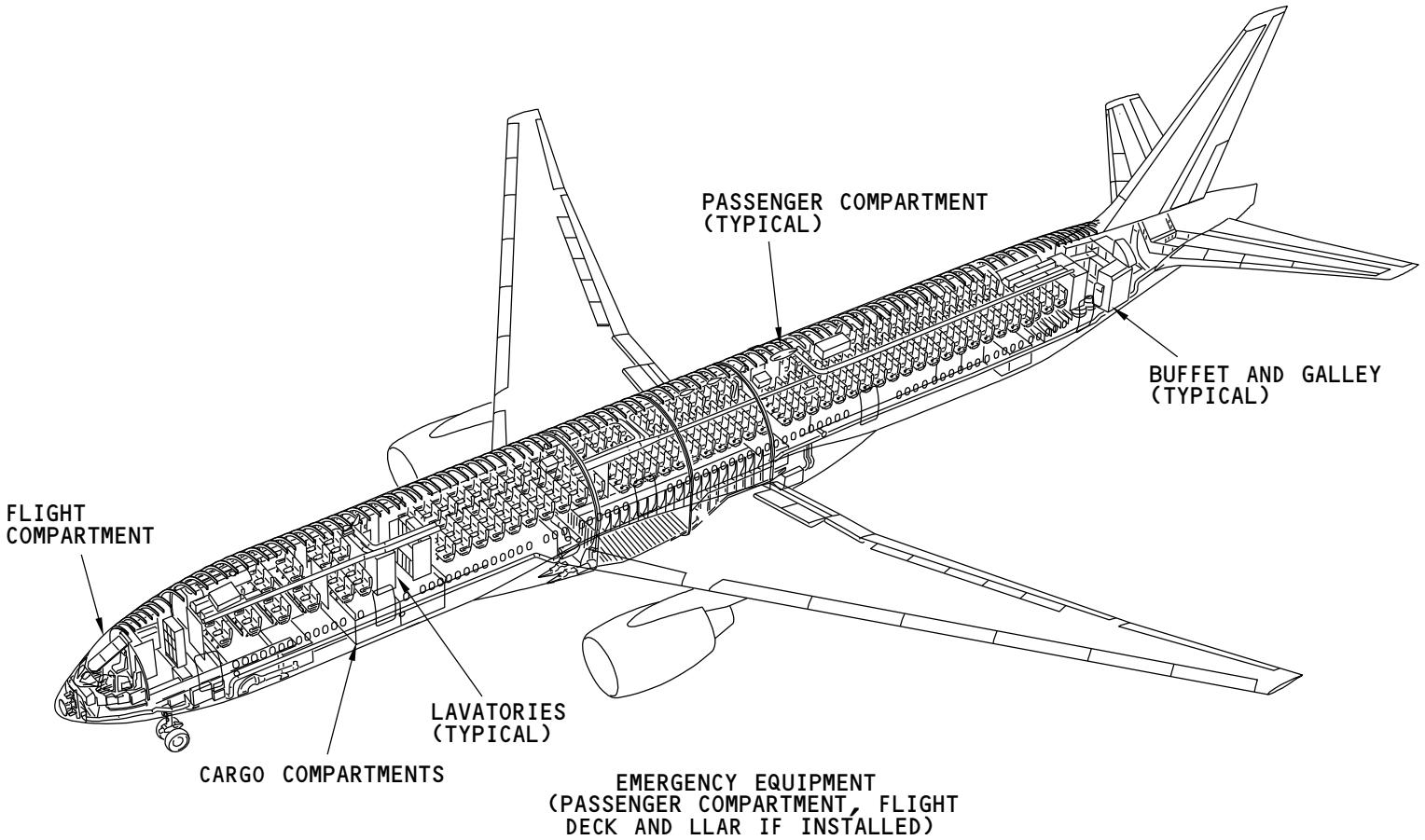
General

ATA chapter 25, equipment and furnishings, includes these sections:

- Flight compartment
- Lavatories
- Passenger compartment
- Buffet and galley
- Emergency Equipment
- Cargo compartments.

Abbreviations and Acronyms

- C - celsius
- CRA - crew rest area
- dn - down
- dr - door
- emer - emergency
- evac - evacuation
- F - fahrenheit
- F/D - flight deck
- FCR - flight crew rest
- fwd - forward
- gnd - ground
- inbd - inboard
- L - left
- lav - lavatory
- LLAR - lower lobe attendants rest
- MDCR - main deck crew rest
- mgmt - management
- OEU - overhead electronics unit
- pnl - panel
- PSIG - pounds per square inch, gage
- PSU - passenger service unit
- pwr - power
- R - right
- ref - reference
- SEU - seat electronic unit
- sig - signal
- svce - service
- SVU - seat video unit
- sw - switch



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EQUIPMENT AND FURNISHINGS - INTRODUCTION

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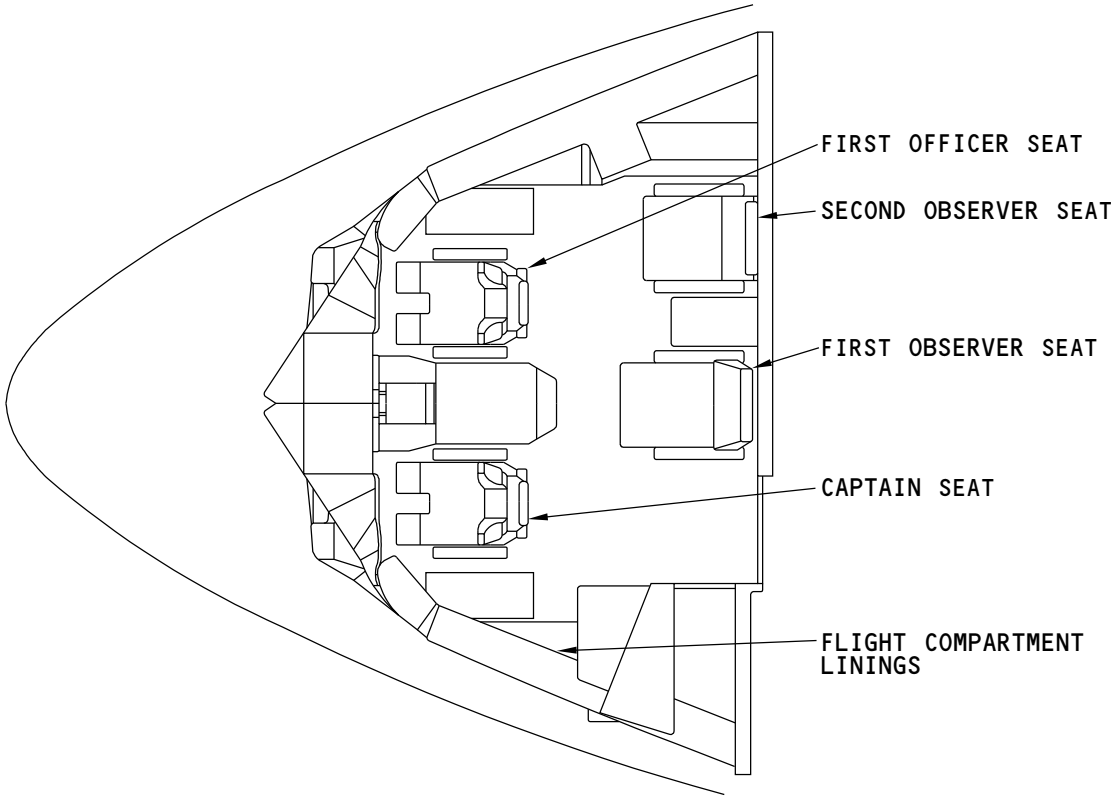
FLIGHT COMPARTMENT - INTRODUCTION

General

The flight compartment equipment and furnishings include these items:

- Captain and first officer seats
- Observer seats
- Flight compartment linings.



FLIGHT COMPARTMENT
(TOP VIEW)

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FLIGHT COMPARTMENT - INTRODUCTION

Physical Description

The captain and first officer seats are opposite units. The main controls are on the right side of the pilot seat and the left side of the first officer seat. The seats have these parts:

- Headrest
- Back Cushion
- Seat cushion
- Armrests
- Restraint system
- Support base
- Electric actuator (2).

The height and angle of the headrest is manually adjustable.

The back cushion has a lumbar support with manual adjustment up/down and forward/aft. The angle of the seat back (recline) is also adjustable.

The seat cushion has adjustable thigh pads. The angle of the thigh pads is manually adjustable. The pads fold downward under pressure from rudder or brake application. When you remove the pressure, the pads return to their initial position.

The angle of each armrest is manually adjustable. The armrests lifts to a vertical position for entry and exit.

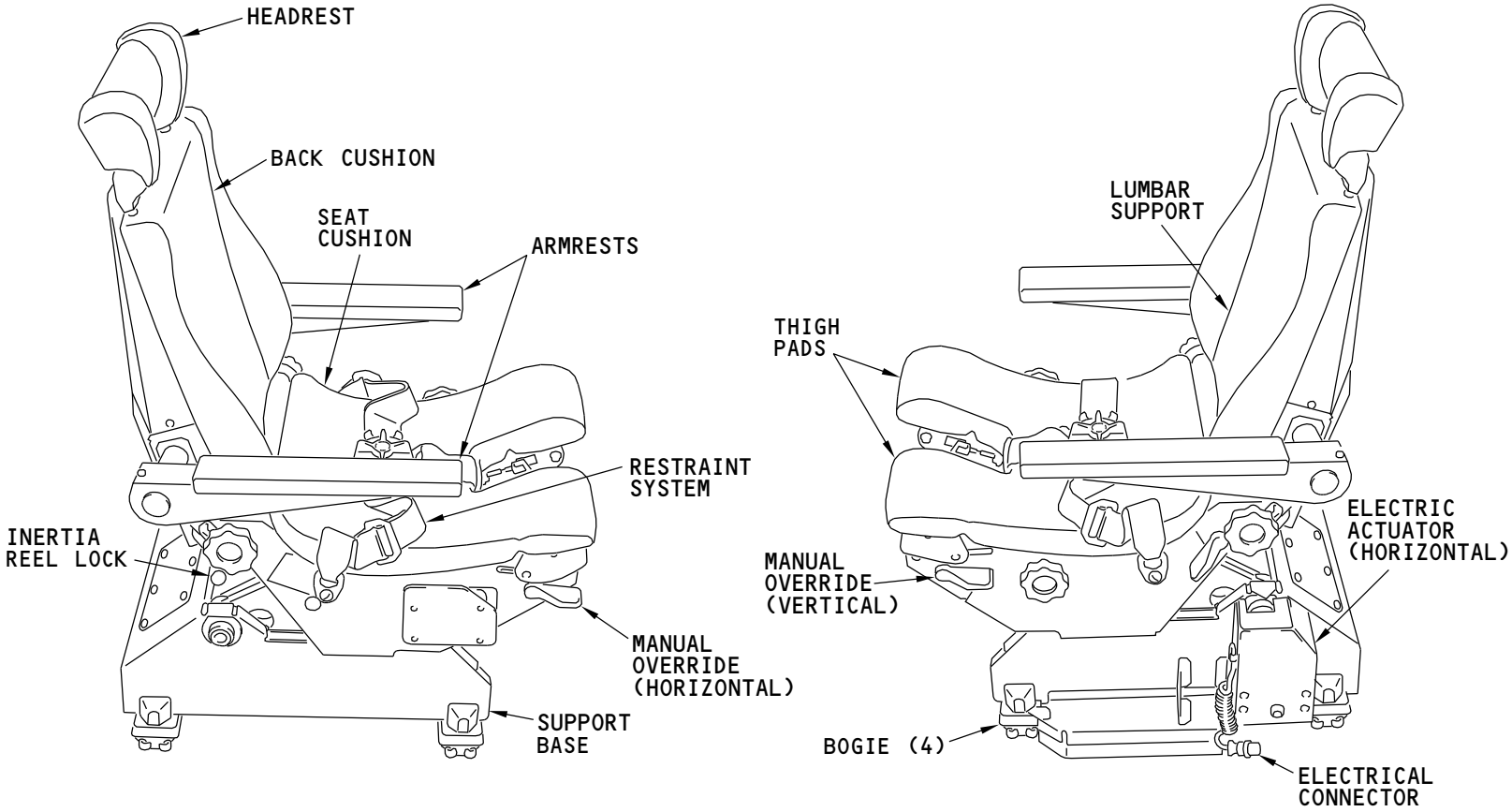
The restraint system has a shoulder harness (not shown), lap belt, and crotch strap. The inertia reel for the shoulder harness has a manual lock.

The support base has bogies which attach the seat to the floor tracks. The shape of the floor tracks give forward/aft adjustment as well as inboard/outboard movement for entry and exit.

An electric actuator moves the seat horizontally on the seat tracks. The horizontal actuator drives a gear (not shown) which engages a toothed rack on the floor track. The horizontal adjustment has a manual override.

An electric actuator (internal) moves the seat vertically. The vertical adjustment has a manual override.

A coiled cord with an electrical connector connects the seat electrical system to the airplane wiring.



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FLIGHT COMPARTMENT - CAPTAIN/FIRST OFFICER SEAT - INTRODUCTION

Headrest

Pull up or push down on the headrest to adjust the vertical position. Move the headrest cushion to the right and turn it to adjust the headrest angle. The angle adjustment has eight positions.

Recline

To increase the recline angle, pull up and hold the recline control then push aft on the seat back. Release the control to lock the seat back in the new position.

To decrease the recline angle, pull up and hold the recline control. Let the seat back move toward the upright position. Release the control to lock the seat back in the new position.

Lumbar Support

The back cushion has a built in lumbar support. Turn the left lumbar support control to move the back cushion up or down. Turn the right lumbar support control to move the back cushion forward or aft.

Armrests

Adjustment knobs are under the forward end of the armrests. Turn the knob to move the armrest up or down.

The armrests fold to a vertical position for entry and exit. Lift up on the front of the armrest to fold it up. When the armrest is folded up as far as it will go, you can push it in toward the center of the seat.

Thigh Pads

Turn the thigh pad control to lift or lower the thigh pad.

Horizontal Adjustment

Hold the horizontal control switch in the forward position to move the seat inboard and forward. The seat stops automatically when it is all the way forward. Hold the switch in the aft position to move the seat aft and outboard. The seat stops automatically when it is all the way outboard.

If the power adjustment fails, adjust the horizontal position of the seat manually. Pull up and hold the horizontal movement manual override. This disengages the electric actuator from the track. Move the seat to the desired position. Release the manual override to lock the seat in the new position. Stops on the seat tracks keep the horizontal movement to a limit.

Vertical Adjustment

Hold the vertical control switch in the up position to move the seat up. The seat stops automatically when it is all the way up. Hold the switch in the down position to move the seat down. The seat stops automatically when it is all the way down.

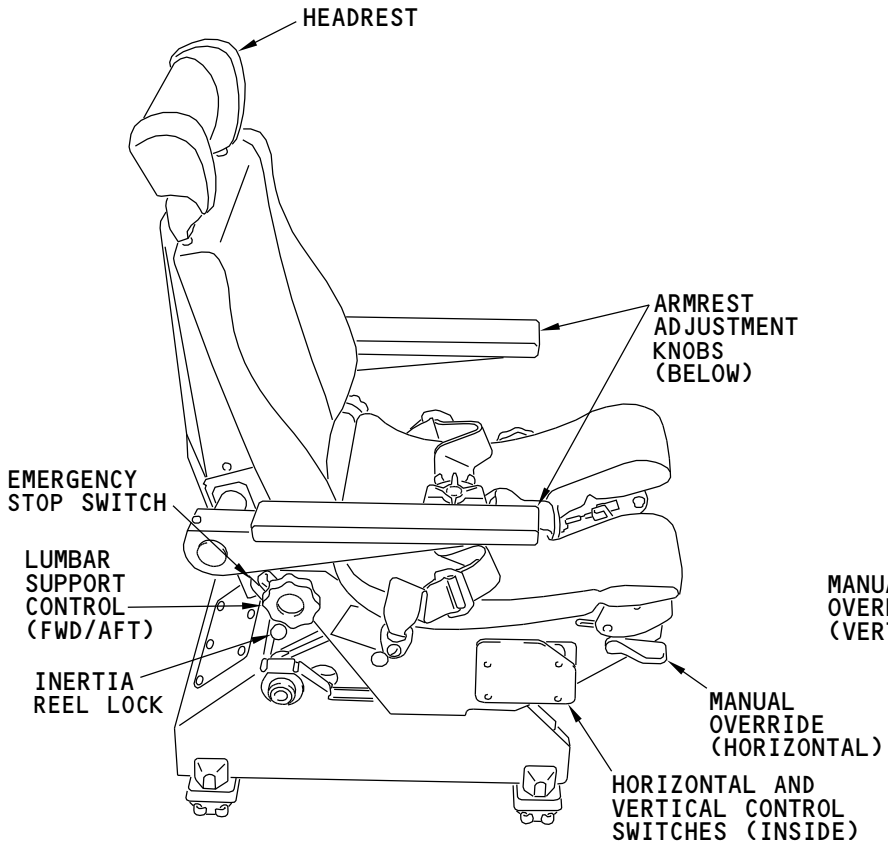
If the power adjustment fails, adjust the vertical position of the seat manually. Move some of your weight off the seat then pull up and hold the vertical movement manual override. This disengages the electric actuator. Move the seat to the desired position. Release the manual override to lock the seat in the new position. Internal stops keep the vertical movement to a limit.

Emergency Stop

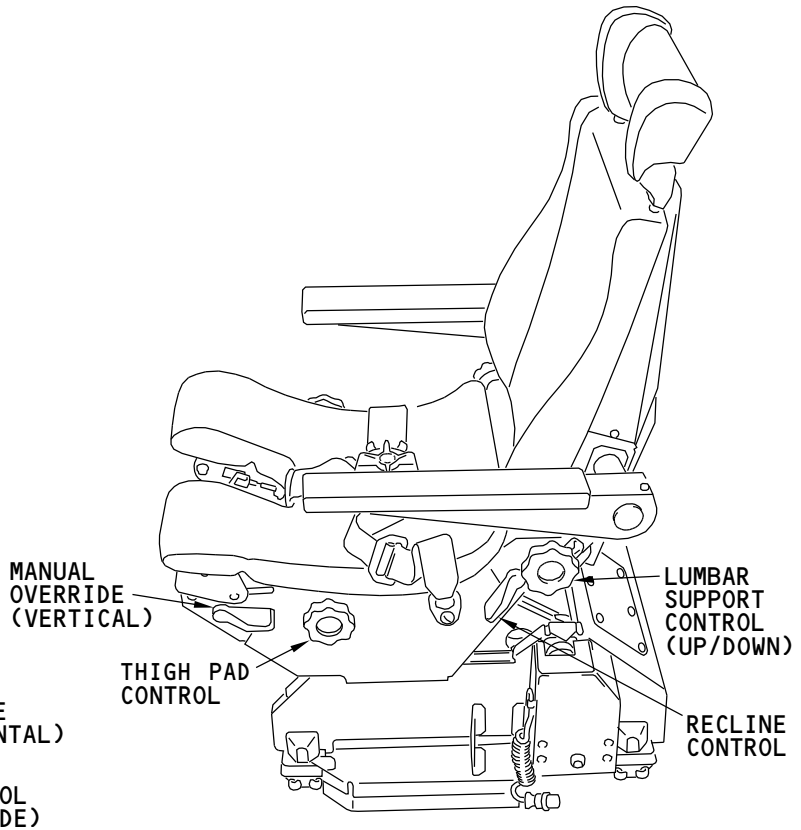
If the seat continues to move when you release an adjustment switch, use the emergency stop switch.

Inertia Reel Lock

The inertia reel lock has positions for lock and unlock.



CAPTAIN SEAT - RIGHT SIDE



CAPTAIN SEAT - LEFT SIDE

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FLIGHT COMPARTMENT - CAPTAIN/FIRST OFFICER SEAT - OPERATION

FLIGHT COMPARTMENT - CAPTAIN/FIRST OFFICER SEAT - FUNCTIONAL DESCRIPTION

General

The left utility bus supplies 115v ac three phase power to the circuits. The vertical and horizontal control circuits are similar. Phase-switching relays control the direction of the motors. An emergency switch lets you stop the motors if the normal control circuits fail.

The circuits for the captain and first officer seats are similar except for the power source; power for the first officer seat comes from the right utility bus.

Up Operation

Phase C supplies power to the UP/DOWN switch. When you hold the switch in the UP position, power goes through the motor thermal protectors and the emergency switch to the power relay. The relay energizes and supplies three phase power to the up and down relays.

Another set of contacts in the UP/DOWN switch permits power to go through the up limit switch and the down relay to energize the up relay. Three phase power operates the vertical motor to move the seat up. When the seat is up as far as it will go, the up limit switch opens and removes power from the up relay coil. The relay de-energizes and removes power from the motor.

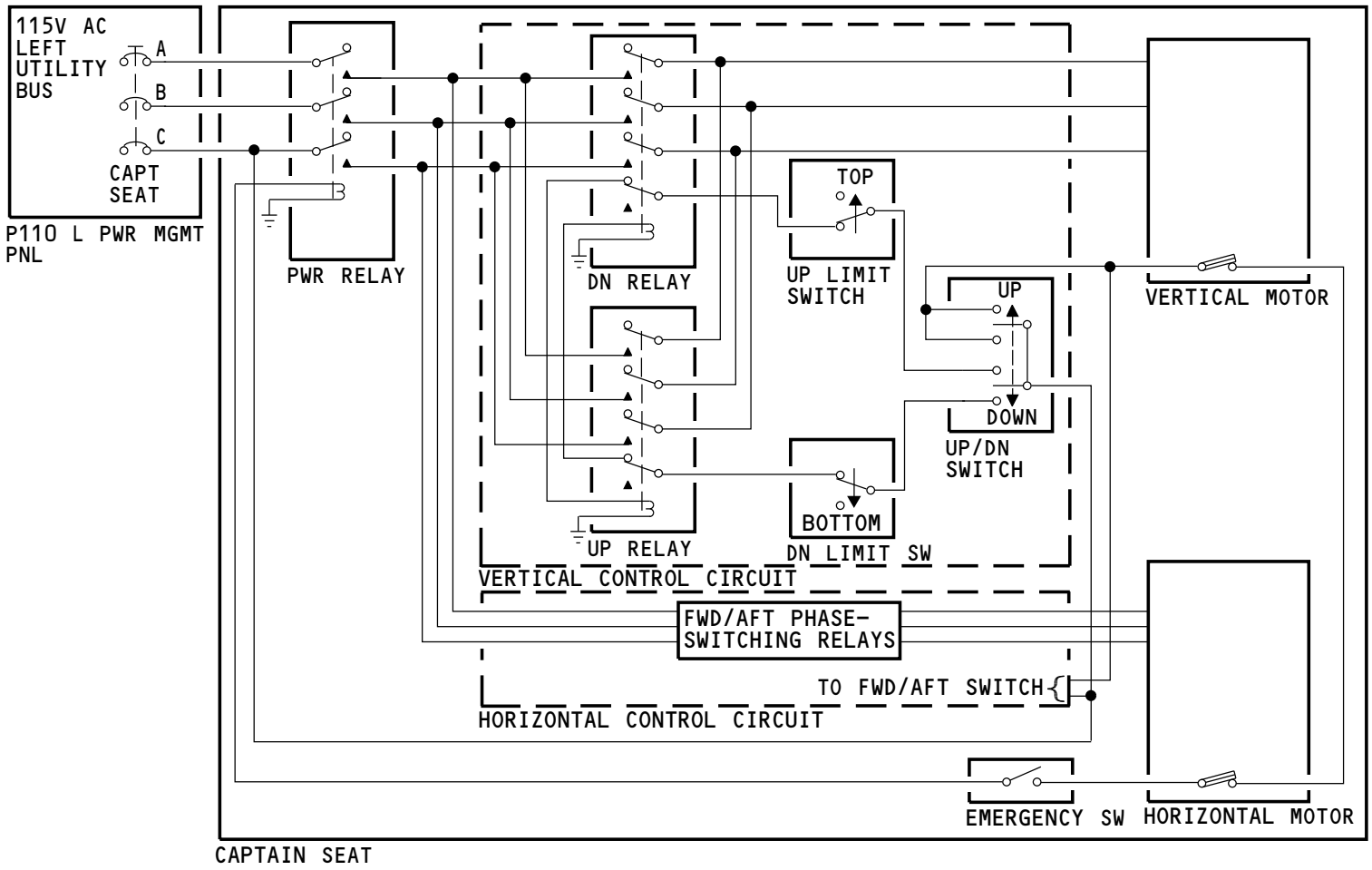
Down Operation

When you hold the switch in the DOWN position, power goes through the motor thermal protectors and the emergency switch to the power relay. The relay energizes and supplies three phase power to the up and down relays.

Another set of contacts in the UP/DOWN switch permits power to go through the down limit switch and the up relay to energize the down relay. Three phase power operates the vertical motor to move the seat down. When the seat is down as far as it will go, the down limit switch opens and removes power from the down relay coil. The relay de-energizes and removes power from the motor.

Horizontal Operation

The horizontal control circuit is similar to the vertical control circuit. A FWD/AFT switch controls the horizontal motor through phase-switching relays and limit switches.



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FLIGHT COMPARTMENT - CAPTAIN/FIRST OFFICER SEAT - FUNCTIONAL DESCRIPTION

Seat Removal

To remove the seat, do these steps:

- Disconnect the electrical connector
- Remove the forward stops from the seat tracks
- Use the horizontal control manual override to disengage the actuator gear from the seat track
- Slide the seat forward off the tracks.

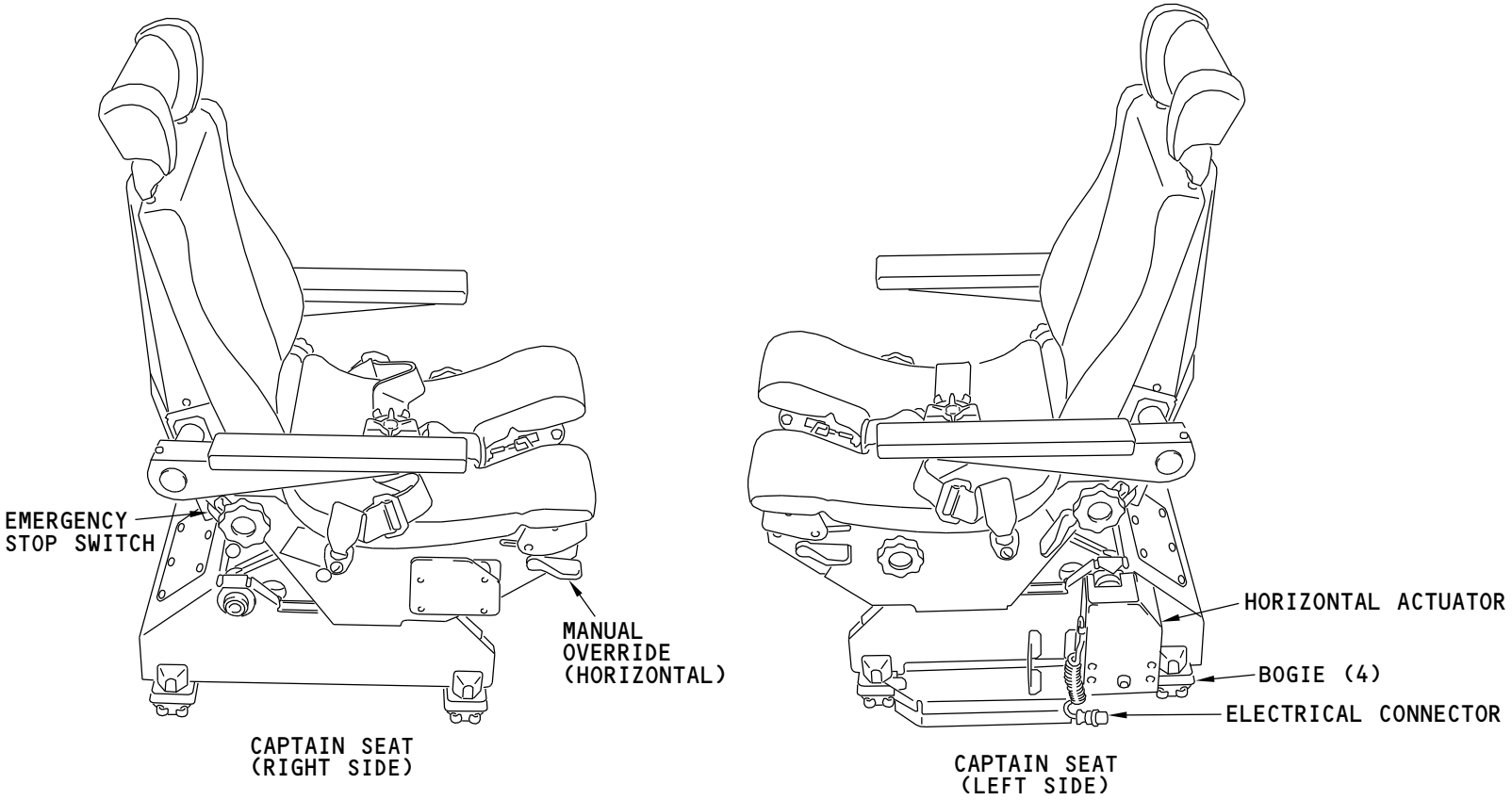
Seat Installation

To install the seat do these steps:

- Put the seat just forward of the seat tracks
- Turn the bogies so the roller with the angled face is inboard
- Align and engage the bogies with the seat tracks as you slide the seat aft
- Roll the seat aft until the actuator gear reaches the rack on the seat track
- Use the horizontal control manual override to raise the gear out of the way
- Turn the gear so it meshes with the rack, then release the manual override control
- Install the seat stops
- Connect the electrical connector.

Power Removal

The emergency stop switch removes power from the horizontal and vertical control circuits, but does not remove power from the seat. Disconnect the electrical connector if you need to remove power from the seat for maintenance.



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FLIGHT COMPARTMENT - CAPTAIN/FIRST OFFICER SEAT - TRAINING INFORMATION POINTS

First Observer Seat

The first observer seat has these parts:

- Headrest
- Back Cushion
- Restraint system
- Armrests
- Seat cushion
- Support base
- Control box.

The height and angle of the headrest is manually adjustable.

The back cushion has a lumbar support with manual adjustment up/down and forward/aft. The angle of the seat back (recline) is also adjustable. The back cushion is a flotation device. Hook and loop tape holds the cushion in place.

The restraint system has an inertia reel shoulder harness, lap belt, and crotch strap.

The left armrests lifts to a vertical position for entry and exit. The right armrest contains a folding work table.

The seat cushion is removable from the seat structure. Hook and loop tape holds the cushion in place.

The support base contains mechanisms for forward/aft and vertical movement. Four bolts attach the support base to the flight deck floor.

The control box has controls for fwd/aft, vertical, and recline adjustments. All the controls are manual. The seat has no electric controls.

Second Observer Seat

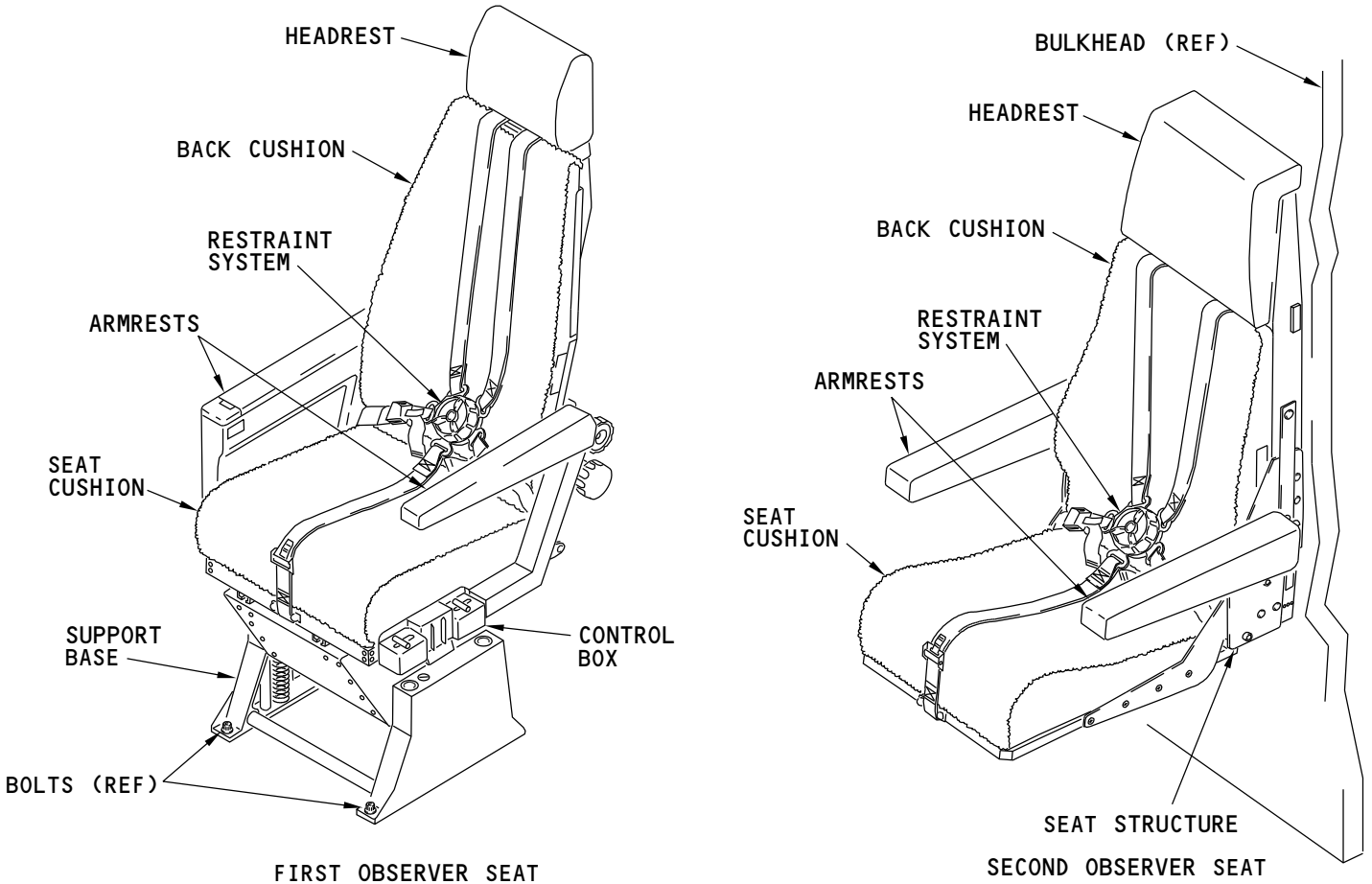
The second observer seat has these parts:

- Headrest
- Back Cushion
- Restraint system
- Armrests
- Seat cushion
- Seat structure.

The headrest, back cushion, and seat cushion are removable. Hook and loop tape holds the headrest and cushions to the seat structure. The back cushion is a flotation device.

The restraint system has an inertia reel shoulder harness, lap belt, and crotch strap.

The seat structure attaches to the aft bulkhead of the flight deck. The bottom of the seat and the armrests fold up for stowage. Straps (not shown) hold the seat bottom in the folded position. There are no adjustments on the second observer seat.



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FLIGHT COMPARTMENT - OBSERVER SEATS - INTRODUCTION

FLIGHT COMPARTMENT - OBSERVER SEATS - OPERATION

General

The second observer seat has no adjustments. To stow the seat, fold the armrests and seat bottom up. Fasten two retaining straps (not shown) to hold the seat bottom up.

The following adjustments are for the first observer seat.

Headrest

Pull up or push down on the headrest to adjust the vertical position. Move the top of the headrest forward or aft to adjust the headrest angle.

Recline

Pull back and hold the recline control to unlock the seat. Push aft on the seat back to increase the recline angle. Release the control to lock the seat back in the new position. To decrease the recline angle, pull back and hold the recline control. Let the seat back move toward the upright position. Release the control to lock the seat back in the new position.

Lumbar Support

Turn the upper lumbar support control to move the support up or down. Turn the lower lumbar support control to move the support forward or aft.

Armrests

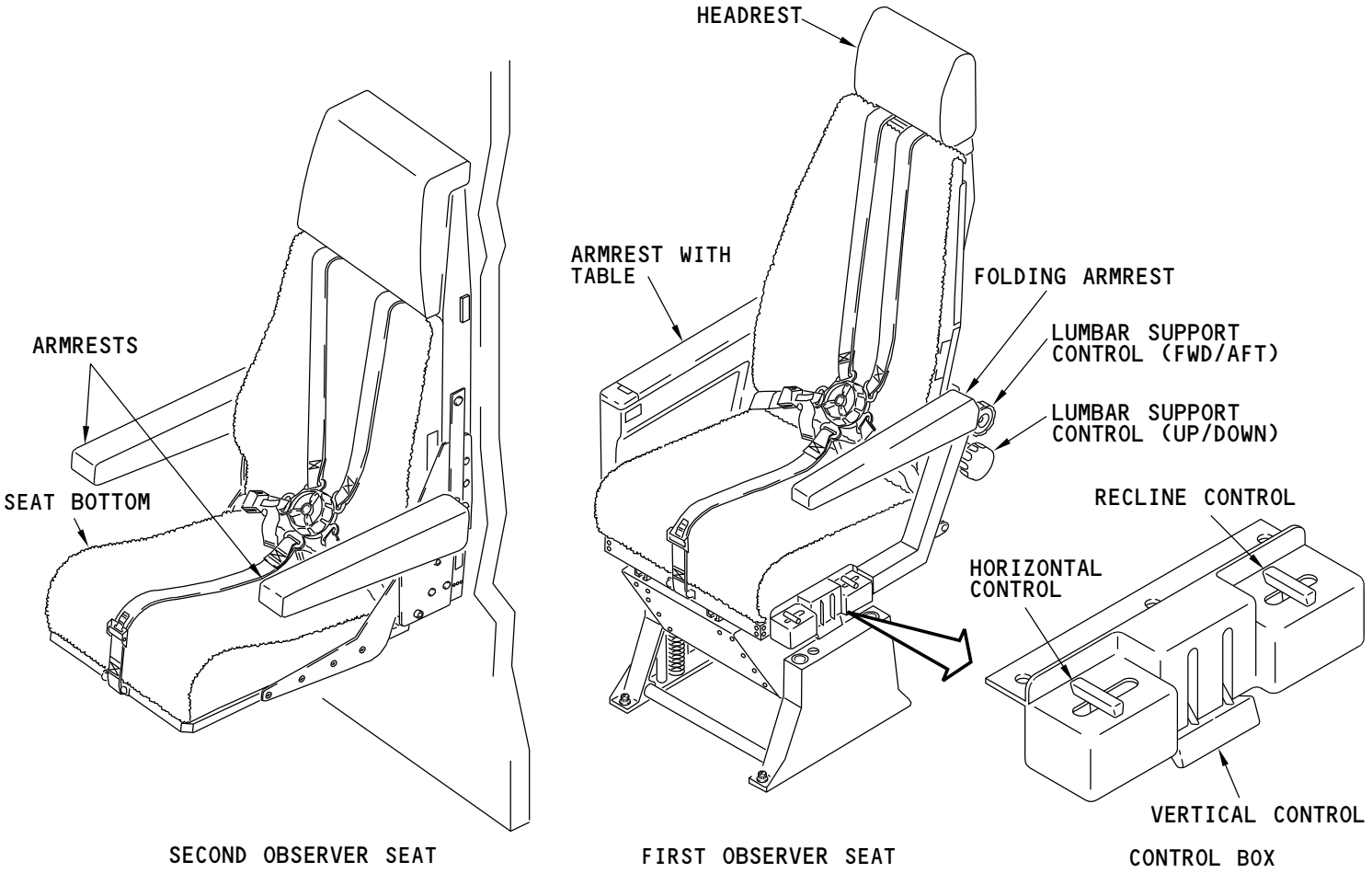
The left armrest folds to a vertical position for entry and exit. Lift up on the front of the armrest to fold it up. The right armrest contains a folding table. Open the top of the armrest, lift and unfold the table.

Horizontal

Pull back and hold the horizontal control to unlock the seat. Move the seat forward or aft. Release the control to lock the seat in the new position.

Vertical

Move some of your weight off the seat then pull up and hold the vertical control. Spring pressure pushes up on the seat. Move the seat up or down to the desired position. Release the control to lock the seat in the new position.



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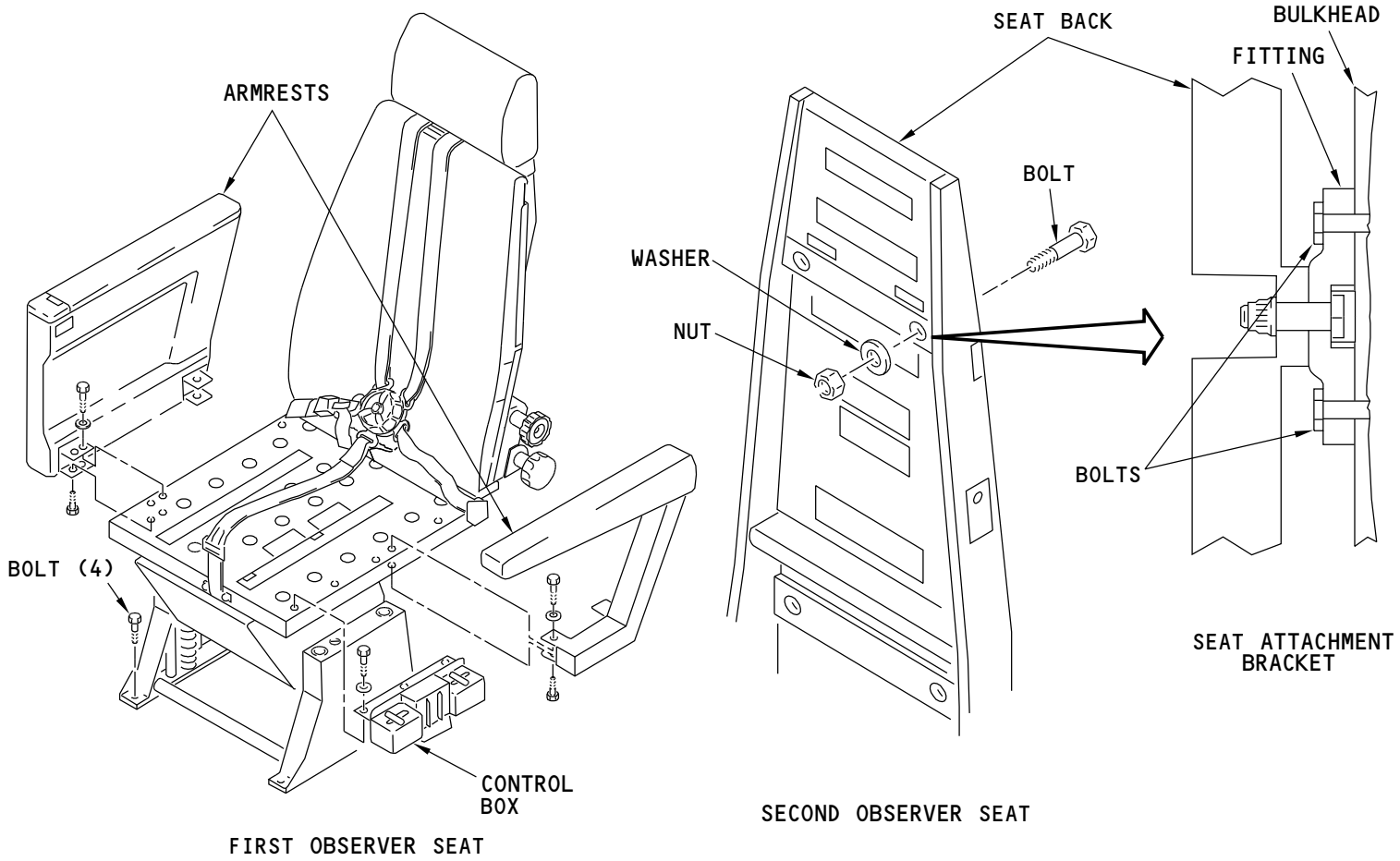
FLIGHT COMPARTMENT - OBSERVER SEATS - OPERATION

First Observer Seat

Four bolts attach the first observer seat to the floor. To move the seat through the flight deck door, remove both armrests and the control box from the seat. Do not disconnect the control cables from the box or the seat.

Second Observer Seat

Four bolts and fittings attach the second observer seat to the aft flight deck bulkhead. To remove the seat, remove the four nuts and washers. If you remove the fittings from the bulkhead, label the fittings so you can install them again in their original positions.



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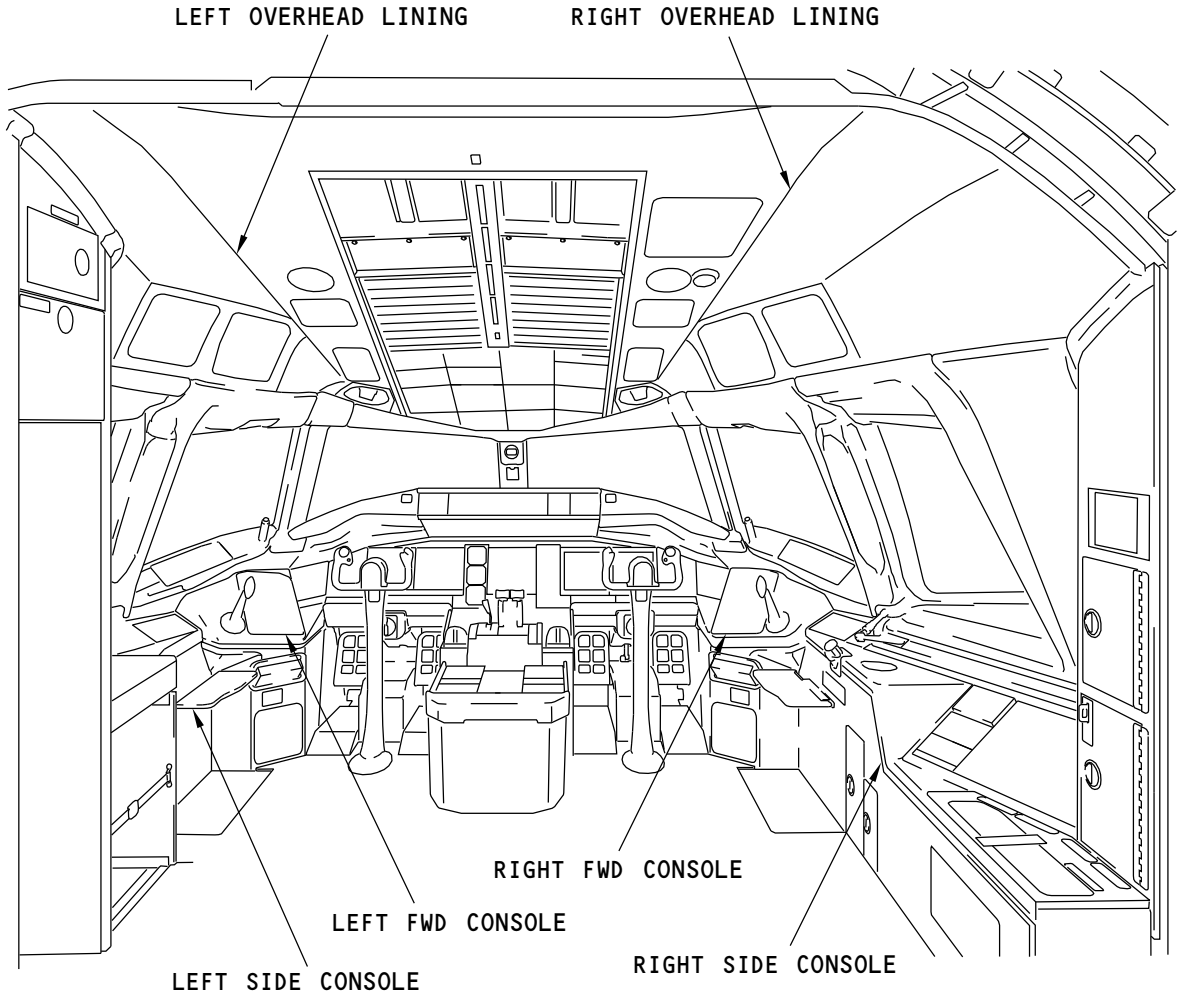
FLIGHT COMPARTMENT - OBSERVER SEATS - TRAINING INFORMATION POINTS

Physical Description

Flight compartment linings are made of fiberglass-faced honeycomb material. The inboard surfaces are a washable and scratch-resistant decorative laminate. Screws attach the linings to the structure.

The flight deck has these linings:

- Left and right overhead lining
- Left and right forward console
- Left and right side consoles.



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FLIGHT COMPARTMENT - FLIGHT COMPARTMENT LINING

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PASSENGER COMPARTMENT - INTRODUCTION

General

Passenger compartment equipment and furnishings include these items:

- Passenger compartment linings
- Service units
- Closets, partitions, and service outlets
- Seats
- Floor covering
- Stowage compartments.

Passenger Compartment Linings

The passenger compartment linings have a Tedlar lamination that makes them easy to clean. Passenger compartment linings include these panels:

- Main ceiling panel
- Lowered ceiling panel
- Doorway lining panel
- Overdoor panel
- Sidewall panel.

Service Units

Service units are above the passenger seats and include this equipment:

- Oxygen
- Reading lights
- Gasper outlets
- Passenger information signs.

Closets, Partitions, and Service Outlets

Closets are a place to keep coats, carry-on baggage, and emergency equipment. Partitions and class dividers make different seating areas in the passenger compartment. Service outlets supply electrical power for vacuum cleaners.

Seats

The passenger compartment equipment and furnishings include seats for passengers and flight attendants.

Floor Covering

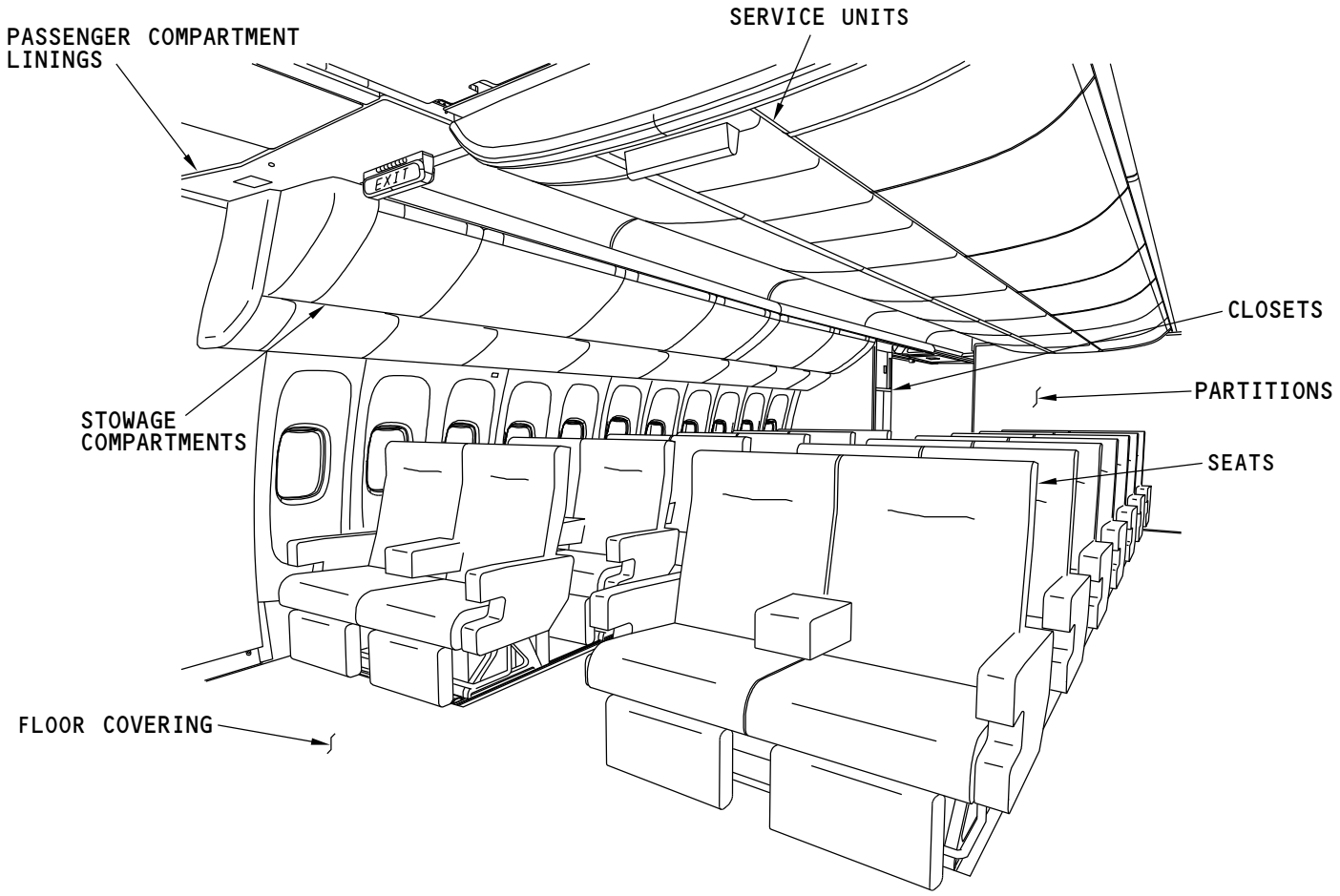
The passenger compartment floor is carpeted.

Stowage Compartments

These are the different kinds of stowage compartments:

- Outboard stowage bins
- Center stowage bins
- Floor-mounted stowage boxes
- Overhead stowage boxes.

Airlines move or install the passenger compartment interior equipment to meet their needs.



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PASSENGER COMPARTMENT - INTRODUCTION

PASSENGER COMPARTMENT - SIDEWALL PANELS

Location

The sidewall panels are on the outer sides of the passenger compartment on the walls.

Physical Description

The sidewall panels are made of a graphite composite that have a Tedlar lamination.

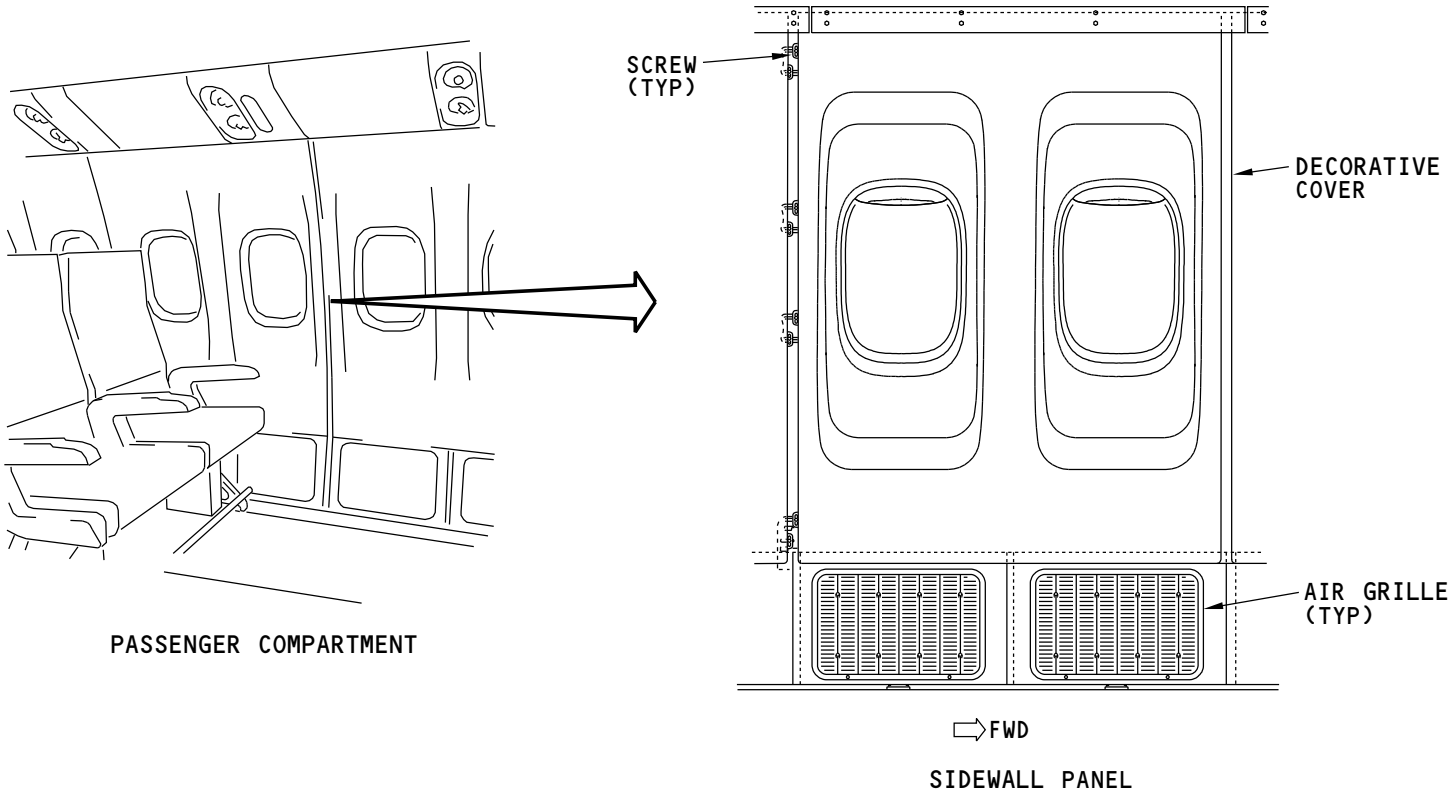
The panels have either zero, one, or two openings for the windows. They attach to the airplane structure with screws. Decorative covers go above the screws. The passenger service unit support holds the top of the panel.

The panels have air grilles. The air grilles attach to the panel with quarter turn fasteners.

Training Information Point

To remove a sidewall panel, you must do these steps:

- Remove the passenger seats
- Remove the air grilles
- Remove the decorative covers between the panels
- Pull the lower edge of the panel inboard to release the top of the panel
- Remove the panel.



M40376 S000616679_V1

PASSENGER COMPARTMENT - SIDEWALL PANELS

PASSENGER COMPARTMENT - WINDOW REVEALS

Location

The window reveals are in openings in the sidewall panels.

Physical Description

The reveal assembly has:

- A shade
- Engagement points for upper reveal support
- A seal
- An inner reveal
- A dust cover
- Latch access hole
- A latch.

The inner window reveal holds the dust cover. The dust cover is clear plastic.

The seal closes the space between the passenger window assembly and the dust cover.

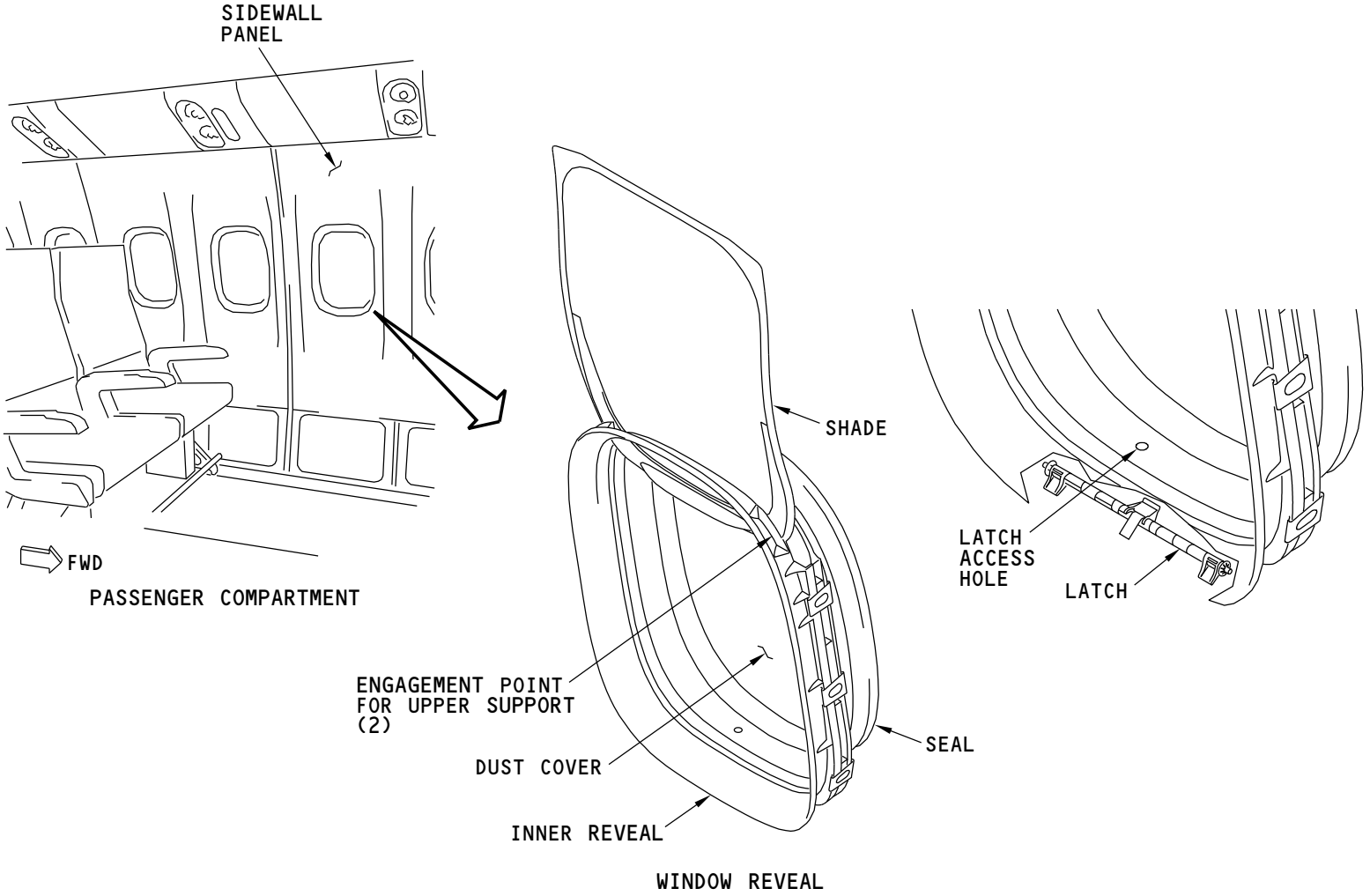
The outboard side of the sidewall panel has these components (not shown) that engage the window reveal:

- Shade track
- Upper reveal support
- Lower reveal support.

The upper reveal support engages the top of the window reveal assembly. The lower reveal support engages the latch. The shade track guides the movement of the shade.

Training Information Point

You put a pin type tool through the latch access hole to release the latch. Put the shade in the down position when you move the shade out of and into the sidewall.



PASSENGER COMPARTMENT - WINDOW REVEALS

PASSENGER COMPARTMENT - DOORWAY LINING

Location

The doorway linings are above, forward, and aft of each passenger entry door. The upper lining is above the door and the vertical linings are forward and aft of the door.

Physical Description

The doorway linings are made of a fiberglass composite material and have a Tedlar lamination.

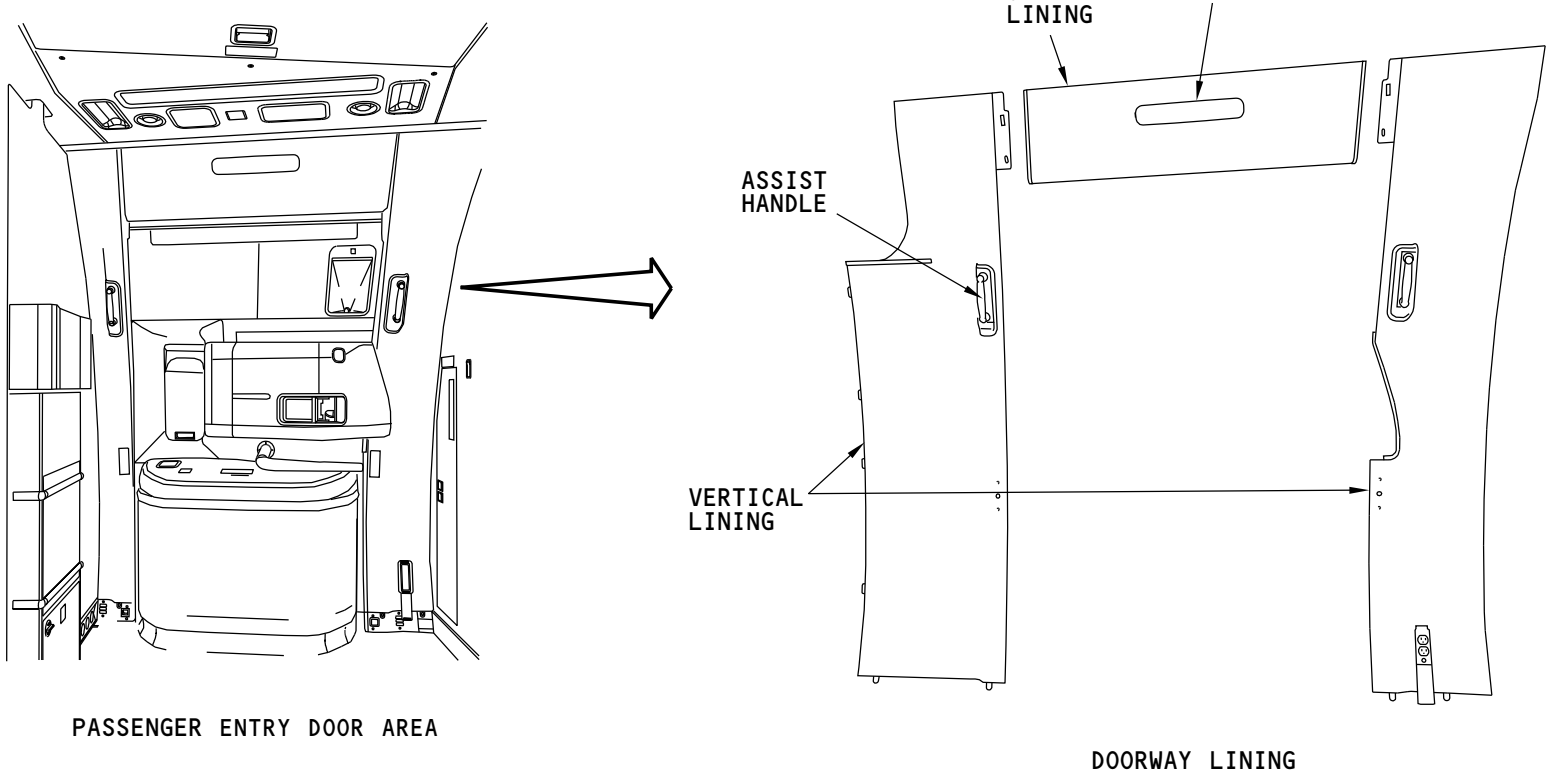
The upper lining has an exit sign. The vertical linings typically have an assist handle, an opening for an exit sign, and access panels (not shown).

The upper lining is held in place with bolts. The vertical linings are held in place with screws.

Training Information Point

To remove the upper lining you must remove an access panel for the bolts that is behind the upper lining. You get access to this panel when the door is open.

To remove the vertical linings you must first loosen the lining. To loosen the lining you must remove access panels on the inner sides of the doorway. The door must be open to do this. After you loosen the lining you must remove screws to remove the lining.



M40377 S000616680_V1

PASSENGER COMPARTMENT - DOORWAY LINING

PASSENGER COMPARTMENT - MAIN CEILING PANEL

Location

The main ceiling panels are above the aisles in the passenger compartment. They are on both sides of the conditioned air outlet grilles.

Physical Description

The panels are made of graphite that have a Tedlar lamination.

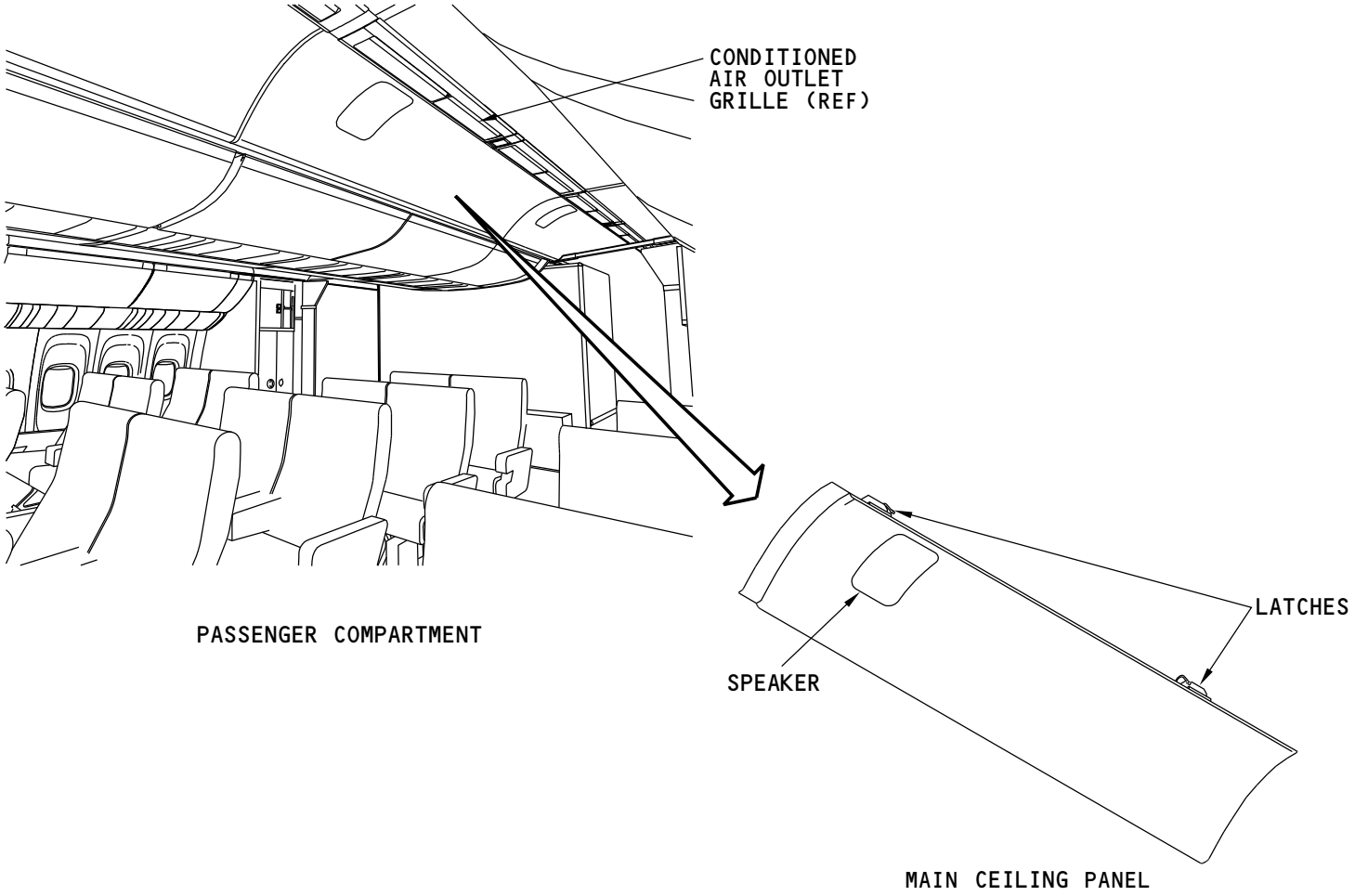
The main ceiling panels attach with lanyards (not shown), latches, and hinges (not shown). Some panels have speakers.

Training Information Point

For some panels you must disconnect the speaker wires to remove the panel.

To lower a main ceiling panel you do these things:

- Remove the air grilles between the inboard and outboard main ceiling panels
- Turn the latches above the panel, there is one latch at each end of the panel
- Let the panel hang by the lanyards
- Disconnect the lanyards
- Lift the panel out of the hinges.



M40378 S000616681_V1

PASSENGER COMPARTMENT - MAIN CEILING PANEL

PASSENGER COMPARTMENT - LOWERED CEILING PANEL

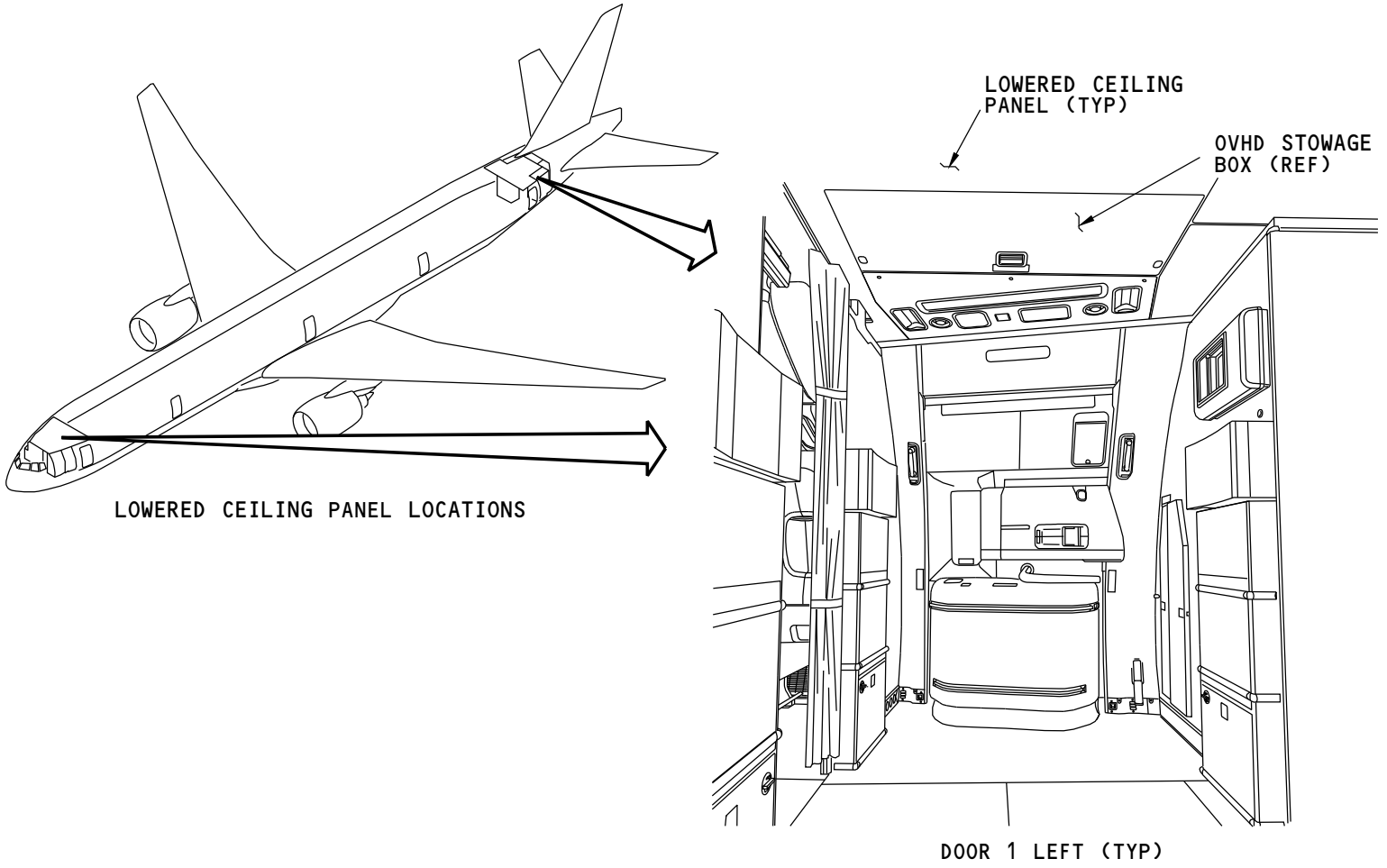
Location

The lowered ceiling panels are inboard from the overdoor panels.

Physical Description

The panels are made of a graphite composite material and have a Tedlar lamination.

The panels attach to the stowage bin rail or structure with bolts.



M40380 S000616683_V1

PASSENGER COMPARTMENT - LOWERED CEILING PANEL

PASSENGER COMPARTMENT - OVERDOOR PANEL

Location

The overdoor panels are on the ceiling, inboard from each passenger entry door.

Physical Description

The panels are made of a graphite composite material and have a Tedlar lamination.

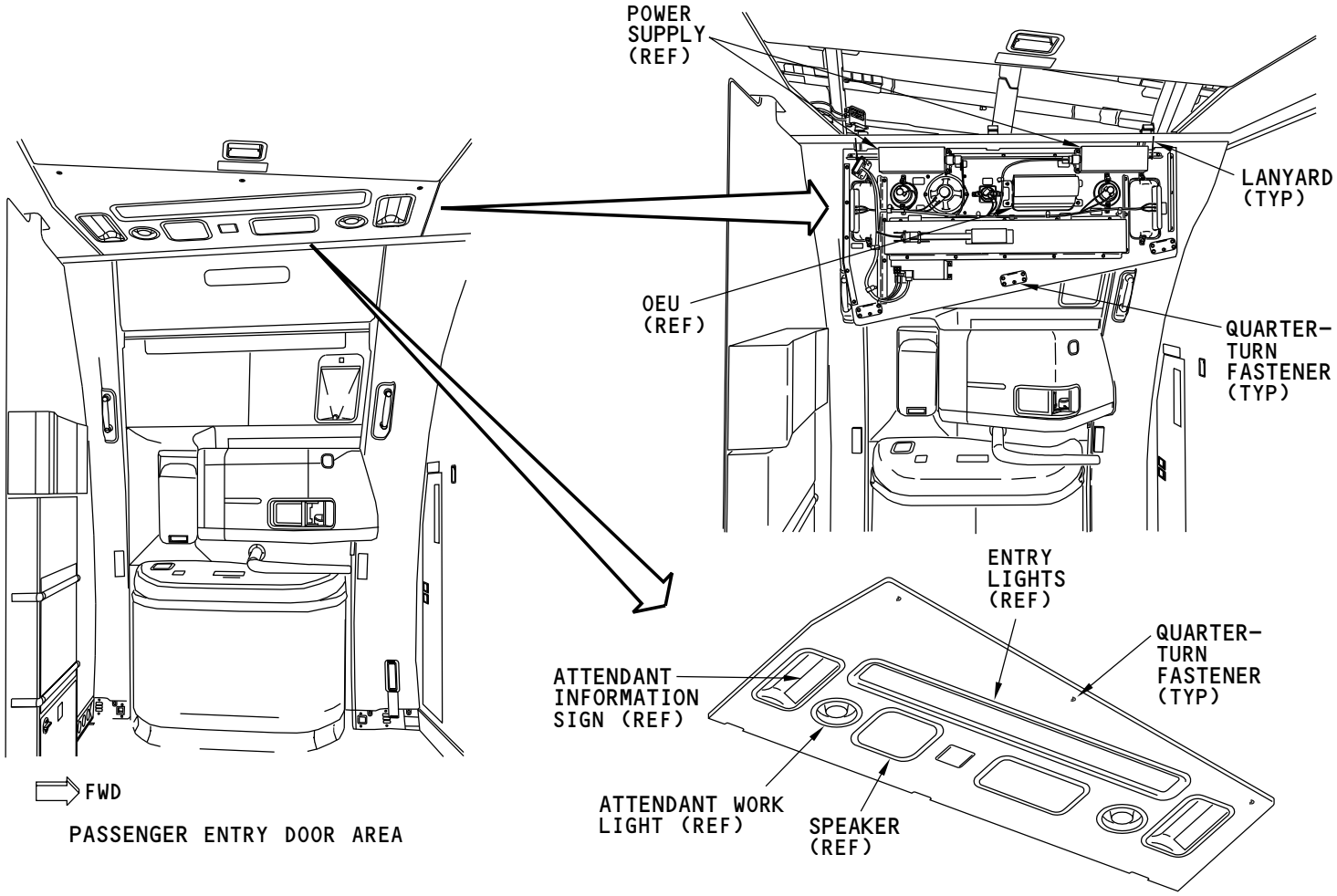
These components attach to the overdoor panels:

- Power supply for the emergency lights
- Lights
- Speaker
- Attendant information sign
- Overhead electronics unit (OEU).

The panels attach with two lanyards and quarter turn fasteners.

Training Information Point

To open an overdoor panel you turn the quarter turn fasteners and lower the panel. If you need to remove the overhead panel you disconnect the lanyards from the outboard side of the panel.



M40381 S000616684_V1

PASSENGER COMPARTMENT - OVERDOOR PANEL

PASSENGER COMPARTMENT - CONDITIONED AIR OUTLET GRILLE

Location

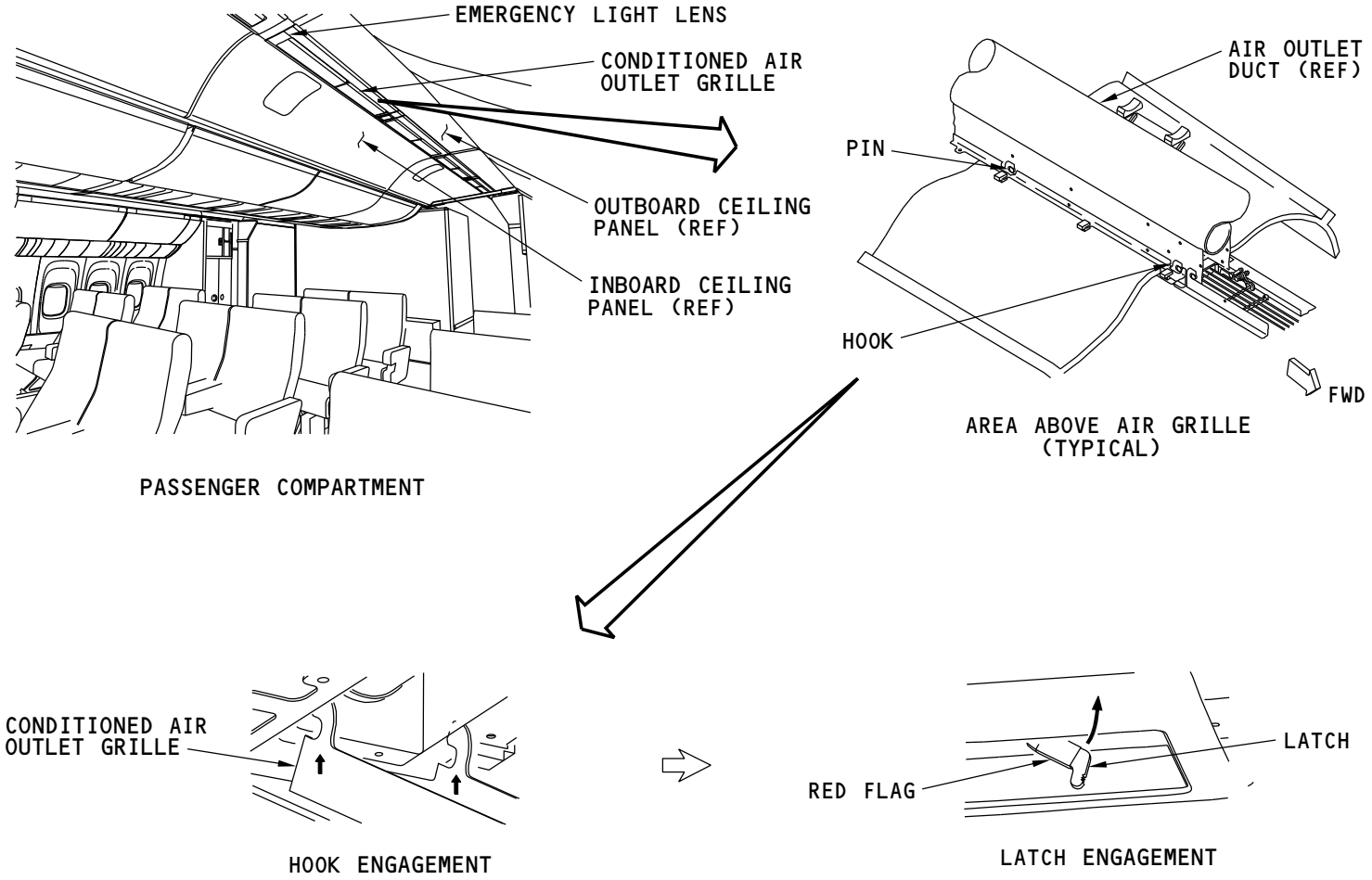
The conditioned air outlet grilles are above the aisles in the passenger compartment. They are between the inboard and outboard ceiling panels.

Physical Description

The grilles are made of plastic. Each grille has hooks and a latch to attach the grille to structure.

Training Information Point

To remove the air outlet grilles, remove the grille with the emergency light lens first. When you install the grilles, install the grille with the emergency light lens last. Also, make sure each hook on the grille is correctly engaged with the pin in the ceiling structure. The red flag on the latch will not show when you latch the grille correctly.



M40404 S000616714_V1

PASSENGER COMPARTMENT - CONDITIONED AIR OUTLET GRILLE

PASSENGER COMPARTMENT - PASSENGER SERVICE UNITS

General

These are the different types of passenger service units (PSUs):

- Gasper air
- Oxygen
- Spacer
- Reading Light
- Passenger information sign (not shown)
- Temperature sensor (not shown)
- Ambient noise sensor (not shown).

The PSUs may be installed in any order. This makes it easy for you to put the PSUs in sequence for different passenger compartment layouts.

Physical Description

The PSUs attach to the PSU rails with two or four latches. The latches are also the hinges for the PSUs.

Location

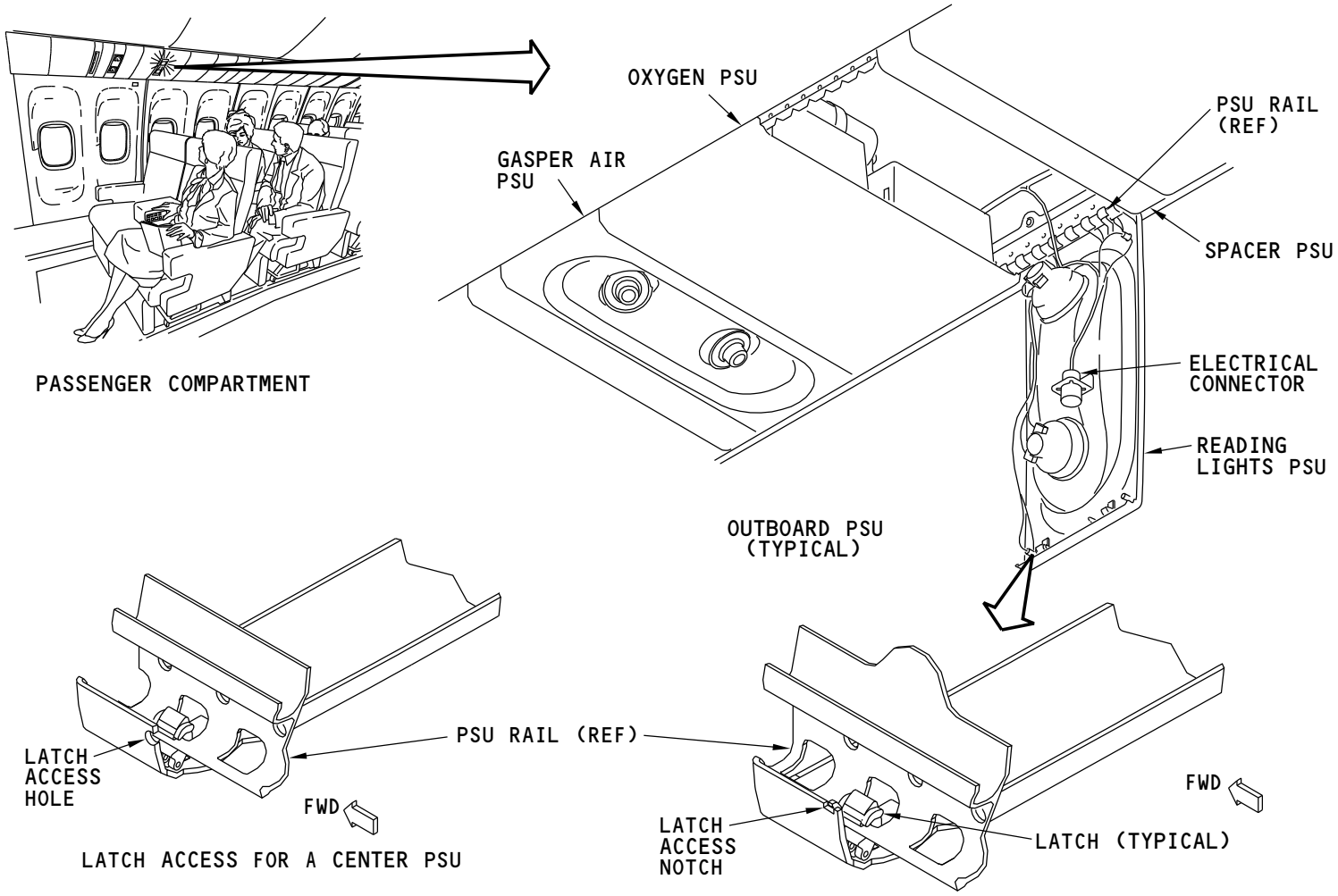
There are PSUs under the outboard and center stowage bins, above the passenger seats. There are also PSUs at attendant stations (not shown) and in lavatories (not shown).

Training Information Point

You use an allen wrench or a cylindrical rod to open a PSU. You put the tool through the access notch (outboard PSUs) or hole (center PSUs) and push on the latch. You can open the PSU from either side. To remove a PSU you open it from one side and then release the other latches from inside the PSU.

The outboard PSUs are interchangeable.

When you replace a PSU, make sure you install it so that the correct end points forward.



M40382 S000616685_V1

PASSENGER COMPARTMENT - PASSENGER SERVICE UNITS

PASSENGER COMPARTMENT - FULL-HEIGHT CLOSETS - INTRODUCTION

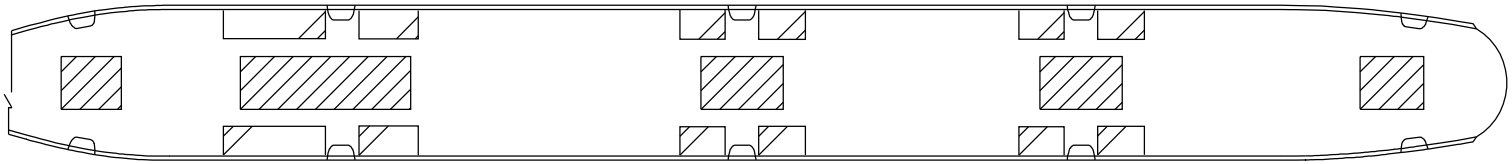
Physical Description

Full-height closets extend from the floor to the ceiling. Outboard closets have a curved side to fit against the side of the passenger compartment. Center closets have straight sides and go in the center of the passenger compartment. The closets have this equipment (not shown):

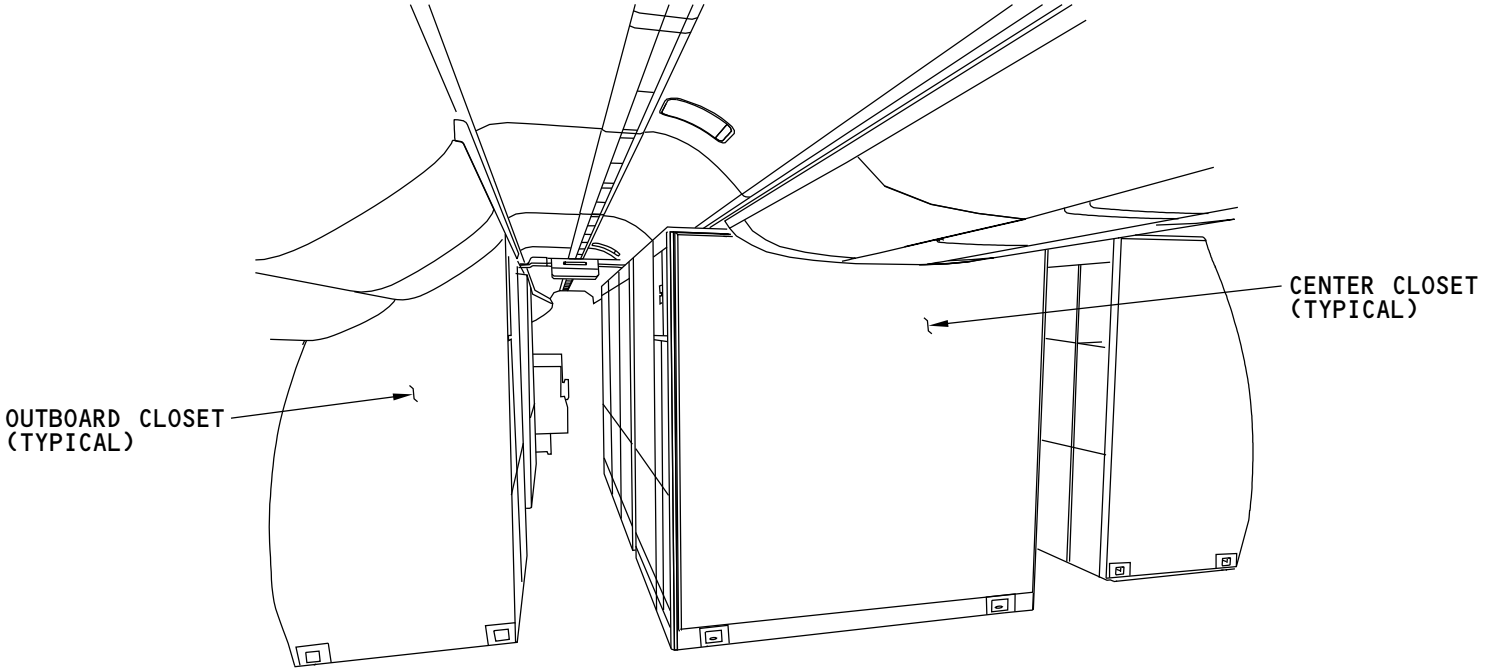
- Coat rods
- Lights
- Panel doors
- Magazine stowage compartments.

Location

You can install or move the closets anywhere within the flexibility zones.



CLOSET FLEXIBILITY ZONES



M40384 S000616687_V1

PASSENGER COMPARTMENT - FULL-HEIGHT CLOSETS - INTRODUCTION

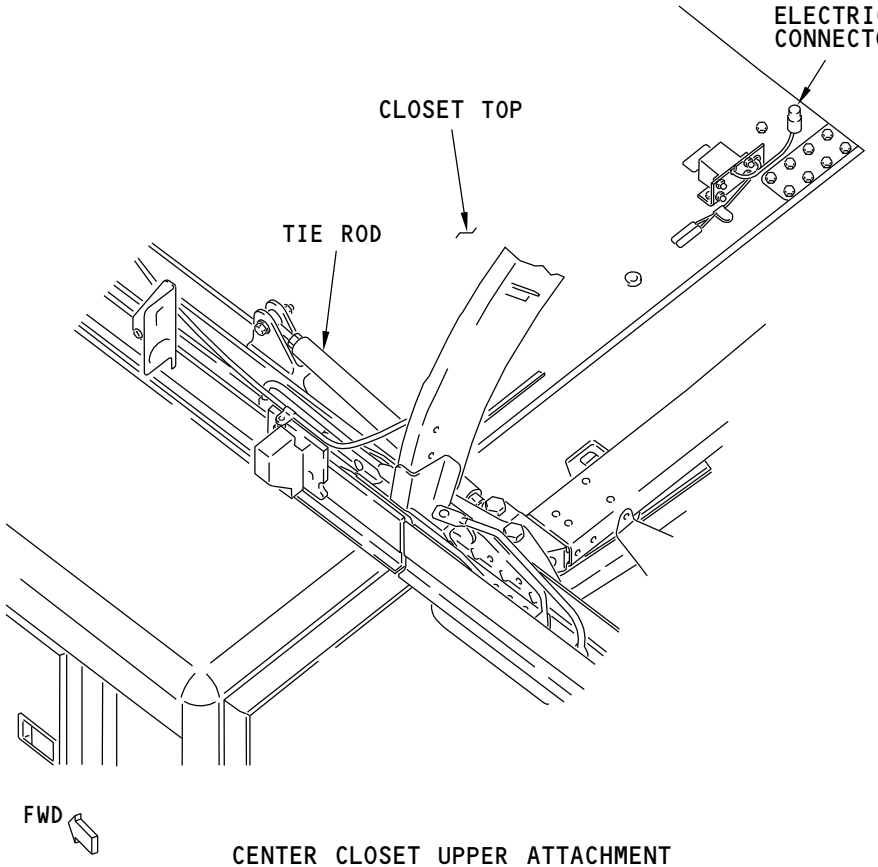
PASSENGER COMPARTMENT - FULL-HEIGHT CLOSETS - TRAINING INFORMATION POINTS

Training Information Point

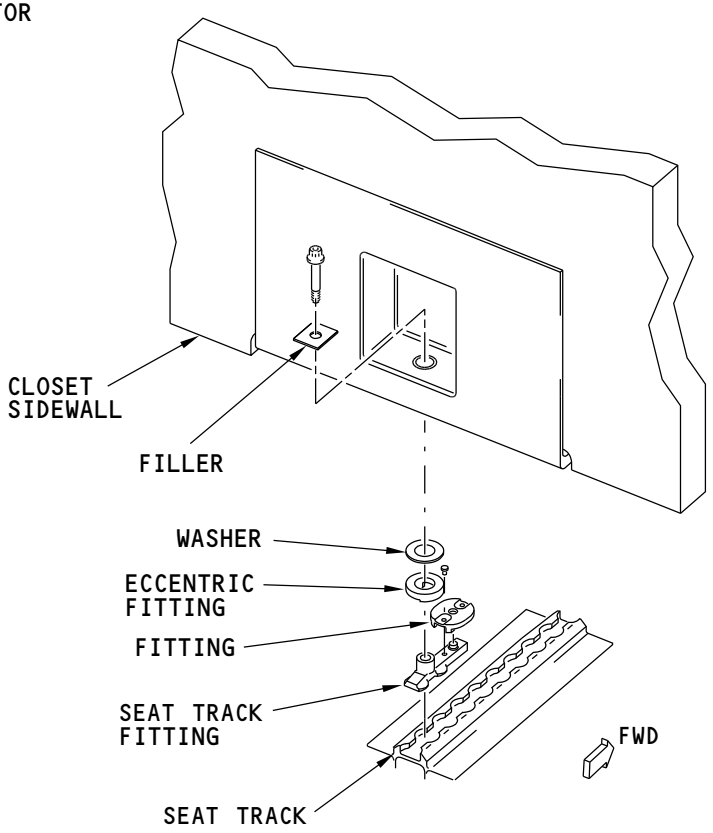
The top of the closet attaches to the airplane structure by a tie rod. You can adjust the length of the tie rod to make it fit correctly. The closet light wiring has a connector above the closet.

The bottom of the closet attaches at four corners to the seat tracks by bolts and fittings. Install up to three washers at a corner to level the closet. You can rotate the eccentric fitting 180 degrees to make it fit correctly.

The seat track fittings align to the seat track lip. Tolerance build-ups in the seat tracks can cause the seat track holes at the splice to not align correctly. The special fittings align to the seat track lip to permit installation of the fittings at the splice.



CENTER CLOSET UPPER ATTACHMENT



CLOSET LOWER ATTACHMENT (TYPICAL)

M40385 S000616688_V1

PASSENGER COMPARTMENT - FULL-HEIGHT CLOSETS - TRAINING INFORMATION POINTS

PASSENGER COMPARTMENT - PARTITIONS

Purpose

Partitions make a different area in the passenger compartment for the flight attendants. Folding attendant seats or tables attach to some partitions.

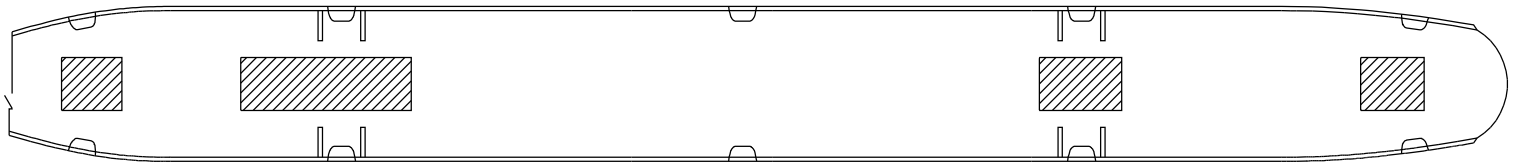
Location

You can install or move the partitions anywhere within the flexibility zones.

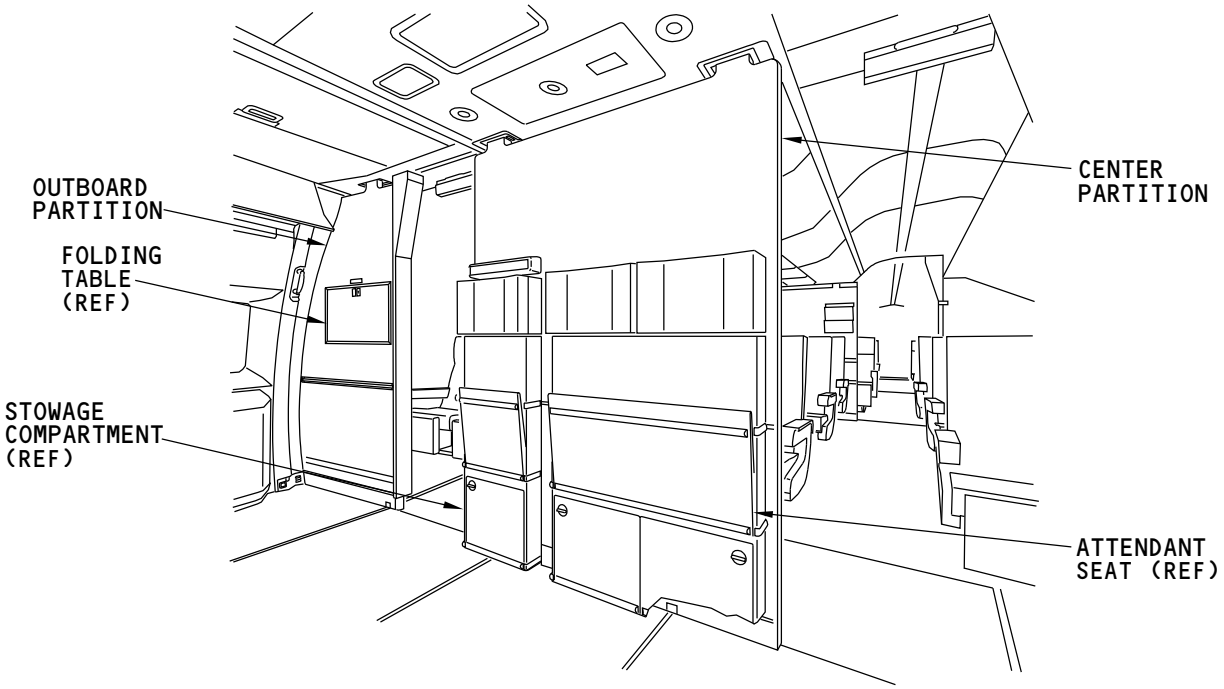
Physical Description

Partitions extend from floor to ceiling. Outboard partitions have a curved side to fit against the side of the passenger compartment. Center partitions have straight sides and go in the center of the passenger compartment. Partitions may include such items as:

- Folding tables
- Stowage compartments
- Wall-mounted attendant seats.



PARTITION FLEX ZONES



M40388 S000616691_V1

PASSENGER COMPARTMENT - PARTITIONS

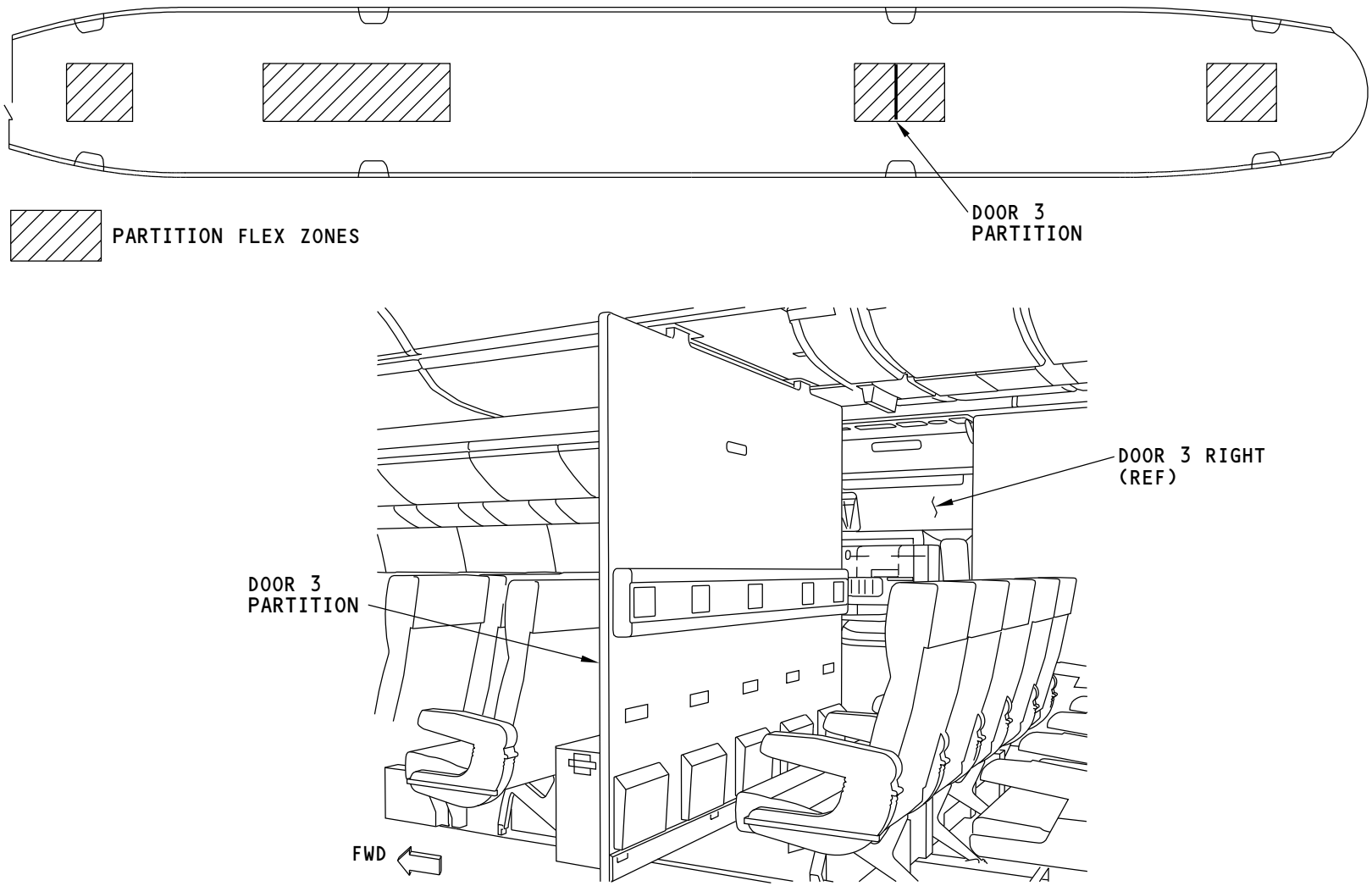
PASSENGER COMPARTMENT - DOOR 3 PARTITION

General Description

The partition at door 3 divides the economy class cabin into two areas for the flight attendants. It is a center partition that extends from the floor to the ceiling.

These items are on the partition:

- literature racks
- video screens.



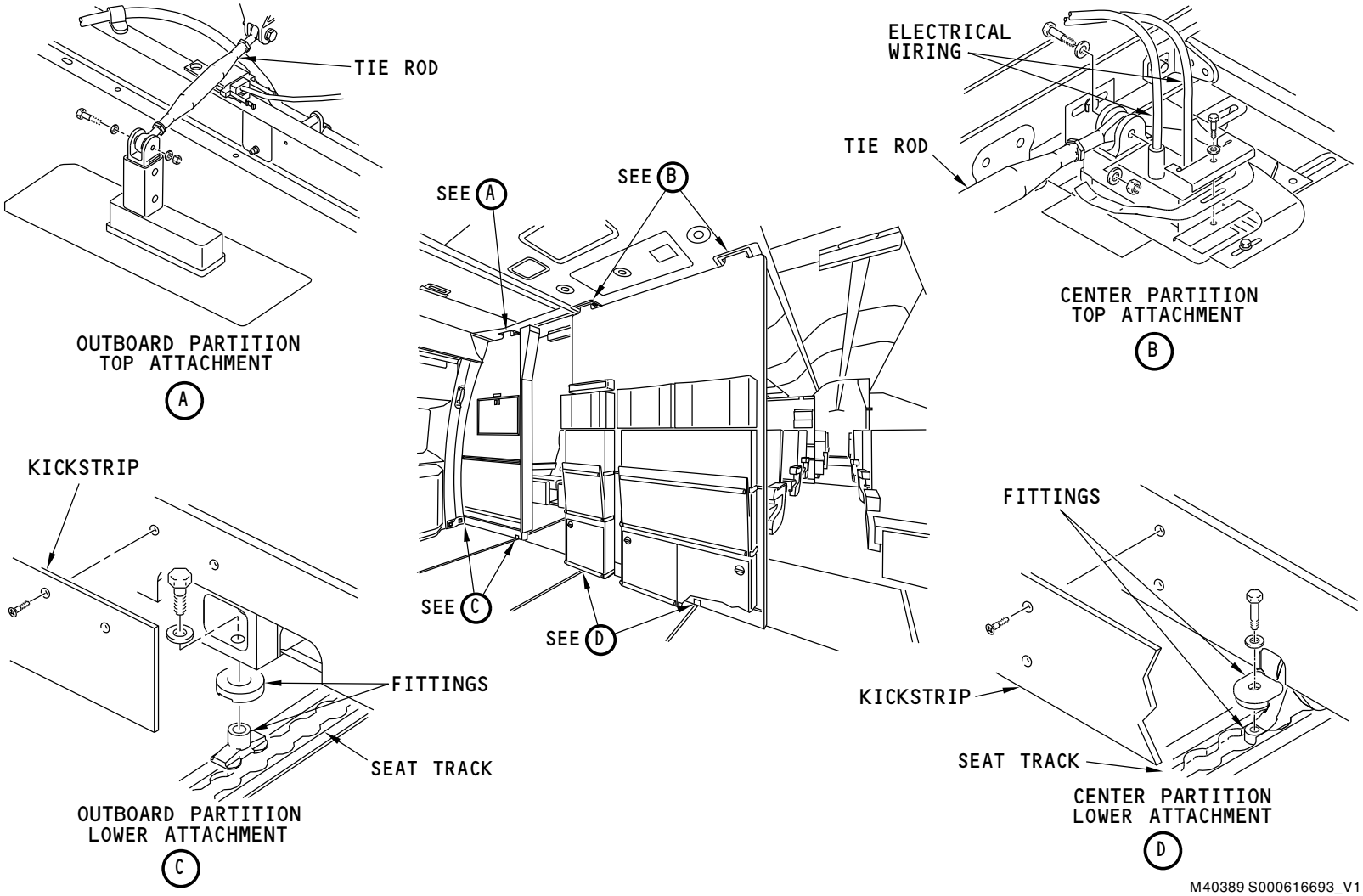
PASSENGER COMPARTMENT - DOOR 3 PARTITION

PASSENGER COMPARTMENT - PARTITIONS - TRAINING INFORMATION POINTS

Training Information Point

The top of the partitions attach to the airplane structure with tie rods. Adjust the length of the tie rod so it fits correctly. The electrical wiring has a connector above the partition.

The bottom of the partitions attach to the seat tracks with bolts and fittings.



M40389 S000616693_V1

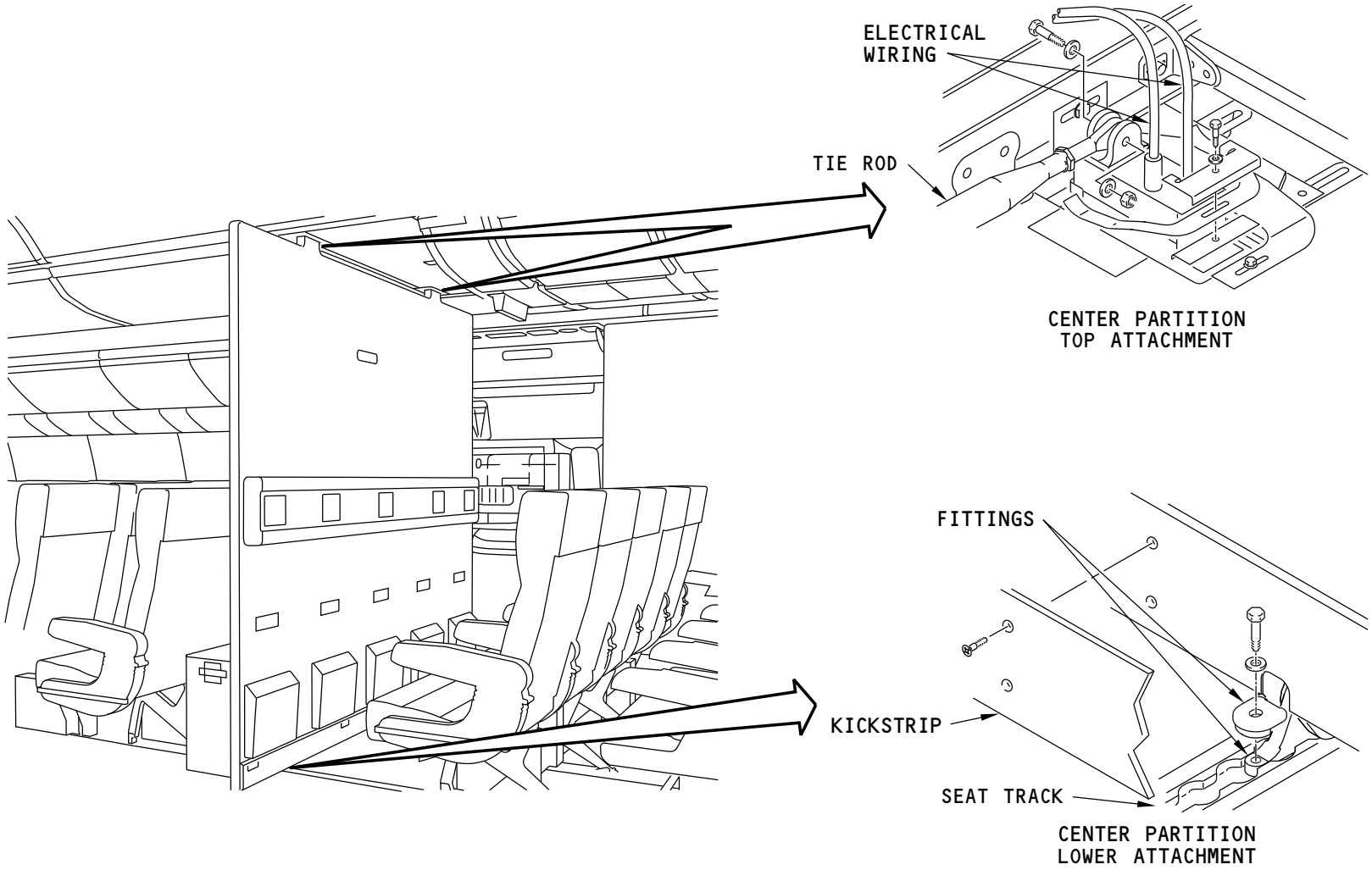
PASSENGER COMPARTMENT - PARTITIONS - TRAINING INFORMATION POINTS

PASSENGER COMPARTMENT - PARTITIONS - TRAINING INFORMATION POINTS

Training Information Point

The top of the partition attaches to the airplane structure with tie rods. Adjust the length of the tie rod so it fits correctly. The electrical wiring has a connector above the partition.

The bottom of the partition attaches to the seat tracks with bolts and fittings.



PASSENGER COMPARTMENT - PARTITIONS - TRAINING INFORMATION POINTS

PASSENGER COMPARTMENT - CLASS DIVIDERS

Purpose

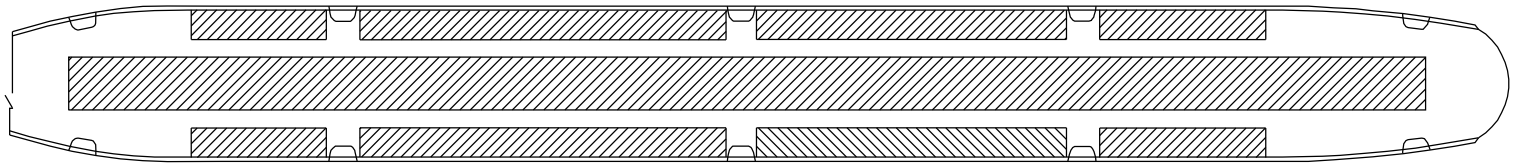
Class dividers isolate the passenger compartment seating areas. Literature pockets attach to some class dividers.

Location

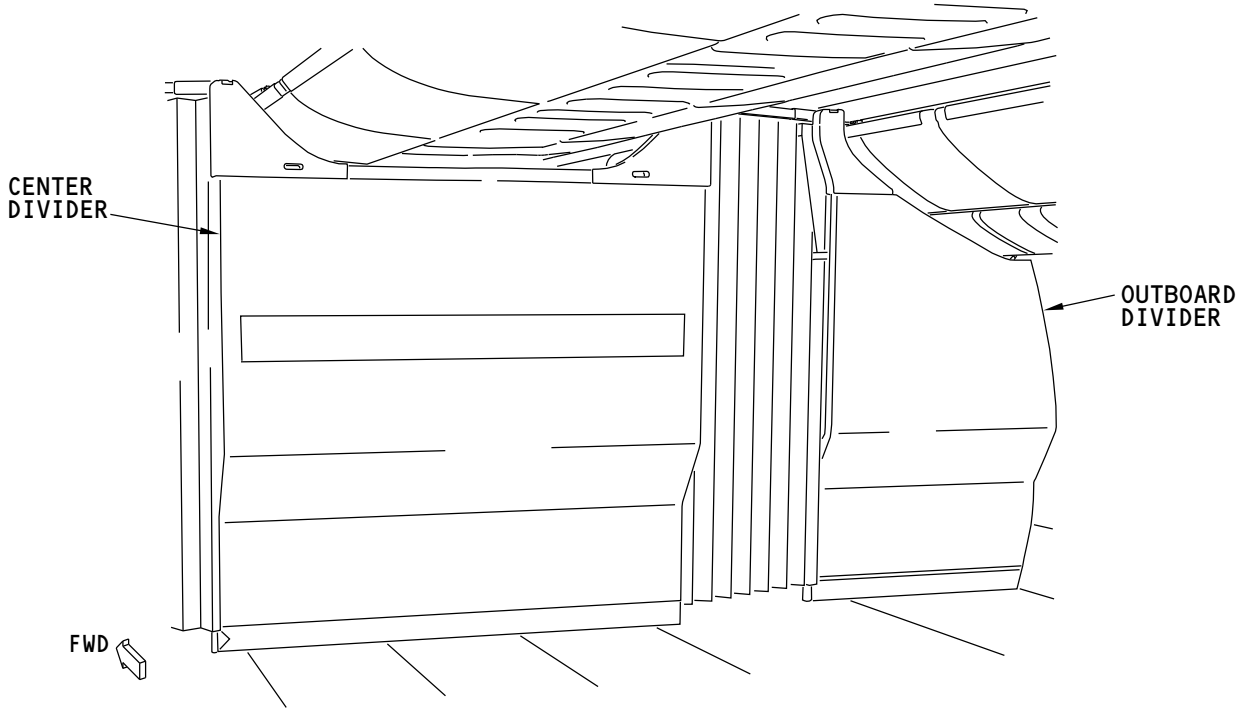
You can install or move the class dividers anywhere within the flexibility zones.

Physical Description

Dividers extend from the floor to the bottom of the stowage bins. Outboard dividers have a curved side to fit against the side of the passenger compartment. Center dividers have straight sides and go in the center of the passenger compartment.



DIVIDER FLEX ZONES



M40391 S000616696_V1

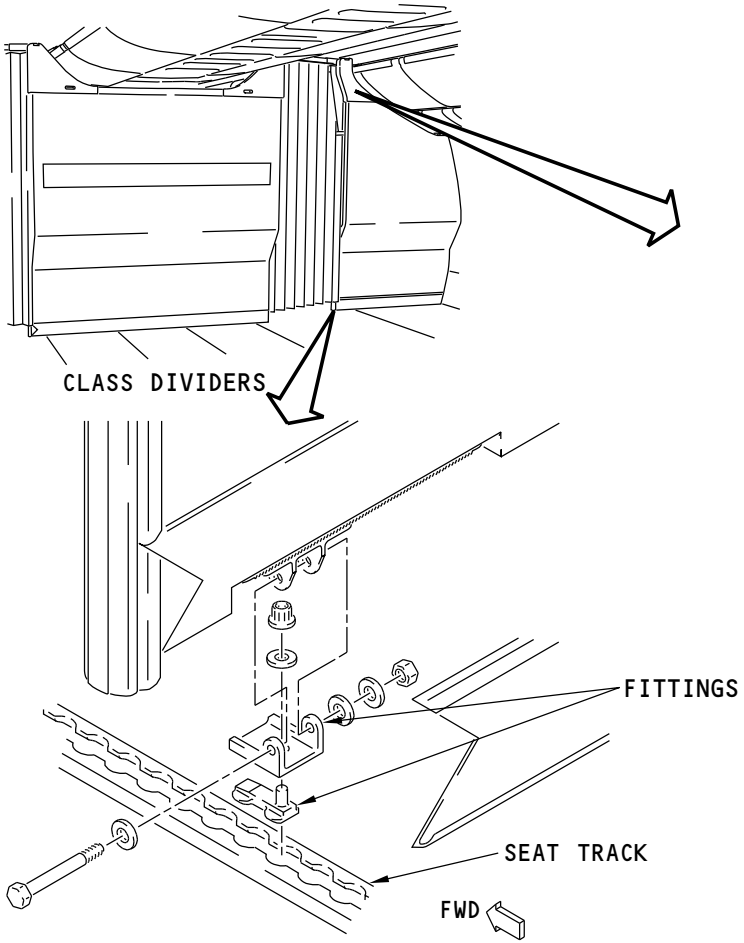
PASSENGER COMPARTMENT - CLASS DIVIDERS

PASSENGER COMPARTMENT - CLASS DIVIDERS - TRAINING INFORMATION POINTS

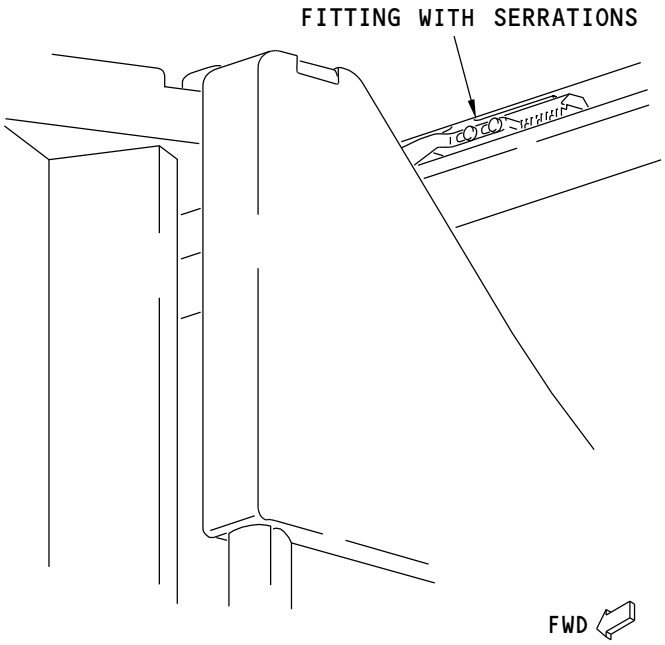
Training Information Point

The top of the class divider attaches to the stowage bin support structure with fittings. The fittings have serrations to make them adjustable.

The bottom of the class divider attaches to the seat tracks with bolts and fittings.



CLASS DIVIDER BOTTOM ATTACHMENT (TYPICAL)



CLASS DIVIDER TOP ATTACHMENT (TYPICAL)

M40392 S000616697_V1

PASSENGER COMPARTMENT - CLASS DIVIDERS - TRAINING INFORMATION POINTS

PASSENGER COMPARTMENT - CURTAIN AND TRACK

Purpose

Curtain isolate the passenger compartment seating areas. The passenger cabins use curtains as alternatives to movable partitions.

Location

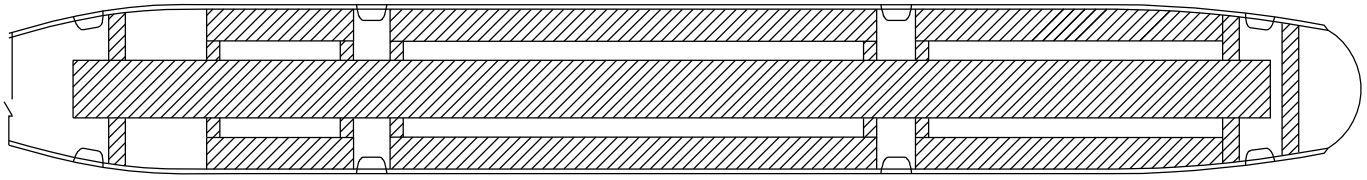
You can install or move the curtains anywhere within the flexibility zones at the lavatories, galleys, doors, seat classes, or crew rest areas.

Physical Description

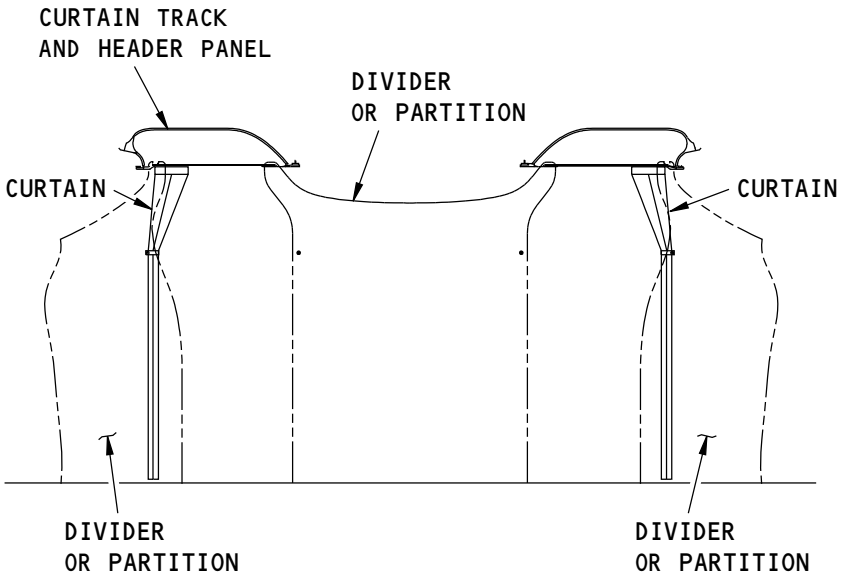
The curtains have different lengths and contours, but their installation, operation, and maintenance procedures are almost the same. Some curtains attach to monuments and some attach to curtain tracks. Curtain tracks are normally fastened to the ceiling assembly.

A typical curtain track assembly is made of extruded aluminum. Curtain track attaches to the top of the opening where the curtain is to be installed. The opening in the curtain track usually points toward the floor. In some installations, the curtain track attaches to the wall and the curtain hangs at a ninety-degree angle. Curtain tracks may have a decorative cushion attached with adhesive.

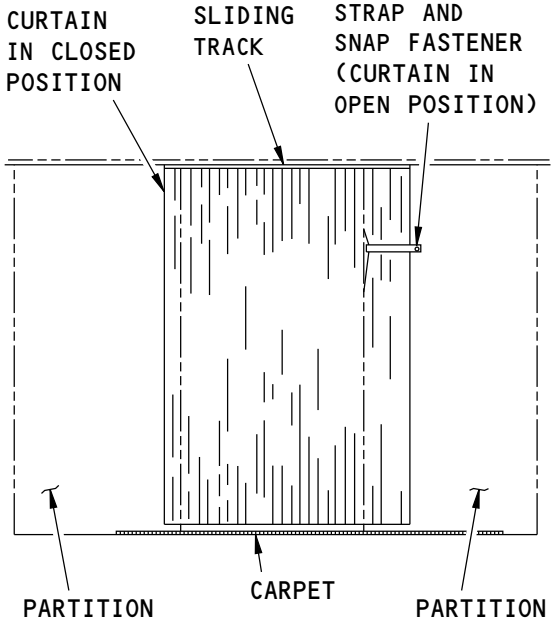
A tieback strap at the side of the curtain holds the curtain fully open. The strap is put around the open curtain and held with a snap fastener. Curtains must be fully open and held with the strap for takeoff and landing.



CURTAIN FLEX ZONES



CURTAIN TRACK
(EXAMPE)



CURTAIN
(EXAMPE)

2294081 S0000519785_V2

PASSENGER COMPARTMENT - CURTAIN AND TRACK

PASSENGER COMPARTMENT - ELECTRICAL OUTLETS

Purpose

Electrical outlets supply electrical power inside the airplane for ground service equipment and necessary in-flight equipment.

Physical Description

There are two usual kinds of electrical outlets:

- 115 volts AC single phase power at 400 Hertz
- 28 volts DC power.

There are outlets that give other voltages and frequencies. A placard on the outlet cover identifies the voltage and frequency at that location.

Location

Electrical outlets are at these locations:

- Main equipment center
- Passenger compartment
- Flight compartment.

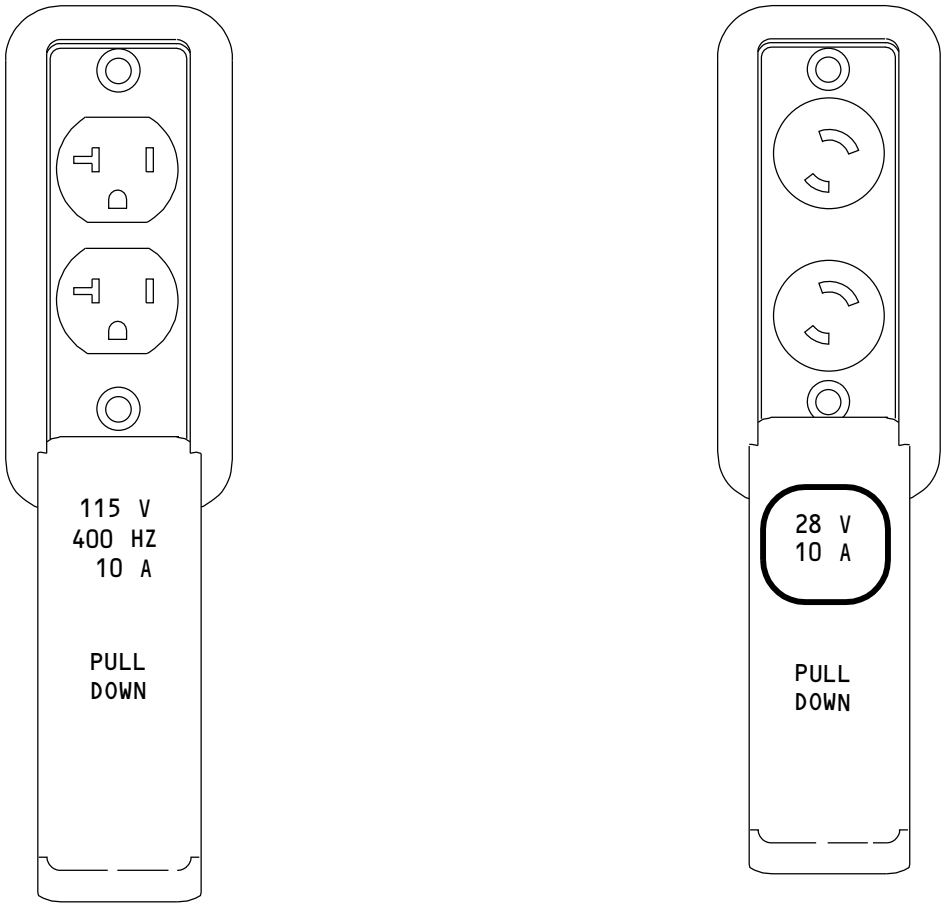
There is one 115v AC electrical outlet in the main equipment center.

The passenger compartment has 115v AC electrical outlets near the floor, adjacent to some passenger entry doors.

The flight compartment has a 115v AC electrical outlet and a 28v DC outlet at the lower right side of the observer console.

Electrical outlets can also be at other locations in the passenger compartment.

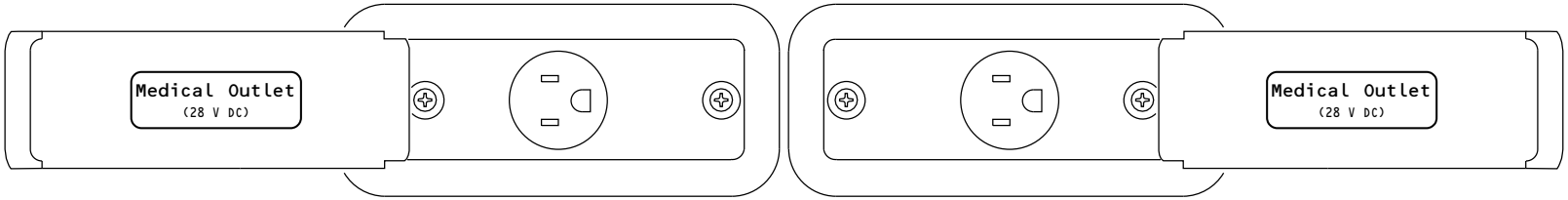
Some electrical outlets are for use with medical equipment. A placard at these outlets identifies them for medical equipment use.



ELECTRICAL OUTLETS
(TYPICAL)

M40393 S000616698_V1

PASSENGER COMPARTMENT - ELECTRICAL OUTLETS



ELECTRICAL OUTLETS
(EXAMPLE)

W26719 S0000119877_V2

PASSENGER COMPARTMENT - ELECTRICAL OUTLETS

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PASSENGER COMPARTMENT - OUTBOARD STOWAGE BIN

Purpose

The outboard stowage bin supplies a location above the passenger for carry-on baggage.

Physical Description

The outboard stowage bin module has these components:

- Snubber (2)
- Latch
- Bin
- Strongback assembly.

The outboard stowage bin modules have four lengths:

- 21 inches
- 35 inches
- 42 inches
- 84 inches.

The 84 inch module has two stowage bins that attach to one strongback assembly. The other sizes have only one bin that attaches to the strongback assembly.

Location

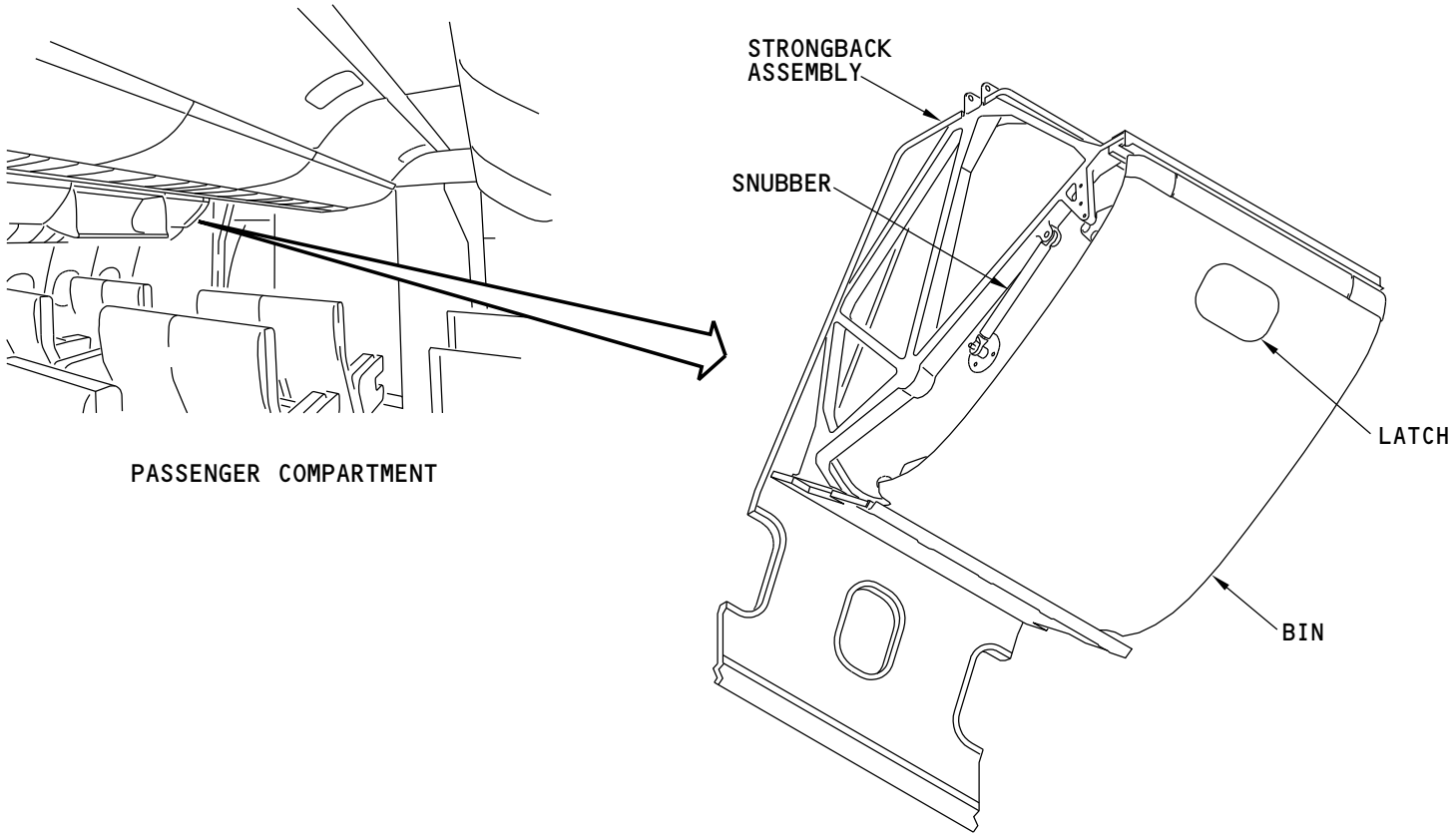
The outboard stowage bins are above the seats outboard of the aisle.

Functional Description

A latch on the face of the stowage bin lets you open the stowage bin. The stowage bin has two snubbers. The snubbers control the speed at which you can open the stowage bin. The bin latches when you close it.

Training Information Point

You can remove the stowage bin from the module and leave the strongback assembly in the airplane. Or you can remove the module with the strongback from the airplane.



M40396 S000616704_V1

PASSENGER COMPARTMENT - OUTBOARD STOWAGE BIN

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PASSENGER COMPARTMENT - CENTER STOWAGE BIN

Purpose

The center stowage bin supplies a location above the passengers for carry-on baggage.

Physical Description

The center stowage bins are part of a module. All modules have two stowage bins. The modules are 21 inches (53.3 cm) high and 64 inches (162.6 cm) wide. These are the three different lengths and weights for the modules:

- 21 inches (53.3 cm), 56 pounds (20.9 kg)
- 35 inches (89 cm), 67 pounds (25 kg)
- 41 inches (104.1 cm), 73 pounds (27.25 kg).

Each module has these assemblies:

- Trough
- Linkage
- Bin (2).

The trough assembly attaches to the airplane support structure. The trough holds the linkage, the center passenger service unit (PSU) rails, and two stowage bins. The trough has these parts:

- Panels
- Upper snubber (4)
- Center PSU rail (2)
- Guide tracks (4)
- Guide pin (4)
- Stop (4)
- Latch pin (4).

A forward and aft set of linkage connects the bins to the trough assembly. The linkage also controls the movement of the bin when you open or close the bin. Each set of linkage has these parts:

- Upper mechanism - torque tube and the forward and aft upper links
- Idler link
- Spring
- Drive link
- Lower link
- Lower snubber.

The stowage bins have attach points on each end. The bins also have a latch assembly.

Location

The center stowage bins are above the center seats.

Functional Description

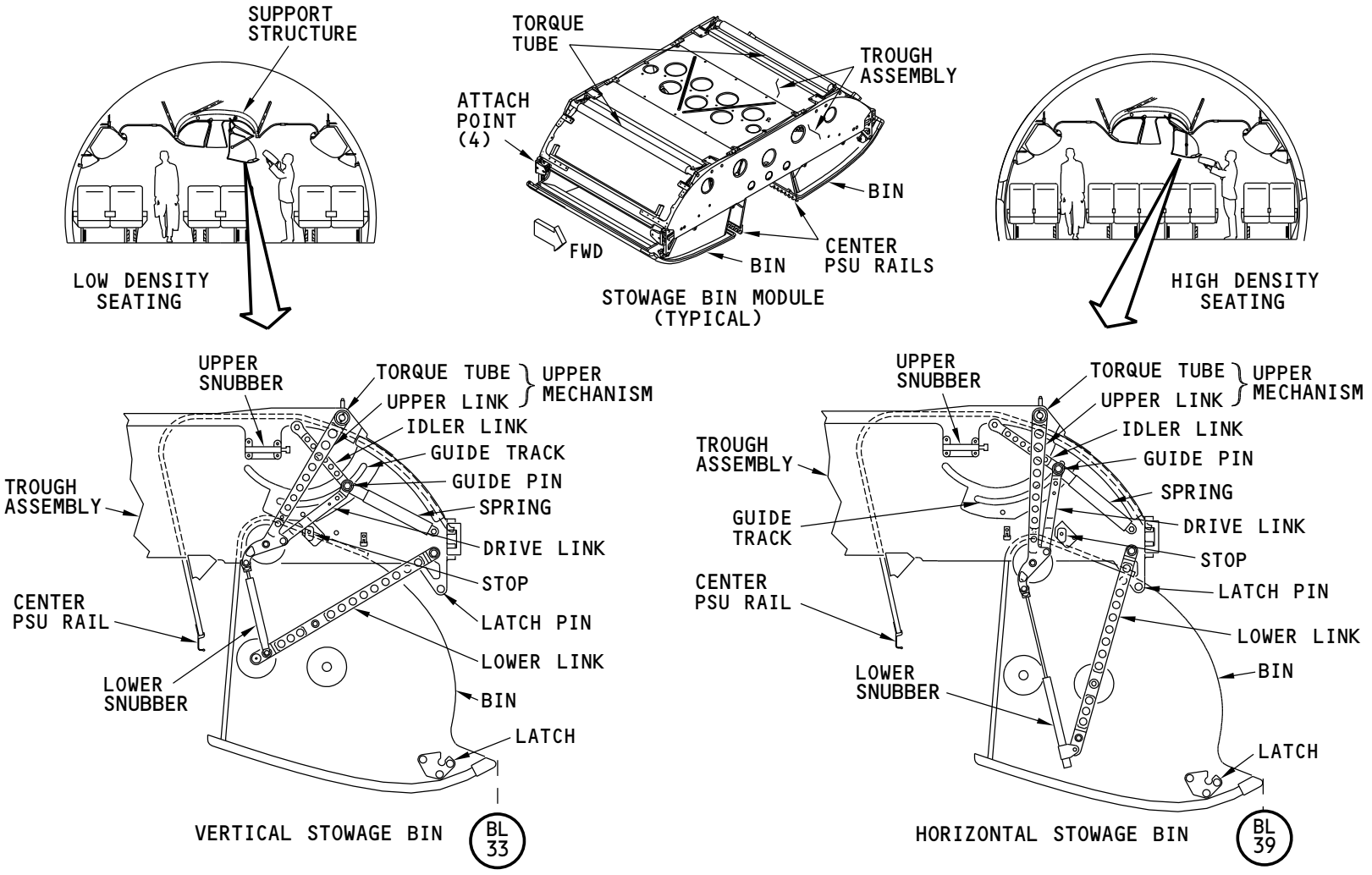
A latch release (not shown) on the face of the stowage bin lets you open the stowage bin. The upper and lower links connect the bin to the trough assembly. These components control the movement of bin when you open or close it:

- Idler links
- Guide tracks
- Guide pins
- Drive link.

The stowage bin has four snubbers, two lower and two upper. The lower snubbers control the speed at which you can open the stowage bin. The upper snubbers control the speed at which you can close the stowage bin. The springs help you close the stowage bin. The bin latches when it is full closed.

PASSENGER COMPARTMENT - CENTER STOWAGE BIN

The center stowage bins in low density seating areas open vertically. The center stowage bins in high density seating areas open horizontally. The bins that open horizontally extend further outboard than the vertical bins when open. This makes it easier to put baggage in the bins. The difference between the vertical and the horizontal stowage bin is the length and attachment point of the lower snubber and the location of the stop.



M40397 S000616705_V1

PASSENGER COMPARTMENT - CENTER STOWAGE BIN

PASSENGER COMPARTMENT - STOWAGE BIN SNUBBER

Purpose

The stowage bin snubber controls the rate at which a stowage bin opens or closes.

Outboard Stowage Bin

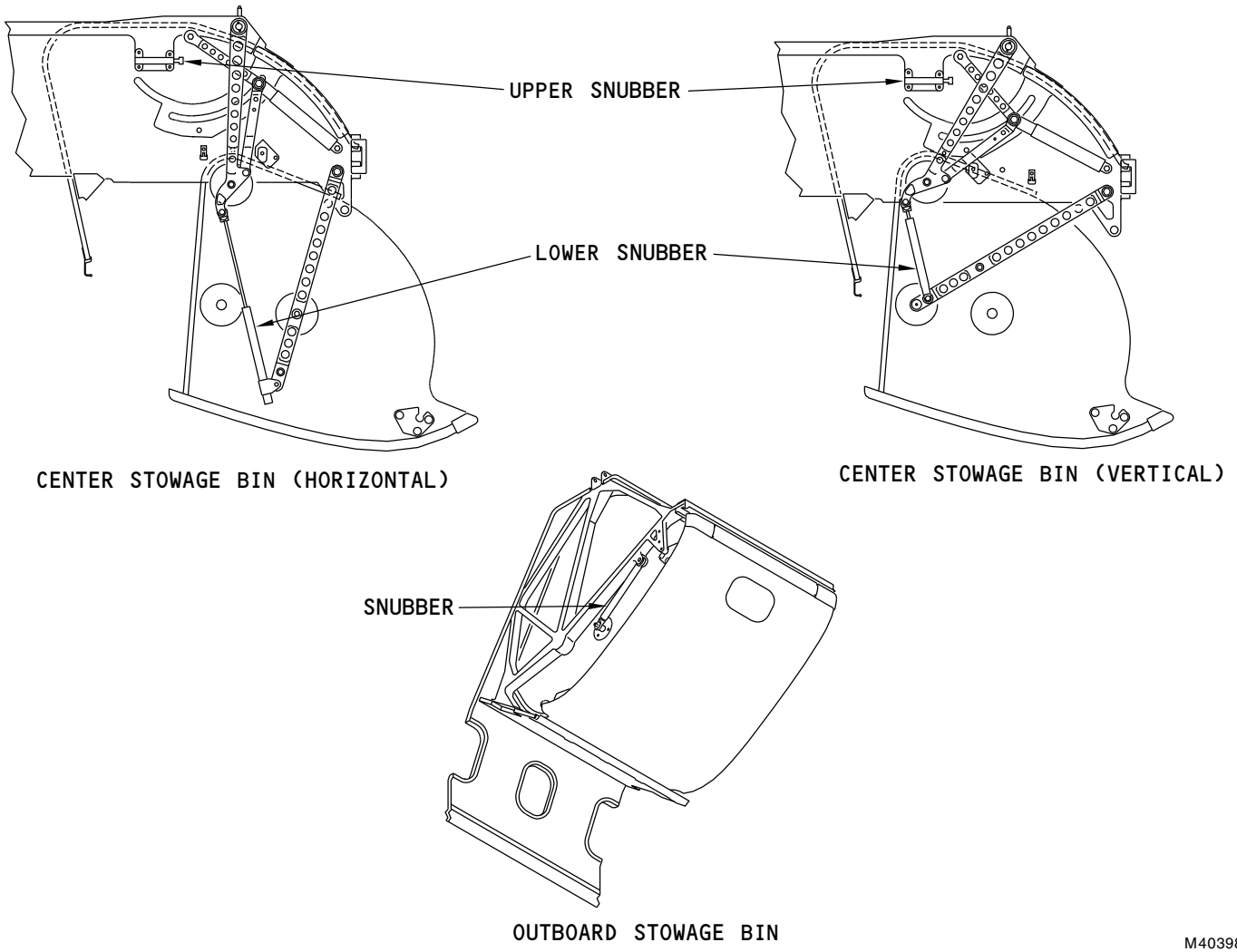
Two snubbers control the rate at which a outboard stowage bin opens.

Center Stowage Bin

Four snubbers control the rate at which a center stowage bin opens and closes. Two lower snubbers control the speed the stowage bin opens. Two upper snubbers control the speed a stowage bin can close.

Location

A snubber is at each end of the outboard stowage bin. Two snubbers are at each end of the center stowage bin.



PASSENGER COMPARTMENT - STOWAGE BIN SNUBBER

PASSENGER COMPARTMENT - STOWAGE BIN LATCH

Purpose

A stowage bin latch holds a stowage bin closed. You release the latch to open a stowage bin.

Physical Description

Stowage bin latch has these components:

- End assembly(2)
- Torque tube (2)
- Actuator
- Emergency release (2)
- Bezel.

Location

Stowage bin latch is on the face of these stowage compartments

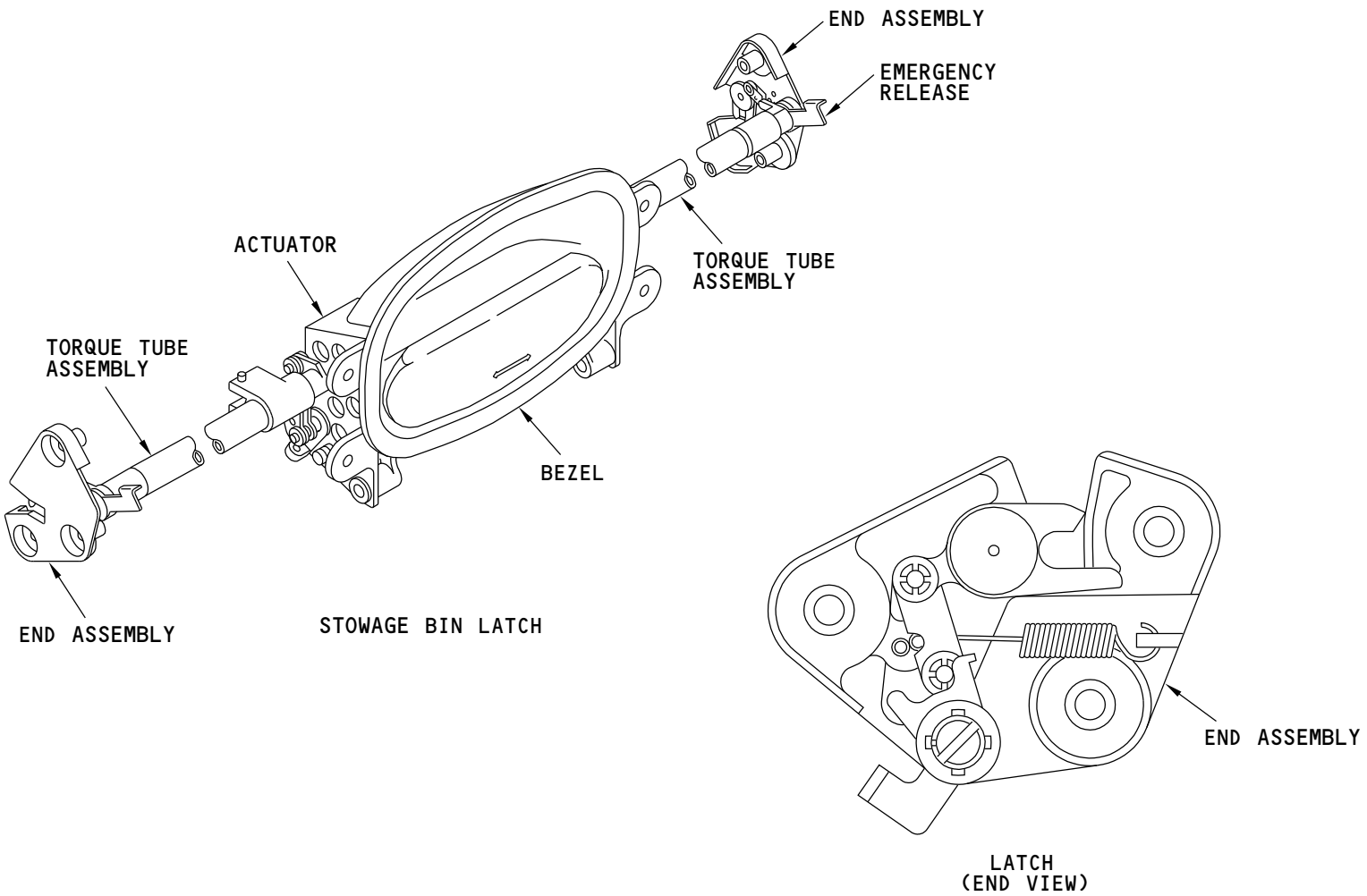
- Outboard stowage bins
- Center stowage bins
- Overhead stowage box.

Functional Description

You pull on the bezel to unlatch the latch. The bezel turns the actuator which is attached to the torque tubes. The torque tubes then turns the end assembly and allow the latch to unlatch.

Training Information Point

The bezel extends past the stowage bin if it is not latched at both ends. You can see a red decal if the stowage bin is not latched. The emergency release lets you externally open the stowage bin if the actuator does not operate correctly.



M40399 S000616707_V1

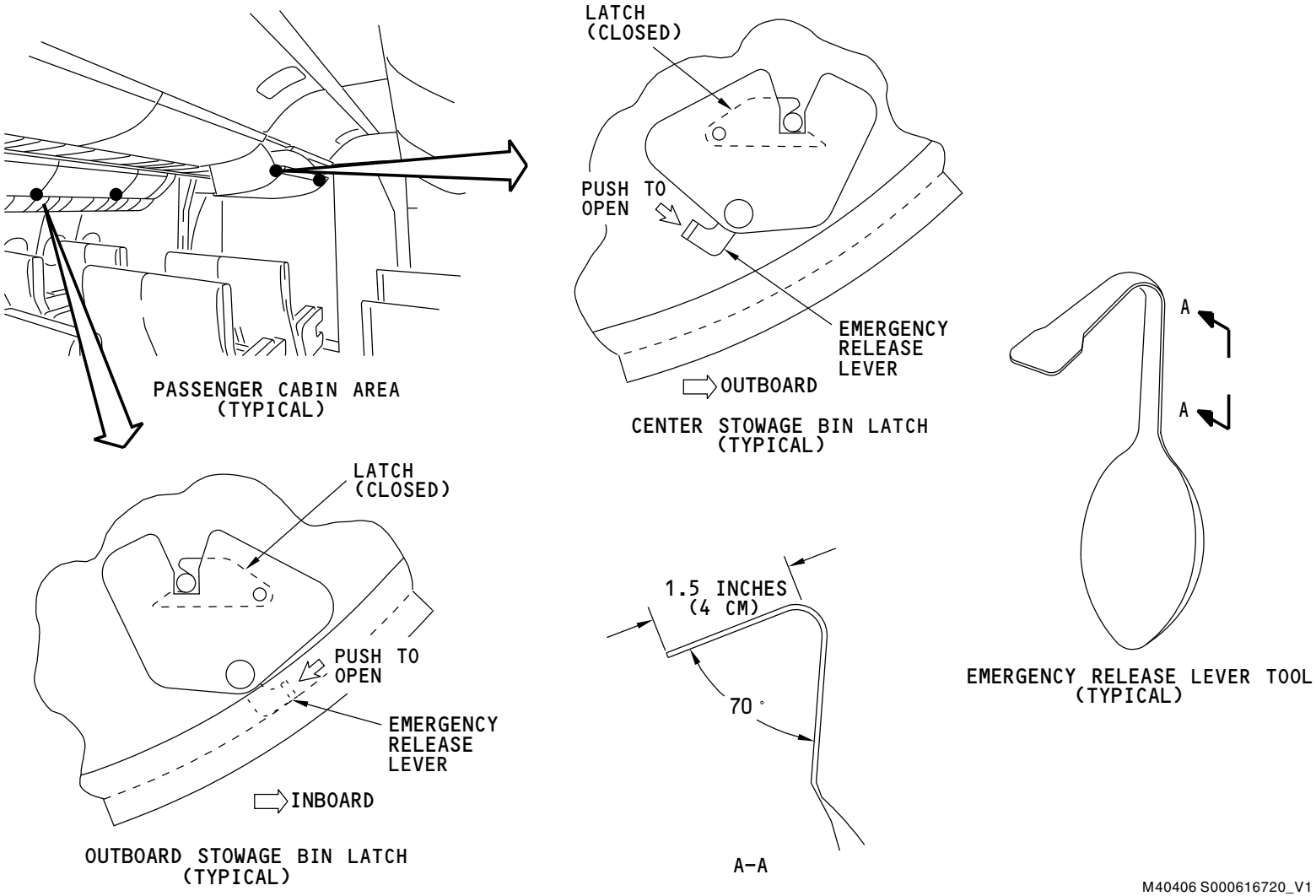
PASSENGER COMPARTMENT - STOWAGE BIN LATCH

PASSENGER COMPARTMENT - STOWAGE BIN - TRAINING INFORMATION POINT

Training Information Point

The emergency release levers let you externally open the stowage bin if the latches do not operate correctly.

You can use a special tool like the one shown to push on the emergency release levers.



M40406 S000616720_V1

PASSENGER COMPARTMENT - STOWAGE BIN - TRAINING INFORMATION POINT

PASSENGER COMPARTMENT - FLOOR-MOUNTED STOWAGE BOX (DOGHOUSE)

Purpose

The floor-mounted stowage box (doghouse) supplies a location for flight attendants to keep their carry-on baggage. The doghouse also supplies a location for emergency equipment.

Some floor mounted baggage stowage boxes in first class supplies locations for passenger carry-on baggage.

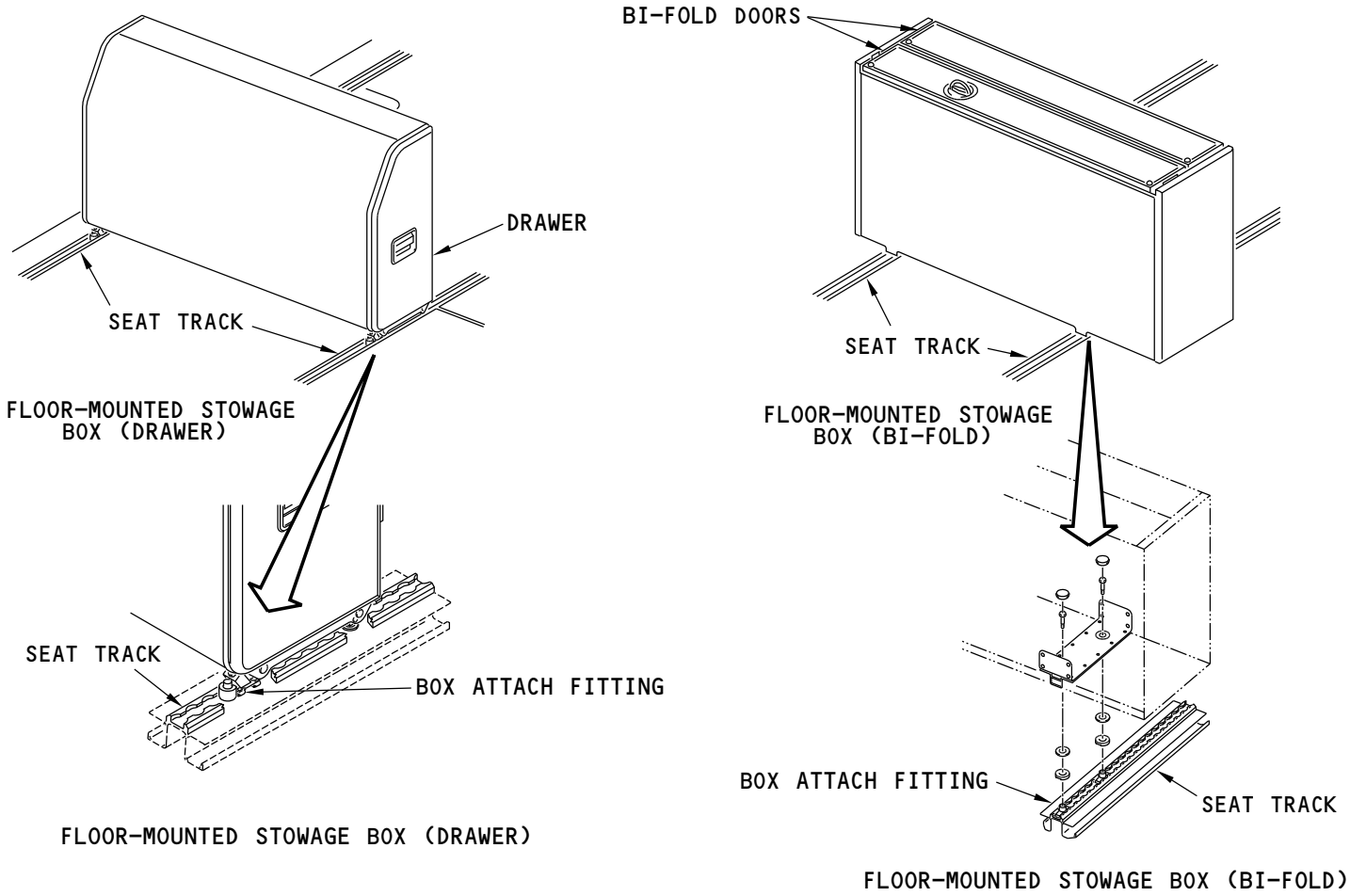
Physical Description

There are two types of floor-mounted stowage boxes: drawer and bi-fold. The drawer boxes have a single drawer that pulls out from the side of the box. The bi-fold boxes have a lid the opens from the top of the box.

Some first class floor mounted baggage stowage boxes can have six swing open doors that have magnetic latches.

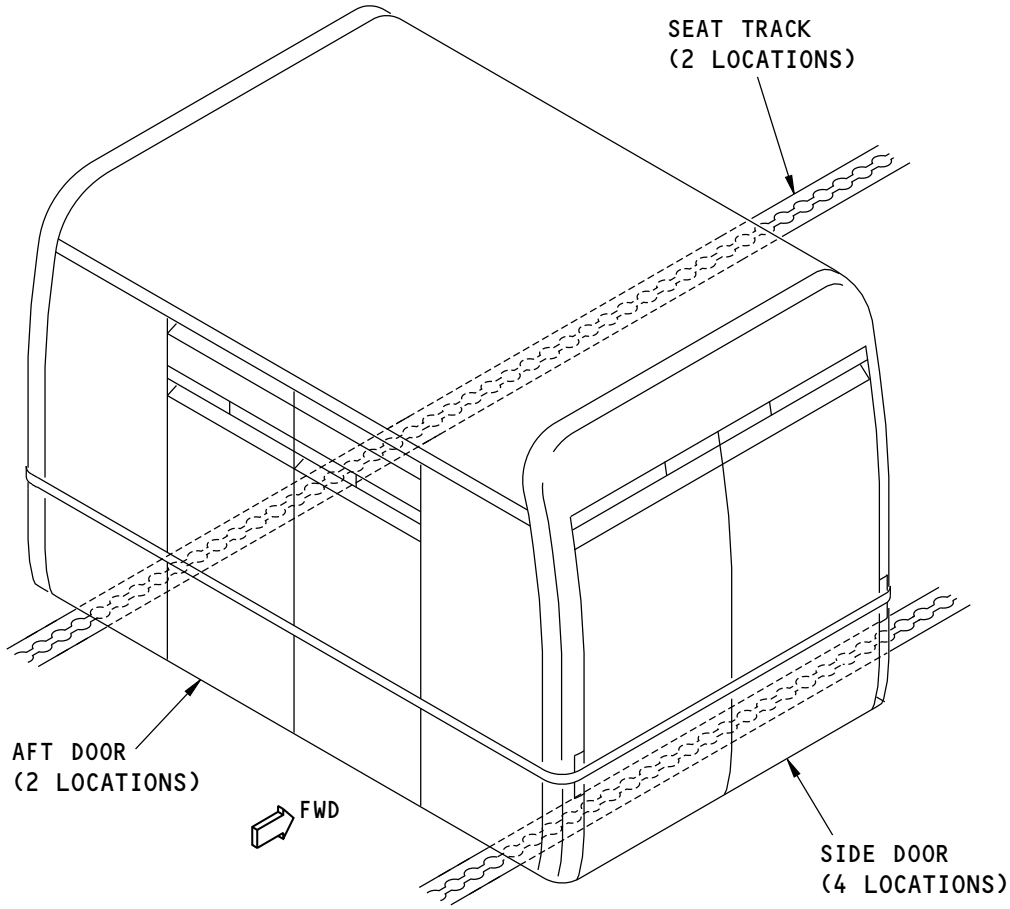
Location

The floor-mounted stowage box are in the passenger compartment on the floor. The boxes attach to the seat tracks.



M40400 S000616708_V1

PASSENGER COMPARTMENT - FLOOR-MOUNTED STOWAGE BOX (DOGHOUSE)



FLOOR MOUNTED STOWAGE BOX (FIRST CLASS)

2322715 S0000526704_V1

PASSENGER COMPARTMENT - FLOOR-MOUNTED STOWAGE BOX (FIRST CLASS)

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PASSENGER COMPARTMENT - OVERHEAD STOWAGE BOX

Purpose

The overhead stowage bin supplies a location above the passenger entry doors for carry-on baggage.

The overhead stowage bin may also be used for emergency equipment stowage.

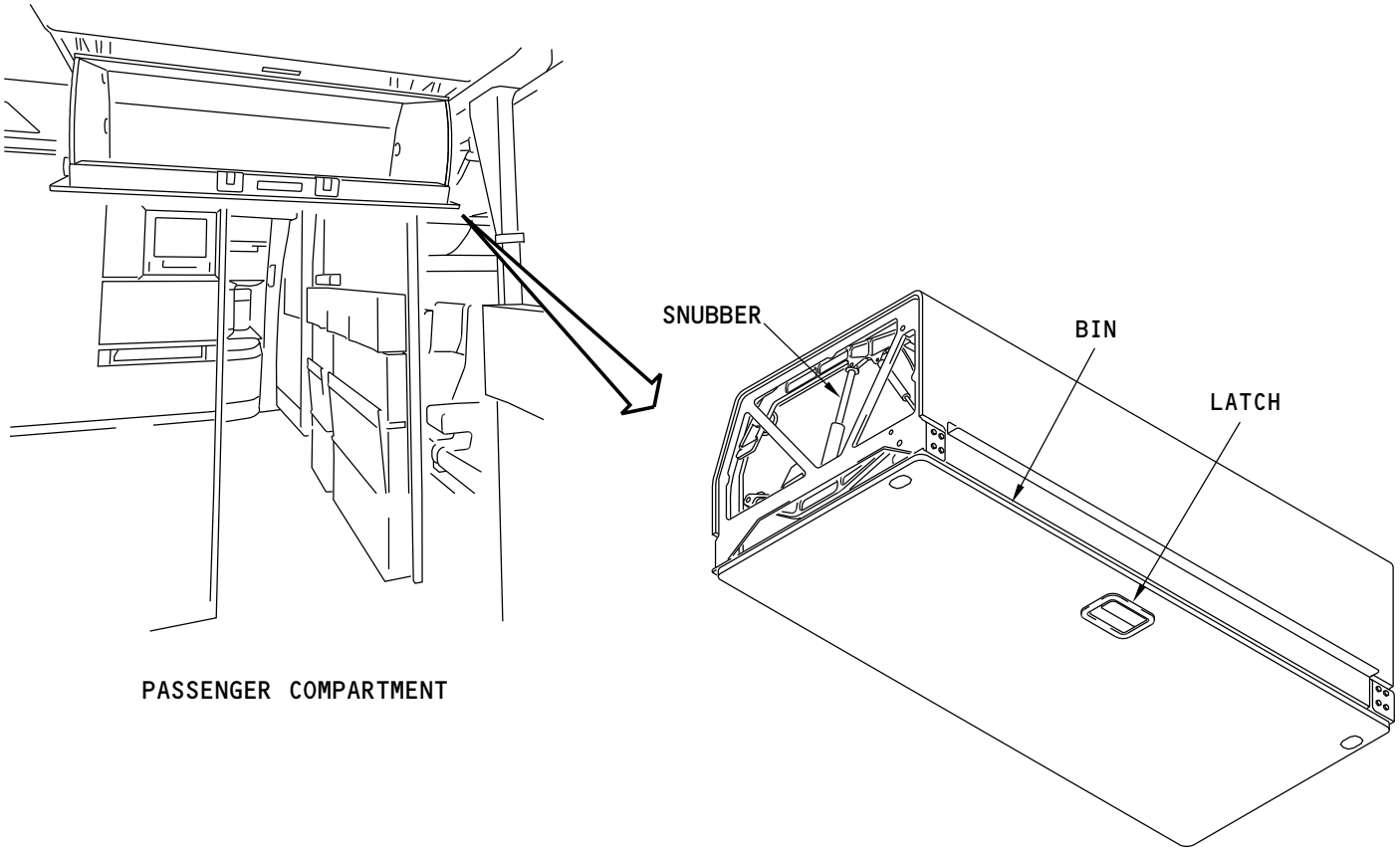
Physical Description

The overhead stowage bin has these components:

- Snubber (2)
- Latch
- Bin.

Location

The overhead stowage bins are above passenger entry doors 1 and 5 on the left and right side.



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PASSENGER COMPARTMENT - OVERHEAD STOWAGE BOX

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PASSENGER COMPARTMENT SEATS - PASSENGER SEATS

General

Airplanes can be equipped with these type seats:

- First Class
- Business Class
- Premium Economy Class
- Economy Class

First class and business class seats can have inflatable seat belts.

Business class seats have electric controls for recline, lumbar support, and leg rest adjustments. Economy class seats have manual adjustments for recline.

Physical Description

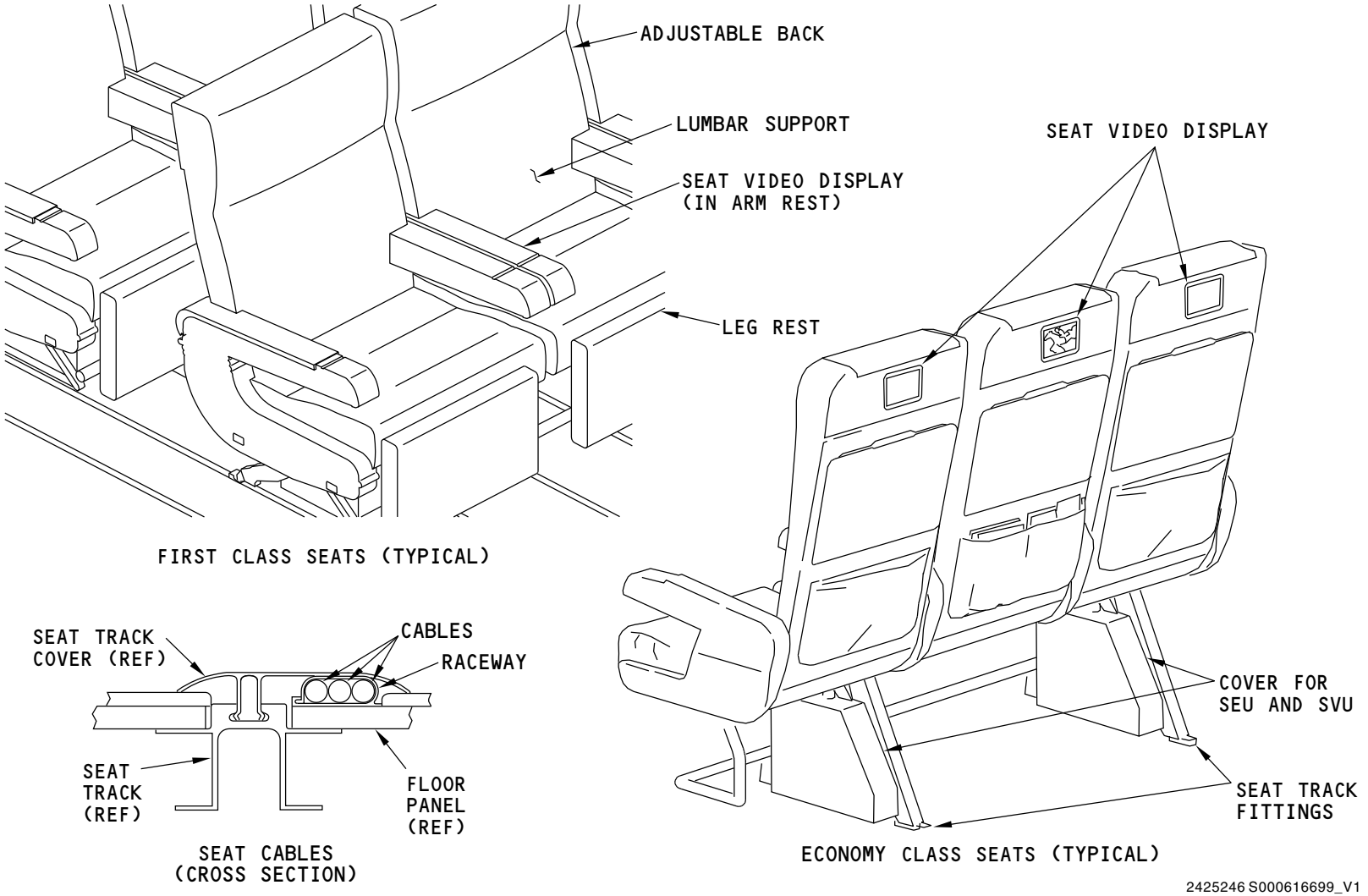
The seats have several components of the passenger entertainment system. The seats can have these components:

- Integrated telephone handset
- Seat video unit (SVU)
- Seat electronics unit (SEU)
- Seat video display

In some seats, the seat video folds and stows in the armrest. In other seats, the seat video display is in the seat back. (For seats immediately behind a bulkhead, the seat video display usually attaches to the bulkhead instead of the seat).

Training Information Point

Passenger entertainment system cables connect to the seat electronic units and the seat video units. The cables are inside a plastic raceway adjacent to the seat tracks. A cover hides the seat tracks and cable raceways. Disconnect the seat cables before you remove a seat group.



2425246 S000616699_V1

PASSENGER COMPARTMENT SEATS - PASSENGER SEATS

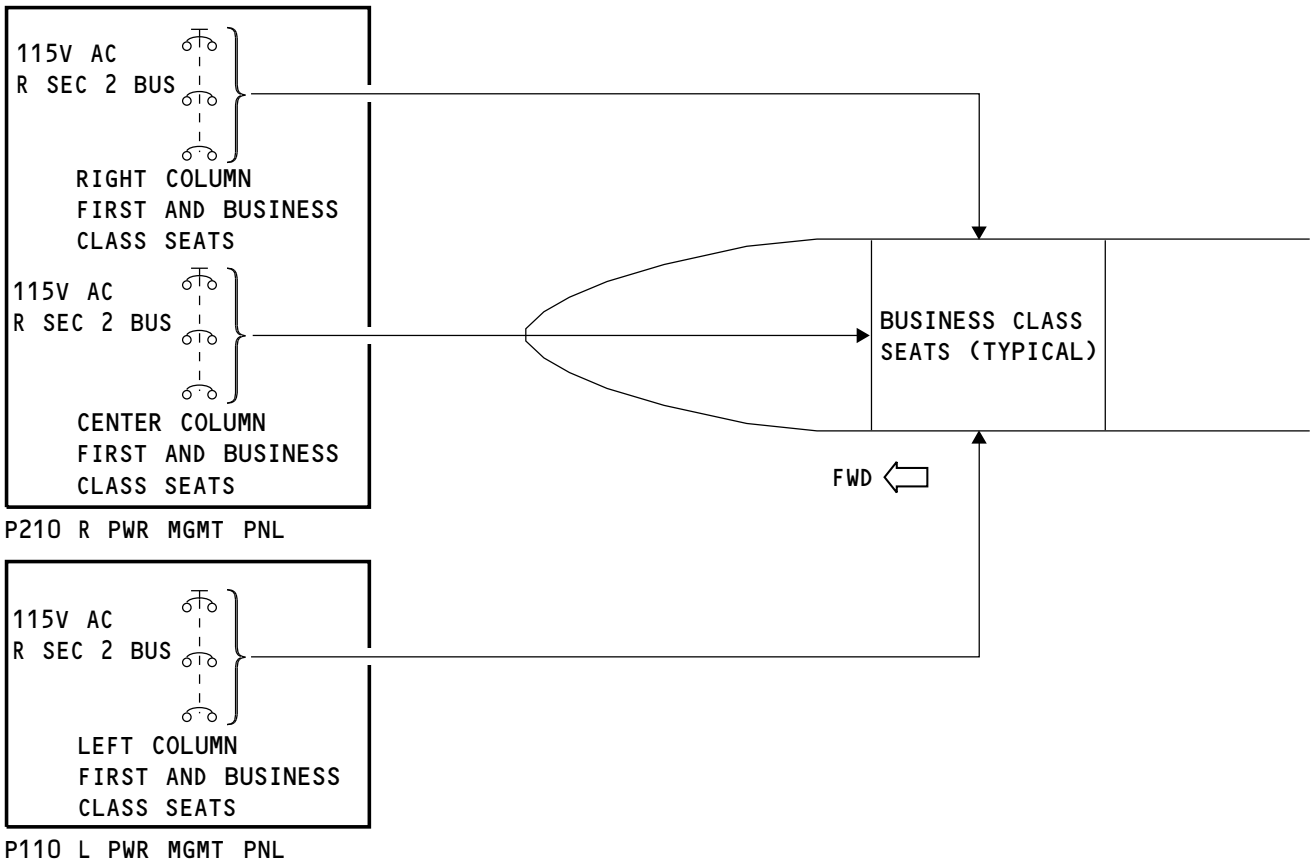
Physical Description

Business class seats with electric controls for adjustment can have these powered features:

- Recline
- Lumber support
- Leg rest adjustments.

Electrical Power Interface

The 115v ac left and right section 2 buses supply power for the electric seat controls. Each seat receives single phase power from the three phase bus.



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PASSENGER COMPARTMENT SEATS - POWERED PASSENGER SEATS

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PASSENGER COMPARTMENT SEATS - ATTENDANT SEATS

General

The seat track mounted attendant seats attach to the seat tracks. The wall mounted attendant seats attach to the walls of the lavatories, galleys, or partitions. The seats have no adjustments.

There are two stowage compartments in the seat track mounted seat.

Physical Description

The seat track mounted attendant seats have these parts:

- Headrest cushion
- Backrest cushion
- Seat pan
- Seat cushion
- Seat belt and shoulder harness (not shown)
- Seat structure
- Stowage compartment doors.

The wall mounted attendant seats have these parts:

- Headrest cushion
- Backrest cushion
- Seat cushion
- Seat belt and shoulder harness (not shown)
- Seat structure.

The cushions attach to the seat structure with hook and loop tape. Remove the covers from the cushions to dry clean the covers.

Clips (not shown) attach the seat belts and shoulder harness to the seat structure. You can remove the seat belts and shoulder harness to clean them.

Functional Description

The seat structure has a seat pan which folds down. A spring folds the seat pan up when there is no weight on it. A damper (not shown) causes the seat pan to fold up slowly.

The seat track mounted attendant seats have springs (not shown) which cause the stowage compartment doors to close. Latches hold the doors closed. The latch striker plates are adjustable.

The stowage compartment below the seat of the wall mounted attendant seat has a door which folds down. To unlatch the door, move the door latch left or right.

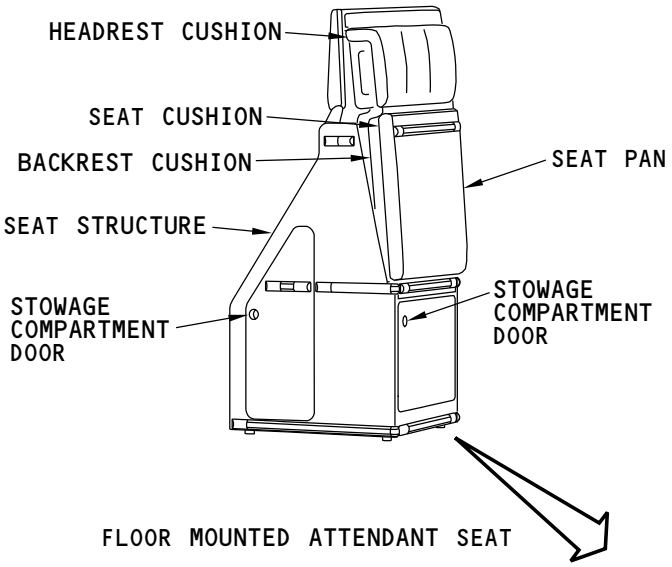
Training Information Point

In seats with handsets or switch panels, electrical connectors (not shown) connect the seat wiring to the airplane wiring.

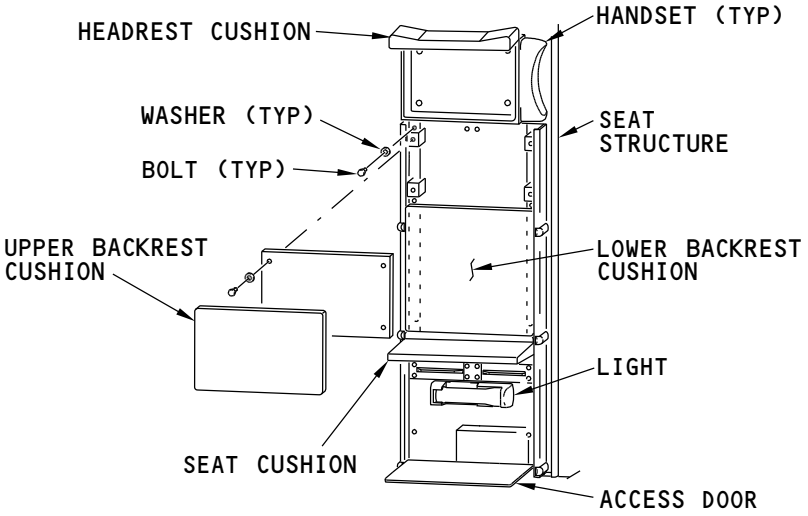
Four seat track fittings attach the seat track mounted attendant seat to the seat tracks.

The wall mounted attendant seats attach with bolts to vertical structure. To remove the seat, you must get access to the bolts as follows:

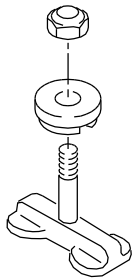
- Move the head rest up
- Remove the back rest
- Open the lower stowage compartment door.



FLOOR MOUNTED ATTENDANT SEAT



WALL MOUNTED ATTENDANT SEAT



SEAT TRACK FITTING

M40395 S000616703_V1

PASSENGER COMPARTMENT SEATS - ATTENDANT SEATS

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CREW REST AREAS AND CREW ACCOMMODATIONS - MAIN DECK FLIGHT CREW REST AREA

Purpose

The main deck flight crew rest (MDFCR) is an area for off-duty flight crew to rest during long flights. Crew members use the FCR only during cruise flight.

Location

The main deck flight crew rest is in the passenger compartment, forward of door 1 left.

General Description

The MDFCR contains bunks for two crew members and storage compartments (not shown) for their belongings. The MDFCR has these systems and equipment (not shown):

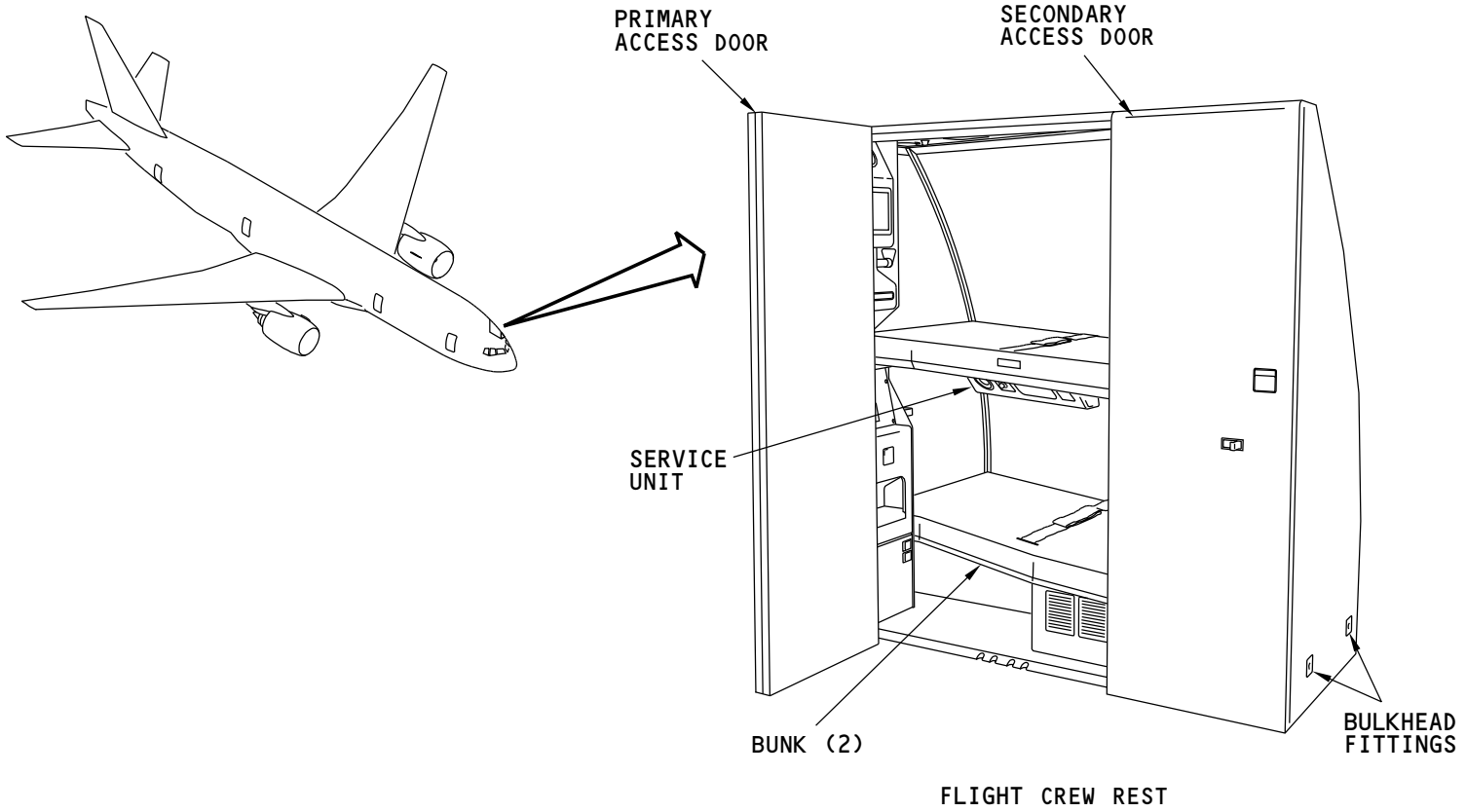
- Lighting
- Attendant call switches
- Audio entertainment
- (Cabin interphone) handset
- Ventilation
- Temperature control
- Smoke detection
- Supplemental oxygen
- Coat hook
- Safety belt
- Emergency Equipment

Physical Description

Three seat track fittings and one hard point (not shown) attach the MDFCR to the floor. Two tie rods attach the top of the MDFCR to the airplane structure. The MDFCR also attaches to the flight deck bulkhead. Disassemble the MDFCR and remove the parts through a passenger entry door.

Training Information Point

Electrical connections (not shown) for the MDFCR equipment are on top of the MDFCR ceiling. Access to these connections is through a ceiling panel in the adjacent aisle.



M40411 S000616740_V1

CREW REST AREAS AND CREW ACCOMMODATIONS - MAIN DECK FLIGHT CREW REST AREA (777-200 IGW)

CREW REST AREAS AND CREW ACCOMMODATION - FLIGHT CREW REST (FCR) DOOR LATCH

Purpose

The latch assembly is a manually operated latching device. The latch assembly is used to secure the FCR doors in the main passenger cabin.

Location

The latch assemblies are mounted on all the FCR doors in the main flight compartment.

Physical Description

The latch assembly is used to latch and secure all FCR doors. The latch assembly consists:

- Case
- Escutcheons
- Spindle Assembly
- Hub Assembly
- Lock Assembly
- Knob Assembly
- Handle Assembly
- Extension Rod and Bolt Assembly

Operation

The keyed latch assembly is designed so that the bolt assembly is retracted by rotating either the inside knob or outside handle. The outside handle is controlled by a lock that is operated by inserting a key. The bolt will retract with approximately 30 degrees of rotation in either direction of the inside knob or outside handle. When the inside knob and the outside handle are in the neutral position, the bolt is completely extended. The bolt is spring loaded to return the system to the latched position, which allows the door to be closed without retracting the bolt. The lock assembly is designed with an override feature.

Operation of the Latch Assembly (Outside)

- Insert and turn the key, then turn the door handle in either direction to retract the bolt.

Operation of the Latch Assembly (Inside)

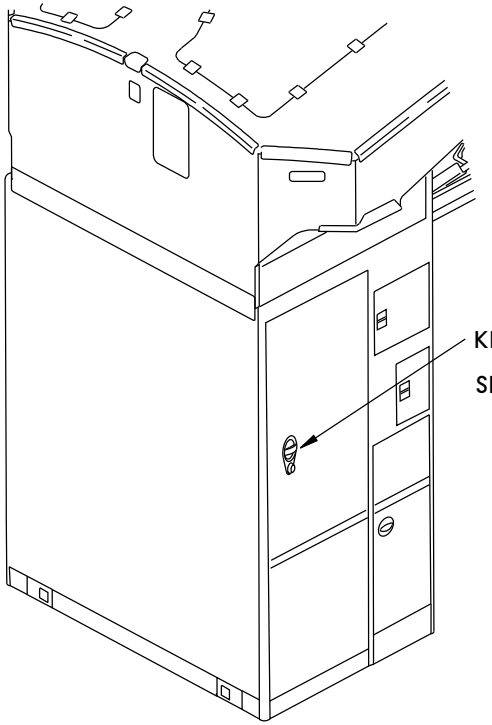
- Rotate the door handle in either direction to retract the bolt.

Operation of the Latch Assembly Override Feature

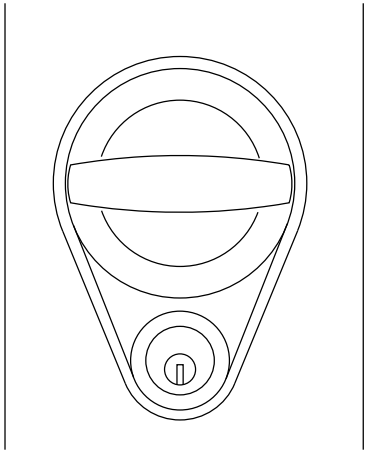
- To override a keyed latch assembly, insert a key between the latch asembly and door strike plate to retract the bolt.

Operation of the Keyed Lock Assembly Override Feature

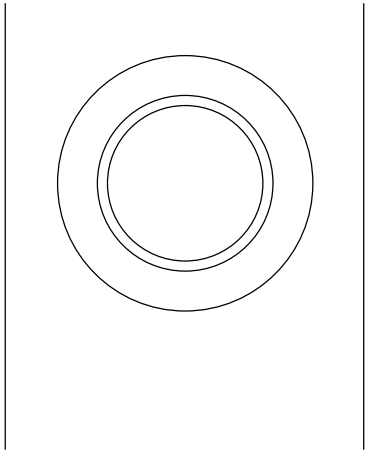
- Push the key lock face inward, while rotating the outside door handle.



VESTIBULE MODULE
(EXAMPLE)



KEYED ENTRY SYSTEM
(EXTERIOR VIEW)
(A)



KEYED ENTRY SYSTEM
(INTERIOR VIEW)
(A)

J87612 S0000181818_V1

CREW REST AREAS AND CREW ACCOMODATION - KEYED FCR DOOR LATCH

BUFFET AND GALLEY - INTRODUCTION

Purpose

The cabin crew uses galleys to store and prepare food and beverages.

General Description

These are typical galley inserts:

- Oven
- Refrigerator
- Coffee maker
- Sink
- Storage
- Waste container
- Serving carts.

Galleys can have a different number and types of service connections. These are the typical connections:

- Electrical power
- Water
- Refrigeration air
- Conditioned air
- Ventilation.

The usual location for most galley service connections are above the galley. If galleys A1, A2 or A3 require a water service connection, the connection is near the floor, aft of the galley. If any galley requires a waste water drain connection, the connection is always near the galley floor.

Some galleys have air chillers, external to the galleys to supply cold air for refrigeration. All galleys forward of the aft cabin doors, can have air chillers that mount above the galley in the ceiling area. Galleys aft of the aft cabin doors, can have air chillers in the lower lobe area, aft of the bulk cargo compartment.

The airplane has flex and fixed galleys. Flex galleys attach to the seat tracks. You can install or move the galley anywhere in the flexibility zones. Fixed galleys go in a specific place in the airplane and you cannot move them.

There are two kinds of flex galleys, center and outboard. Center flex galleys have straight sides and go in the center of the passenger compartment. Outboard flex galleys have a curved side to fit against the side of the passenger compartment.

See the Interior Reconfiguration Document for information to change the location of the galleys in a flex zone.

Location - Flex Galleys

These are the possible center flex galley positions:

- F-5 (forward)
- M-1 (door 2)
- M-2 (door 2)
- M-5 (door 4)
- M-6 (door 4)
- M-7 (door 4)
- A-4 (aft).

These are the possible outboard flex galley positions at door 2:

- MS-1
- MS-2
- MS-3
- MS-4.

These are the possible outboard flex galley positions at door 4:

- MS-5
- MS-6
- MS-7
- MS-8.

This is the possible outboard flex galley position at door 5:

- AS-2.

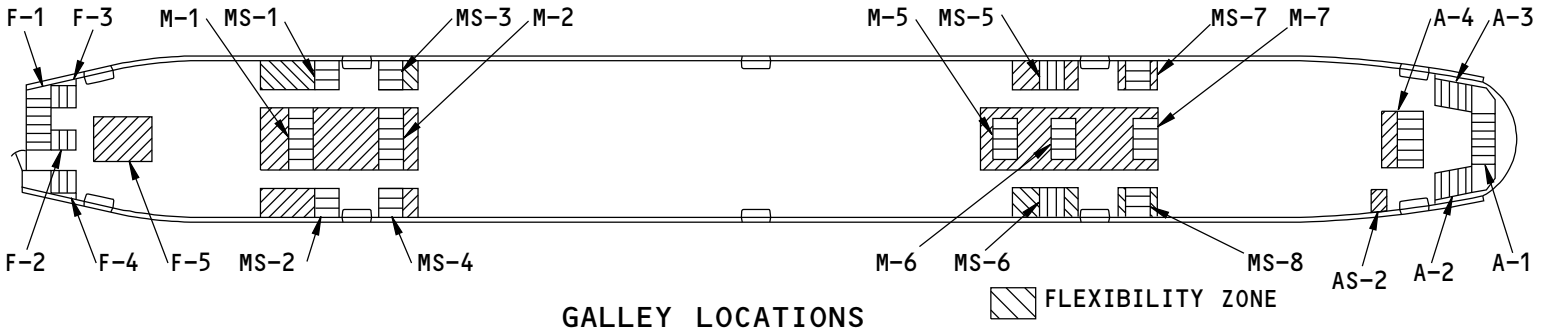
Location - Fixed Galleys

These are the possible forward fixed galley positions:

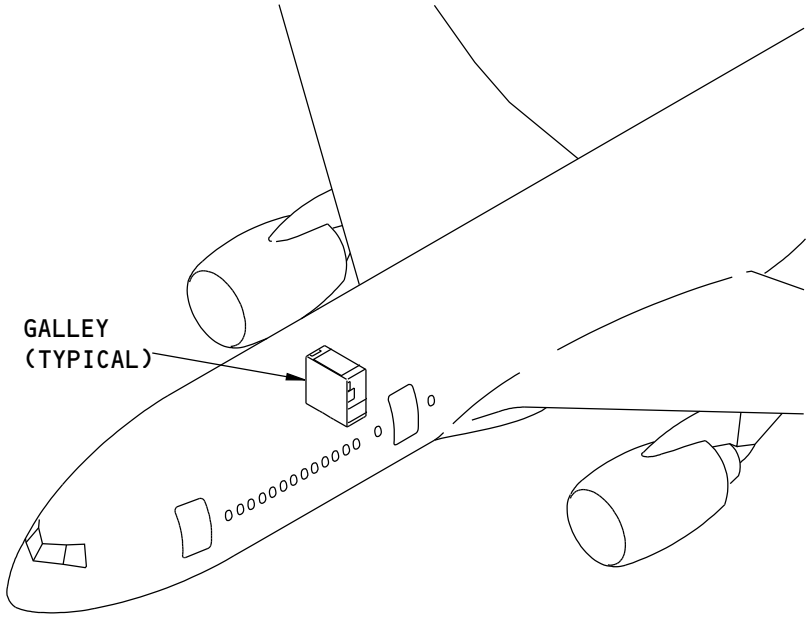
- F-1 (forward)
- F-2 (forward)
- F-3 (forward)
- F-4 (forward).

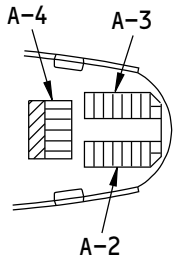
These are the possible aft fixed galley positions:

- A-1 (aft)
- A-2 (aft)
- A-3 (aft).



GALLEY LOCATIONS





ALTERNATE AFT GALLEY

M40420 S000616749_V2

BUFFET AND GALLEY - INTRODUCTION

Physical Description

The center flex galleys can include one or more of these units:

- M1 galley
- M2 galley (not shown)
- F5 galley (not shown)
- M2 galley (not shown)
  M5 galley (not shown)
- M6 galley (not shown)
- M7 galley (not shown)
- A4 galley (not shown).

The M1 galley is in the center of the passenger compartment, near door 2. The galley faces aft.

The M2 galley is in the center of the passenger compartment, near door 2. The galley faces forward.

The F5 galley is in the center of the passenger compartment, near door 1. The galley faces forward.

The M5 galley is in the center of the passenger compartment, near door 4. The galley faces aft.

The M6 galley is in the center of the passenger compartment, near door 4. The galley faces aft.

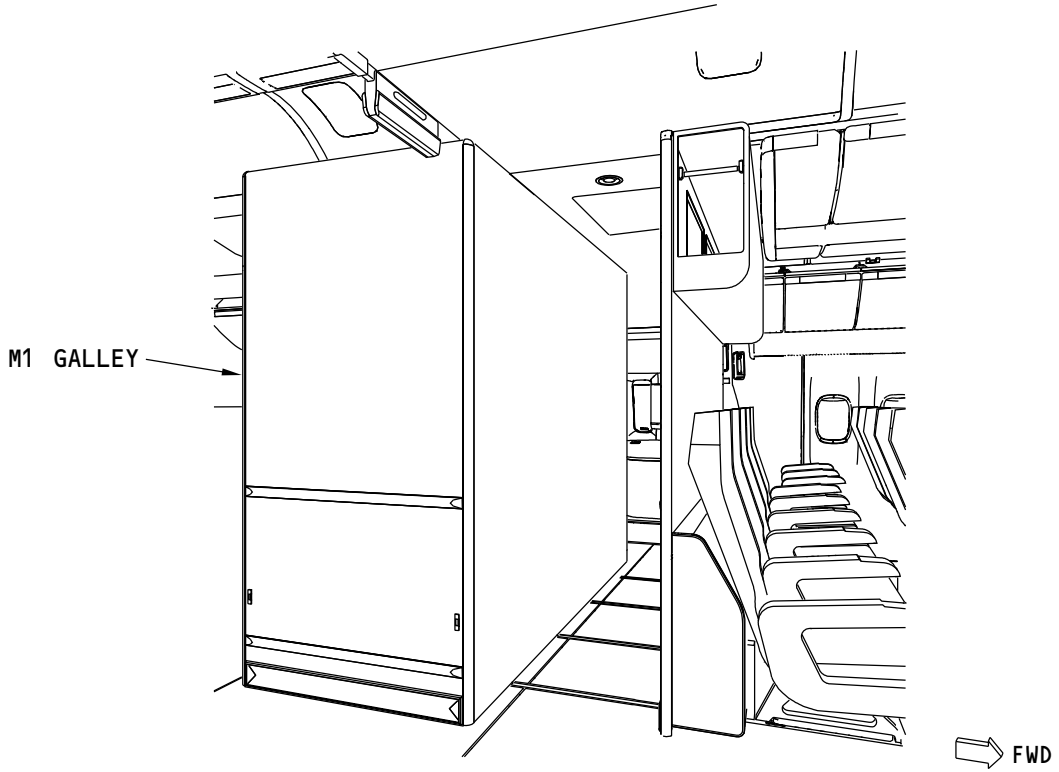
The M7 galley is in the center of the passenger compartment, near door 4. The galley faces forward.

The A4 galley is in the center of the passenger compartment, near door 5. The galley faces aft.

Air Chillers

Air chillers can be attach to the top of the center flex galleys. The chiller supplies cold air to the refrigeration compartments. These center flex galleys have an air chiller:

- M1
- M2
- M5



CENTER FLEX GALLEY
(TYPICAL)

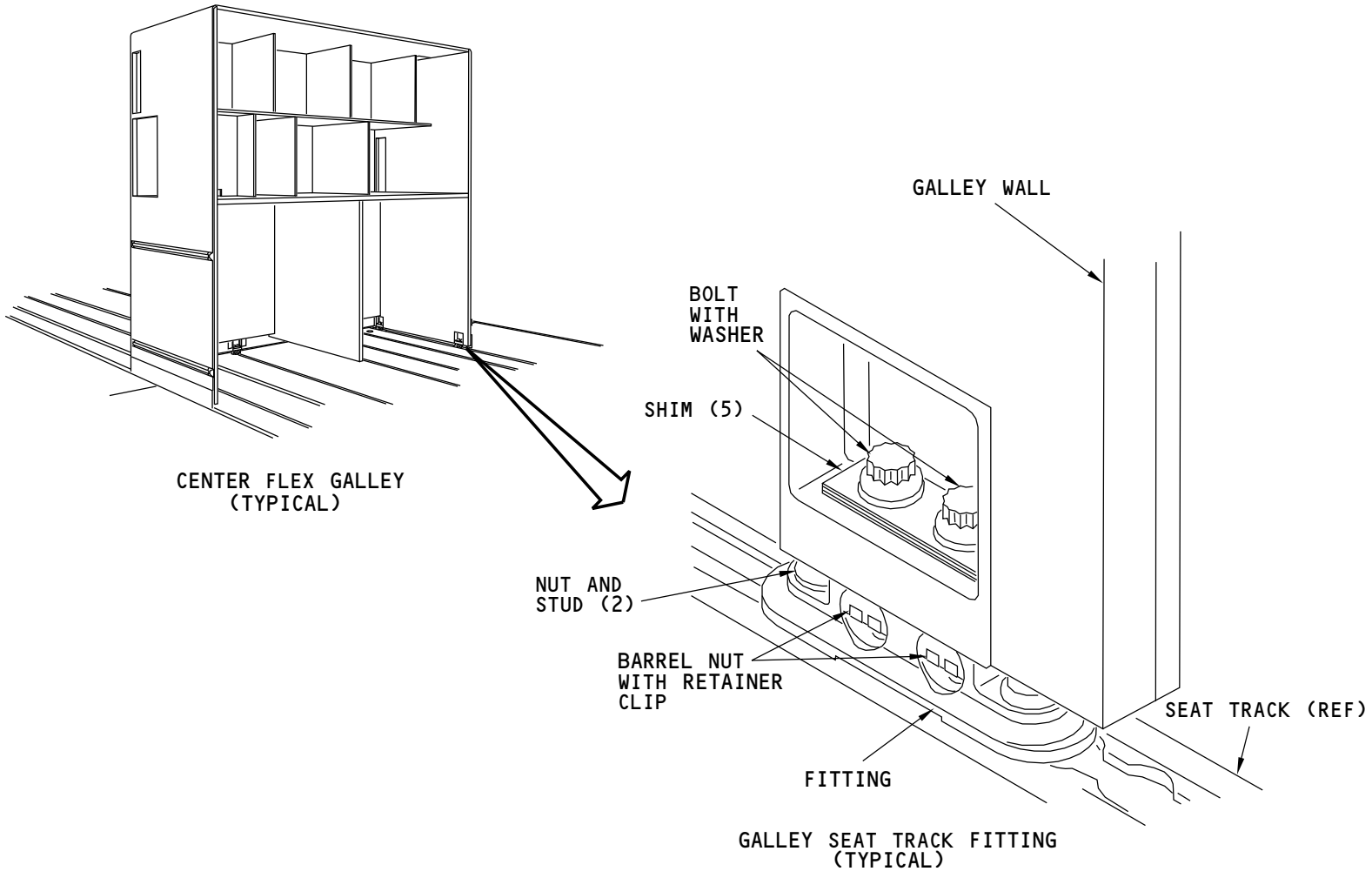
M40421 S000616754_V1

BUFFET AND GALLEY - CENTER FLEX GALLEY - INTRODUCTION

Training Information Point

Bolts and fittings attach the flex galleys to the seat tracks. Five shims are necessary at each outboard fitting. Put shims between the fitting and the galley as necessary to make the galley level. Put the remaining shims under the bolt heads.

You must install special seat track fittings (not shown) at galley locations at the seat track splices. It is possible that tolerance build-up in the seat tracks will not permit you to install the standard fittings at the seat track splices. The special fittings align to the seat track lip to permit installation of the fittings at the splice.



M40422 S000616758_V1

BUFFET AND GALLEY - CENTER FLEX GALLEY - TRAINING INFORMATION POINTS

Physical Description

The forward fixed galleys can include one or more of these units:

- F1 galley
- F2 galley
- F3 galley.

The F1 galley is at the right side of the passenger compartment, forward of door 1. The galley faces aft.

The F2 galley is in the center of the passenger compartment, forward of door 1. The galley faces to the right.

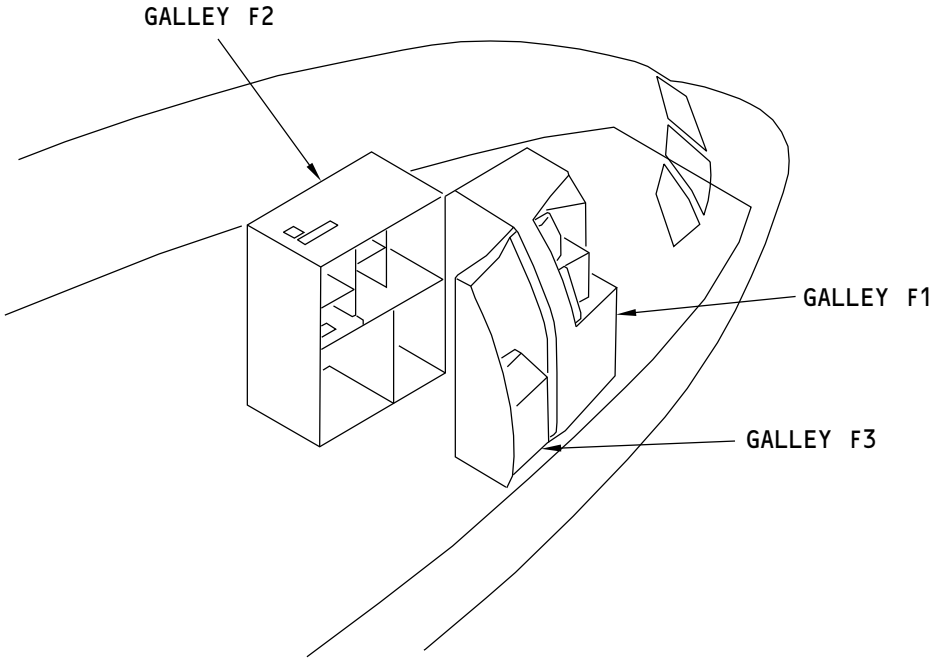
The F3 galley is at the right side of the passenger compartment, forward of door 1. The galley faces inboard.

Air Chillers

Air chillers can be attached to the top of the forward fixed galleys. The chiller supplies cold air to the refrigeration compartments.

The F1 galley has an air chiller.

The F2 galley has an air chiller.



FORWARD FIXED GALLEYS
(TYPICAL)

M40423 S000616760_V1

BUFFET AND GALLEY - FORWARD FIXED GALLEY - TRAINING INFORMATION POINTS

Training Information Point

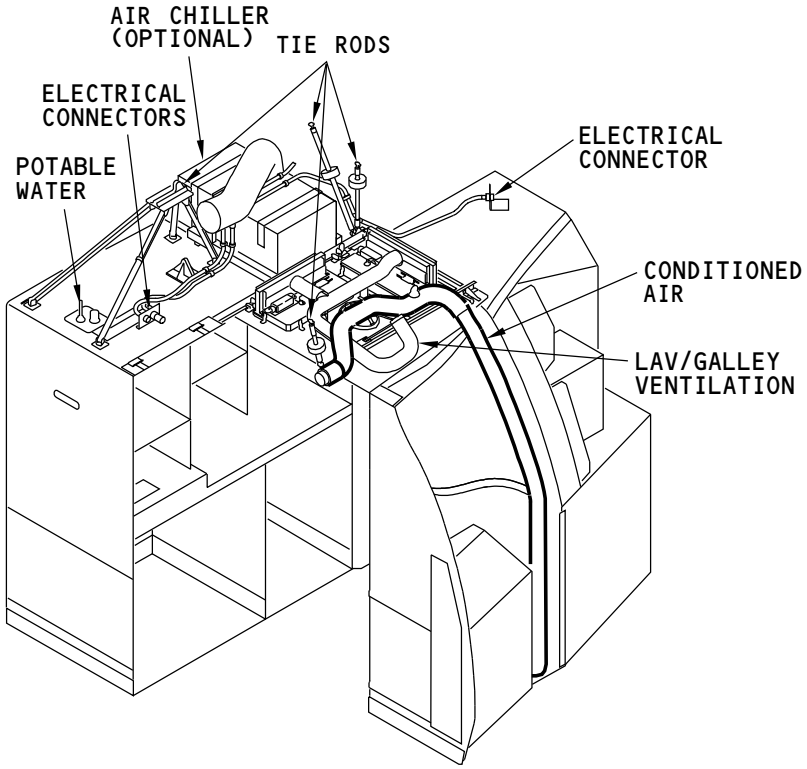
Tie rods attach the top of the galleys to the airplane structure.

These connections are above the galley:

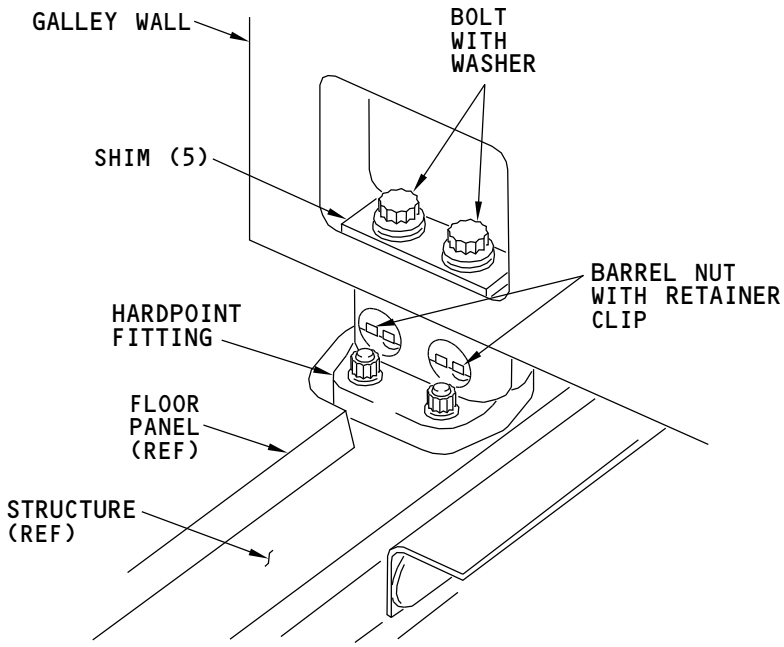
- Electrical power
- Refrigeration air
- Conditioned air
- Lav/galley ventilation
- Potable water supply.

The gray water drain connection (not shown) is near the floor.

Bolts and hardpoint fittings attach the fixed galleys to the floor. Five shims are necessary at each fitting. Put shims between the fitting and the galley as necessary to make the galley level. Put the remaining shims under the bolt heads.



UPPER CONNECTIONS
FORWARD FIXED GALLEY
(TYPICAL)



GALLEY FLOOR FITTING
(TYPICAL)

M40425 S000616765_V1

BUFFET AND GALLEY - FORWARD FIXED GALLEY - TRAINING INFORMATION POINTS

BUFFET AND GALLEY - AFT FIXED GALLEY - INTRODUCTION

Physical Description

The aft fixed galleys can include one or more of these units:

- A1 galley
- A2 galley
- A3 galley.

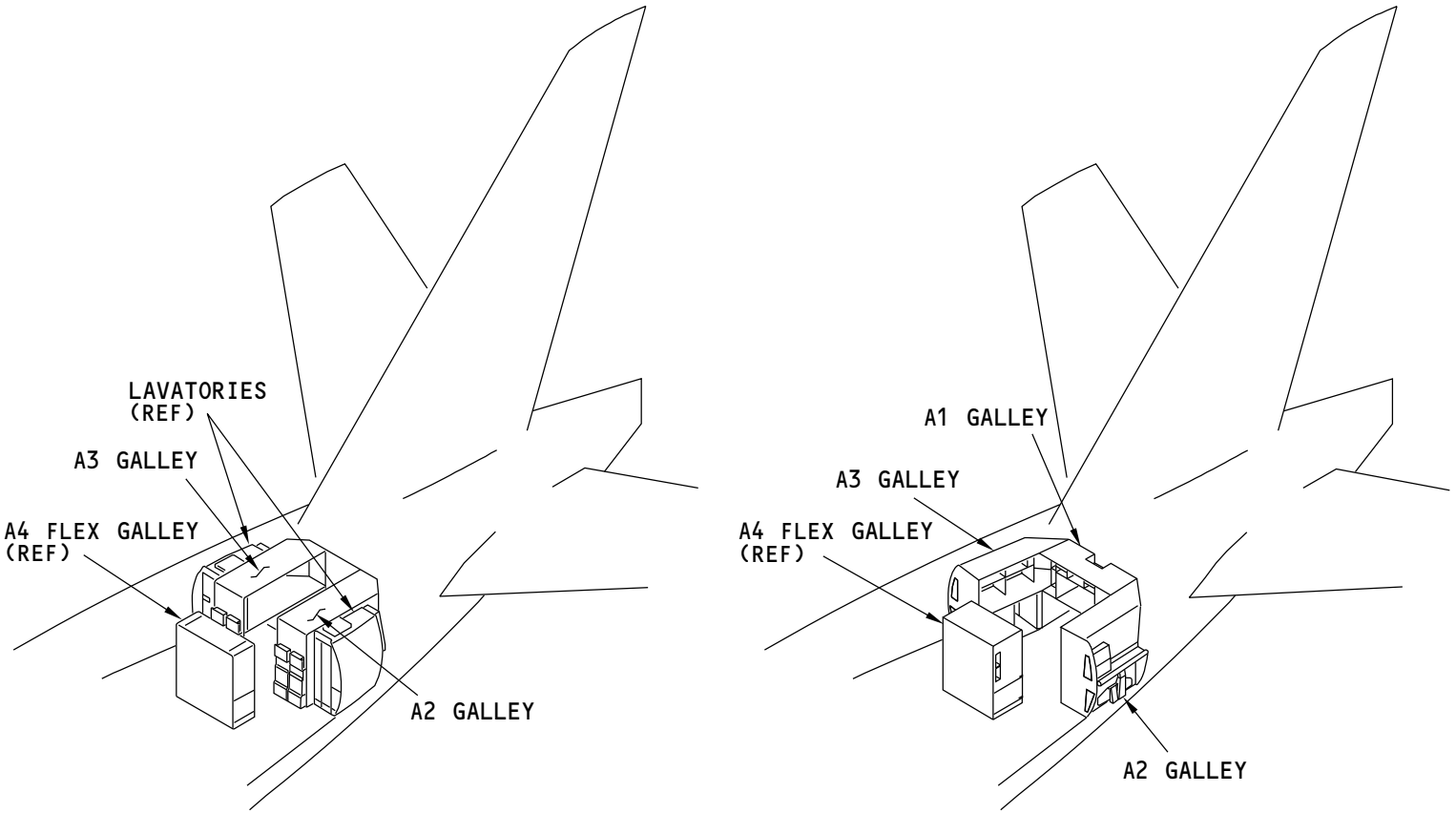
The A1 galley is at the center of the passenger compartment, aft of aft door. The galley faces forward.

The A2 galley is on the left side of the passenger compartment, aft of aft door. The galley faces inboard.

The A3 galley is at the right side of the passenger compartment, aft of aft door. The galley faces inboard.

Air Chillers

One or two air chillers (not shown) can be installed in the lower lobe area aft of the bulk cargo compartment. A chiller supplies cold air for refrigeration compartments in the aft fixed galleys.



AFT FIXED GALLEY
(POSSIBLE LOCATIONS)

M40426 S000616766_V1

BUFFET AND GALLEY - AFT FIXED GALLEY - INTRODUCTION

Training Information Point

Tie rods attach the top of the galleys to the airplane structure.

Electrical, conditioned air and lavatory/galley ventilation connections are above the galleys.

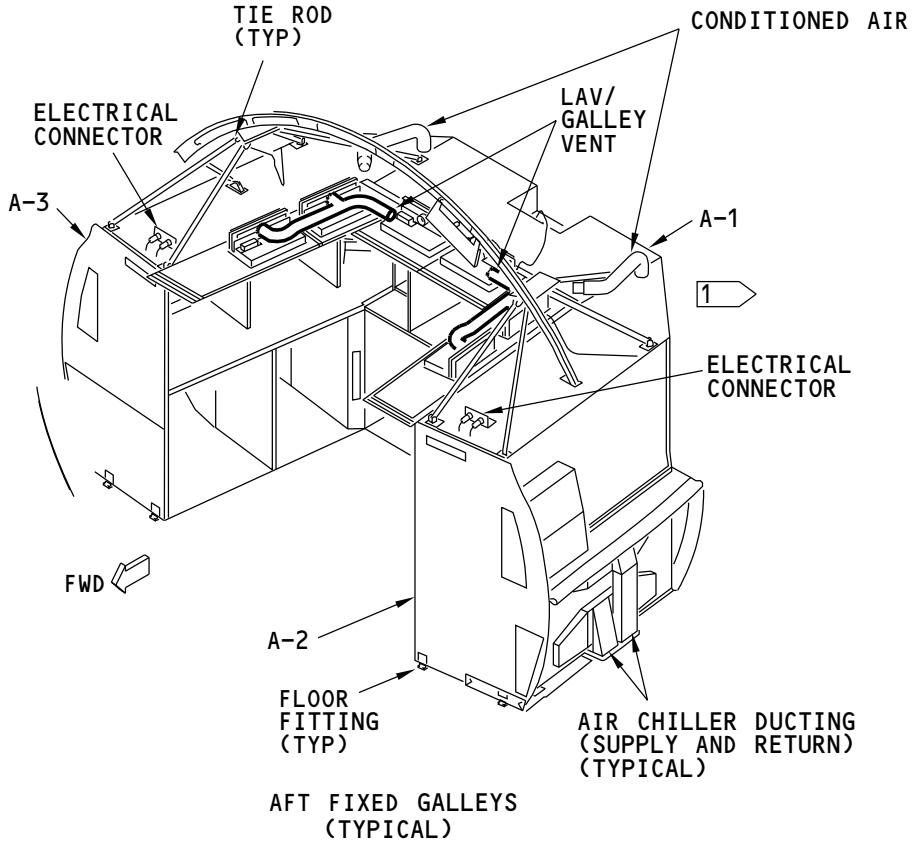
Some or all of the aft galleys can have potable water and gray water connections. The connections are aft or outboard of the applicable galley, near the floor.

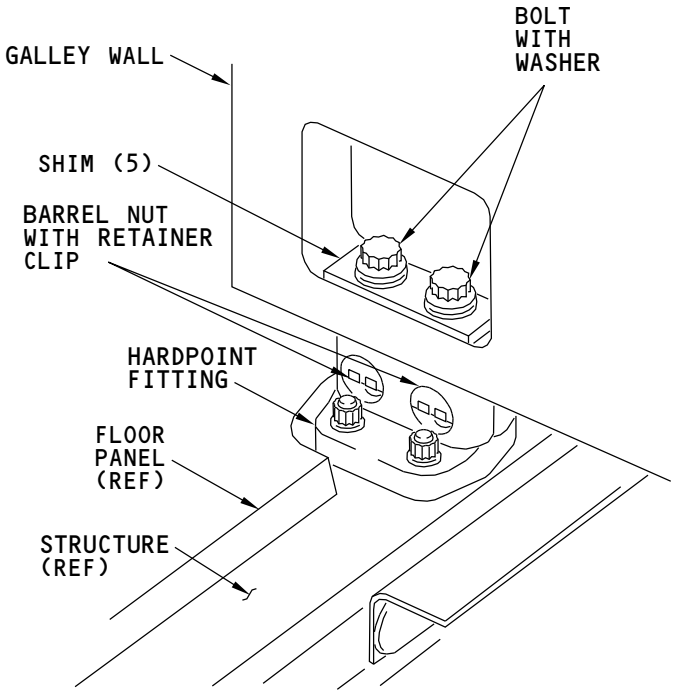
Some aft fixed galleys have air chillers (not shown), external to the galleys to supply cold air for refrigeration. Air chiller ducting can be installed behind one or more of the galleys. The ducting connects the galley refrigeration carts or compartments to an air chiller. One or two air chillers can be in the lower lobe area, aft of the bulk cargo compartment. When you install a galley, make sure the ducts align with the air chiller manifold before you lower the galley into position.

Bolts and hardpoint fittings attach the fixed galleys to the floor. Most of the fittings use shims. Five shims are necessary at each of these fittings. Put shims between the fitting and the galley as necessary to make the galley level. This will provide a proper fit and avoid interference with adjacent furnishings. Put the remaining shims under the bolt heads.

CAUTION

WHEN YOU INSTALL THE GALLEYS, DO NOT PERMIT THE GALLEYS TO MOVE AFT PAST THE TIE DOWN FITTING HARD POINTS. DAMAGE TO FLIGHT- CRITICAL WIRING CAN OCCUR. INSPECT THE WIRE BUNDLES AFTER YOU INSTALL THE GALLEYS.





1 POTABLE WATER AND GRAY WATER CONNECTIONS ARE ON THE AFT OR OUTBOARD SIDE OF THE GALLEYS, NEAR THE FLOOR (NOT SHOWN)

M40428 S000616772_V1

BUFFET AND GALLEY - AFT FIXED GALLEY - TRAINING INFORMATION POINTS

BUFFET AND GALLEY - OVERHEAD AIR CHILLER

Purpose

Overhead air chillers supply cold air for refrigeration.

Location

One or two air chiller can be above a galley to which it supplies chilled air. Usual refrigeration for a galley requires only one chiller. The forward galley area is shown as an example for a typical installation of an overhead chiller. These galleys have an overhead chiller(s):

- F-1.
- F-2.
- M-1.
- M-2.
- M-5.

Features

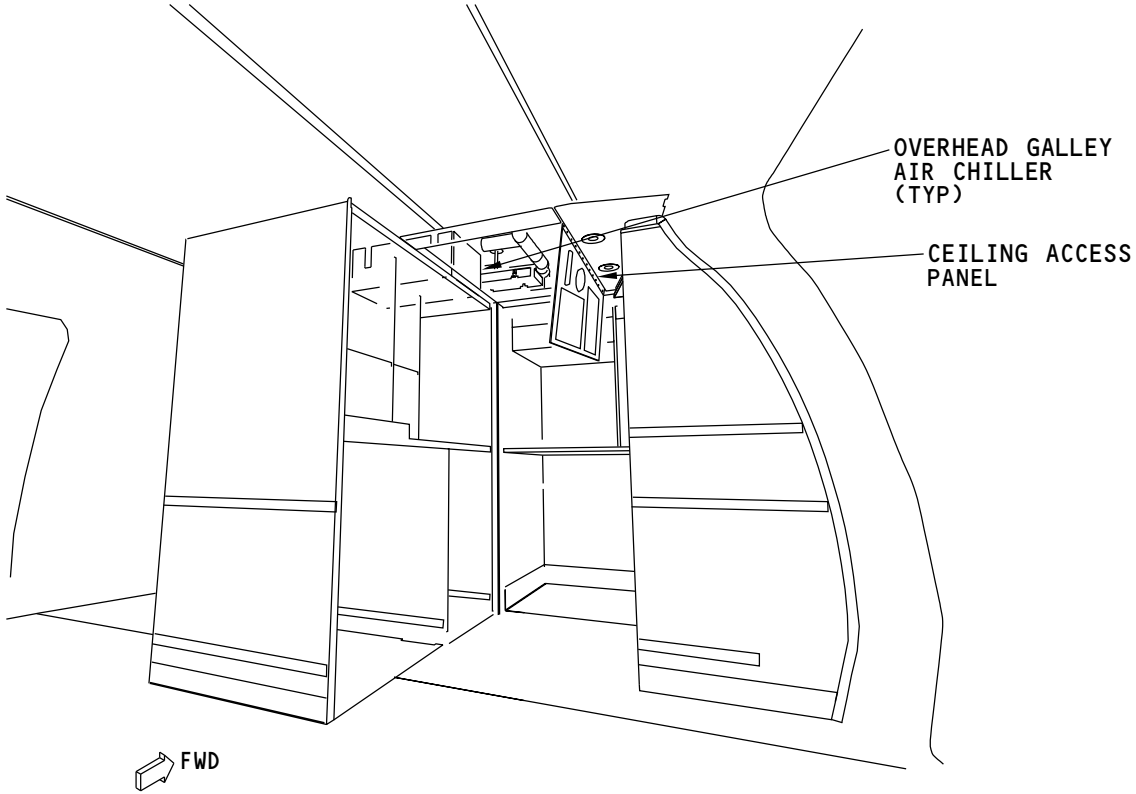
The air chiller is a vapor-cycle cooling unit.

The chiller attaches to a carriage with bolts. The carriage has wheels that fit into a rail assembly. The carriage and the rail assembly lets you move the chiller horizontally. The carriage and rail assembly also let you rotate the chillier to a vertical position. When you remove a chiller, remove the bolts that attach the carriage to the rails. Pull the chiller until the wheels on the carriage move into a detent in the rails. Pull down on the chillers to make it rotate to the vertical position. Lift the chiller and carriage up and off of the rails. Lower the chiller and carriage to the floor.

Electrical power and control for the chiller come from its related galley. A wire bundle connects the air chiller to the galley.

Training Information Point

Lower the ceiling panel adjacent to the galley to get access to the air chiller.



FORWARD GALLEY AREA
(TYPICAL)

M40435 S000616782_V1

BUFFET AND GALLEY - OVERHEAD AIR CHILLER

BUFFET AND GALLEY - LOWER LOBE AIR CHILLER

Purpose

The air chiller supplies cold air to the carts or compartments of the aft fixed galleys that need refrigeration.

Location

One or two air chillers can be installed in the lower lobe area, aft of the bulk cargo compartment. Remove the left aft end wall panel to get access.

Supply and return air ducts (not shown) connect the air chillers to the applicable galley. One or more of the galleys can have a supply and return duct connected to it. The ducts go aft and outboard of the chillers, near the aft pressure bulkhead (not shown).

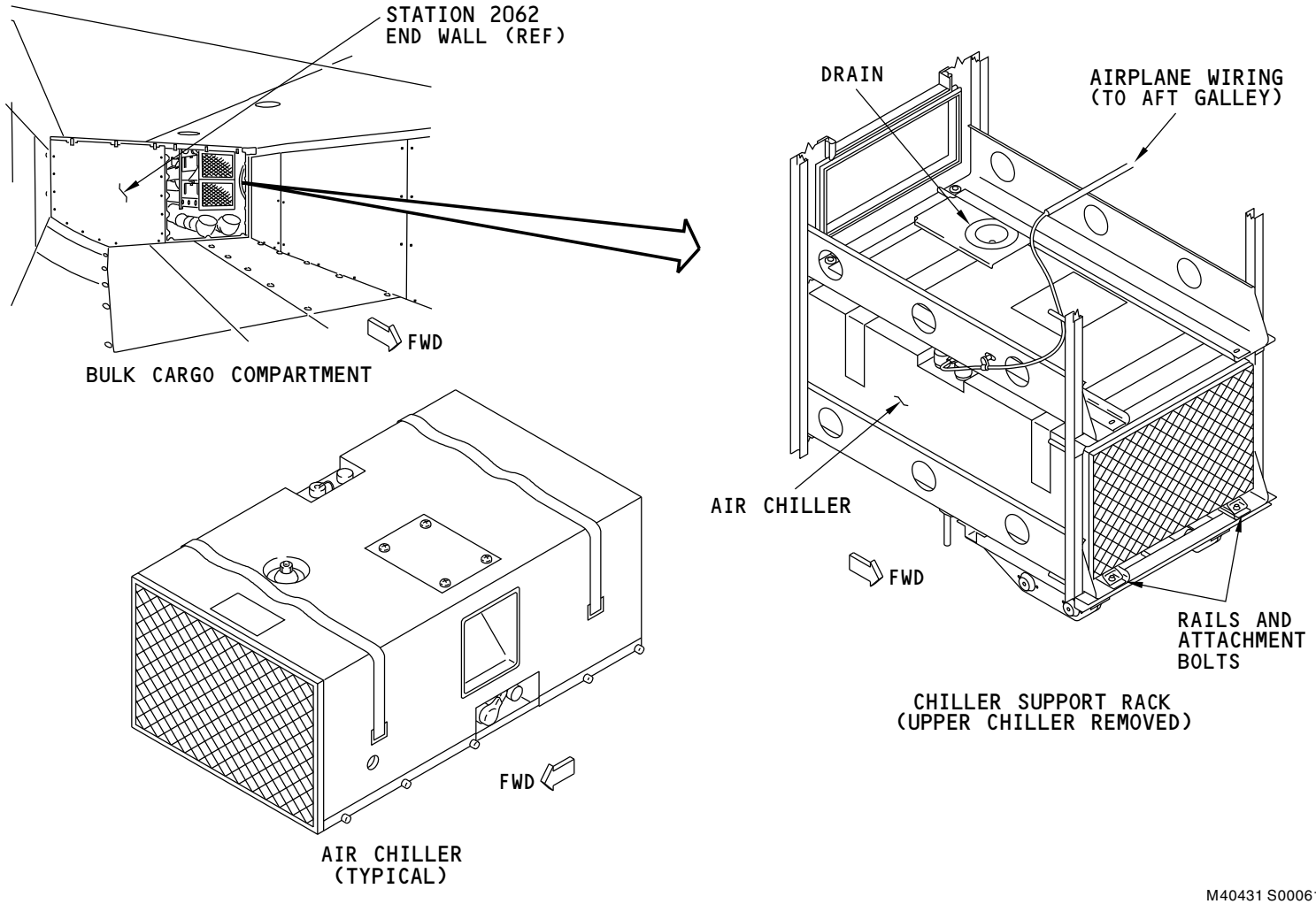
Features

The air chiller is a vapor-cycle cooling unit.

Electrical power and control for the chiller comes from the aft galley. A wire bundle (not shown) connects the air chiller to the aft galley.

Training Information Point

The chiller attaches to rails with bolts. The rails attach with bolts to a support rack which hangs from the passenger compartment floor. When you remove a chiller, remove the bolts that attach the rails to the support rack. Remove the chiller with the rails attached to it.



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BUFFET AND GALLEY - LOWER LOBE AIR CHILLER

BUFFET AND GALLEY - AIR CHILLER - PHYSICAL DESCRIPTION

Physical Description

The air chiller is a vapor-cycle cooling unit. A typical chiller has these parts:

- Lifting strap (2)
- Condenser air exhaust (top)
- Chilled air outlet (evaporator outlet)
- Chilled air return (evaporator inlet)
- Condenser air exhaust (side)
- Electrical connector (2)
- Refrigerant sight glass
- Air filter (condenser air inlet).

The chiller weighs approximately 85 pounds (39 kg). A drain in the bottom of the chiller (not shown) carries the water away. Shop technicians use the refrigerant sight glass during servicing.

Exhaust Ports

The chiller has two condenser air exhaust ports to permit alternate installations. When you install a chiller, make sure that one port is open and the other port has a cover plate.

Some chillers are equipped with an internal duct used to direct airflow from the exhaust port. These chillers do not need a cover plate over the unused port.

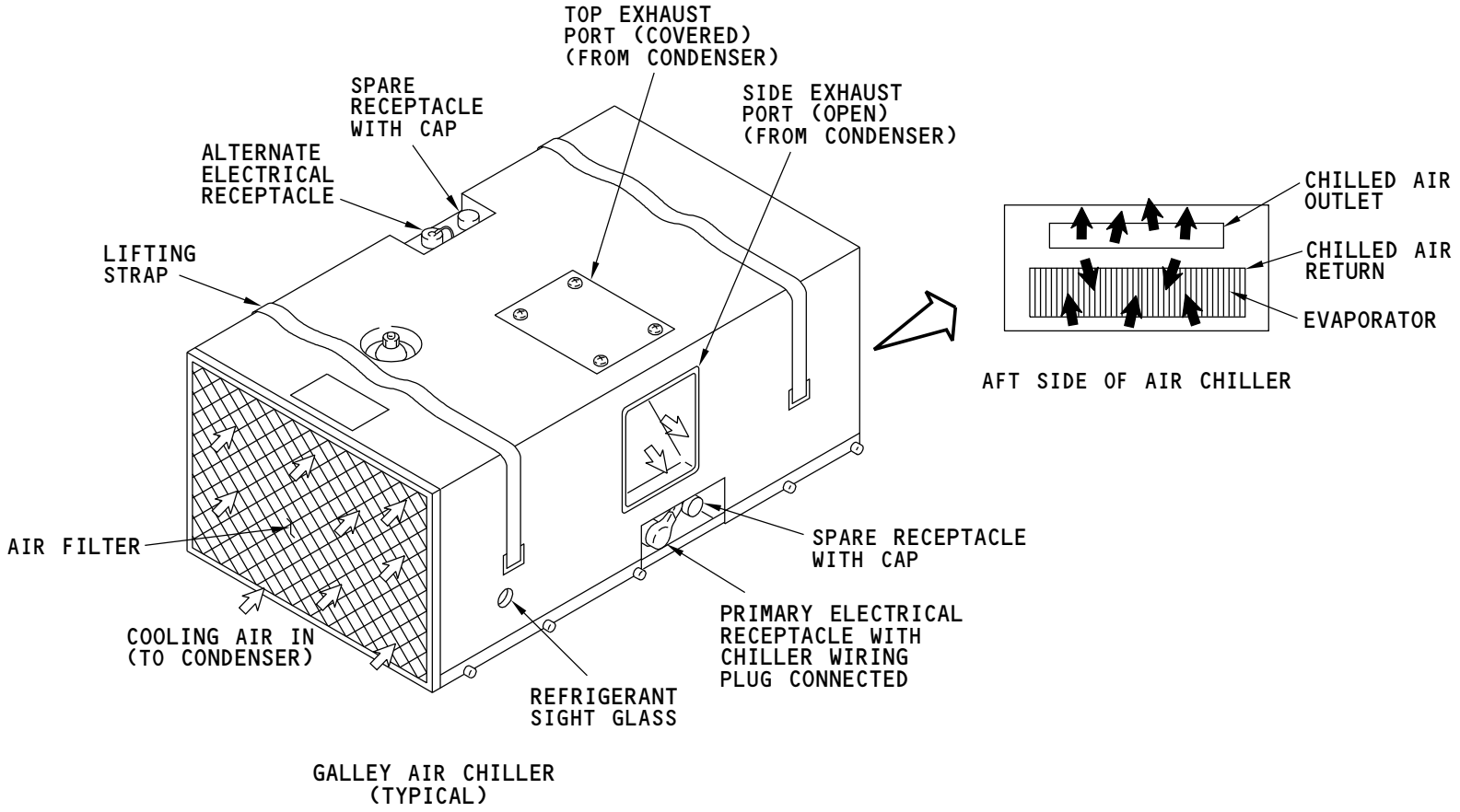
Electrical Receptacles

The chiller has two electrical receptacles. The primary receptacle (W4J1) is on the side of the chiller. The alternate receptacle (W3J1) is on top of the chiller. If you connect the airplane wiring to the alternate (top) receptacle, connect the chiller wiring plug W3P1 to the primary (side) connector. Stow the two connector caps on the adjacent spare receptacles.

If you connect the airplane wiring to the primary receptacle (W4J1), stow the chiller wiring plug (W3P1) on the adjacent spare receptacle. Put one of the space caps on the alternate receptacle (W3J1).

Air Inlet Filter

You can clean the condenser air inlet filter. Remove the filter from the chiller. Wash the filter with soap and water then rinse the filter with clean water. Dry the filter with compressed air.



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BUFFET AND GALLEY - AIR CHILLER - PHYSICAL DESCRIPTION

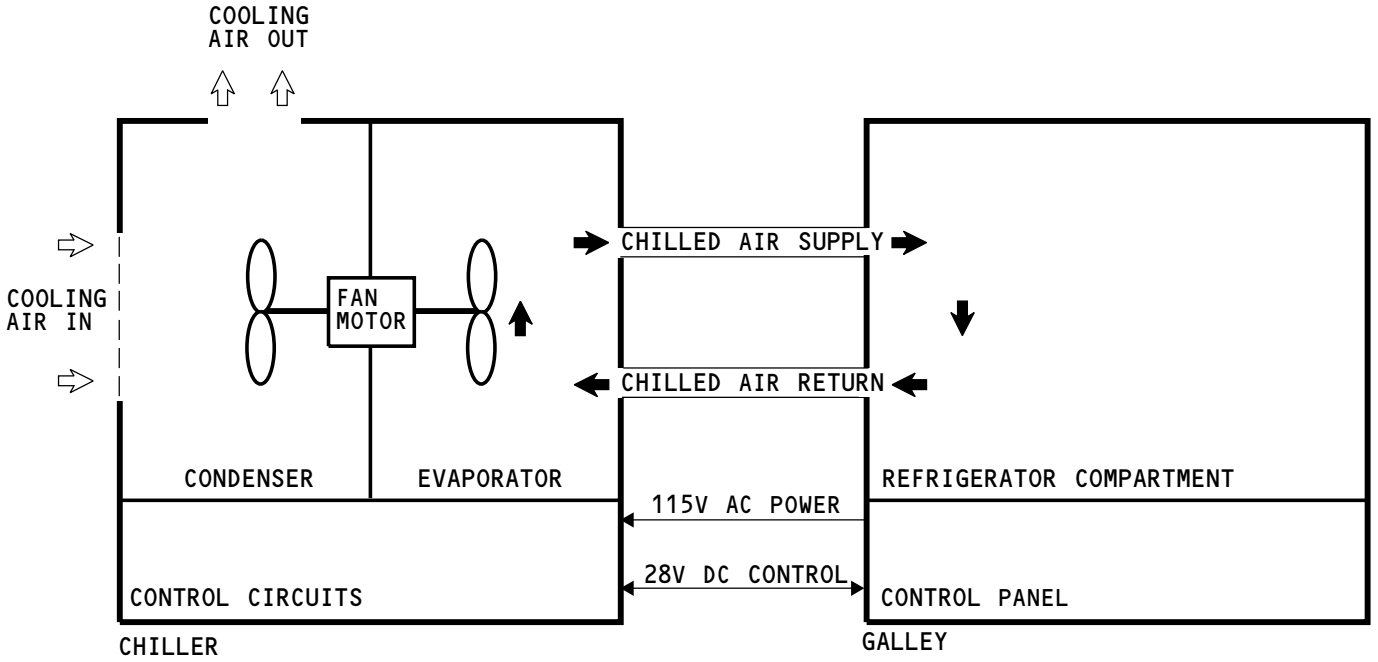
BUFFET AND GALLEY - AIR CHILLER - FUNCTIONAL DESCRIPTION

Functional Description

A vapor-cycle refrigeration system in the chiller uses a condenser and evaporator to transfer heat. A fan brings condenser cooling air in through a filter then exhausts that air through an outlet. Another fan moves chilled air from the evaporator through the galley refrigerator compartment then back to the evaporator. The evaporator cools the air to a temperature of 32F (0C).

The galley supplies 115/208v ac, three-phase power to operate the chiller. A control panel at the galley provides control and indication. Control signals are 28v dc.

A switch (not shown) at the galley turns the chiller on and off. Other crew action is not necessary to operate the chiller. The chiller defrosts automatically and shuts off if there is a malfunction.



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BUFFET AND GALLEY - AIR CHILLER - FUNCTIONAL DESCRIPTION

LAVATORIES - INTRODUCTION

General Description

The airplane has flex and fixed lavatories. Flex lavatories attach to the seat tracks. You can install or move the lavatories anywhere in the flexibility zone. Fixed lavatories go in a specific place in the airplane and cannot be moved.

There are two kinds of lavatories: center and outboard. Center lavatories have straight sides and go in the center of the passenger compartment. Outboard lavatories have a curved side to fit against the side of the passenger compartment.

Location - Center Flex Lavatories

These are the possible center flex lavatory positions at door 2:

- 2F-LC (door 2 forward - left center)
- 2F-RC (door 2 forward - right center
- 2A-LC (door 2 aft - left center)
- 2A-RC (door 2 aft - right center).

These are the possible center flex lavatory positions at door 3:

- 3F-LC (door 3 forward - left center)
- 3F-RC (door 3 forward - right center)
- 3A-LC (door 3 aft - left center)
- 3A-RC (door 3 aft - right center).

These are the possible center flex lavatory positions at door 4:

- 4F-LC (door 4 forward - left center)
- 4F-RC (door 4 forward - right center)
- 4A-LC (door 4 aft - left center)
- 4A-RC (door 4 aft - right center).

These are the possible center flex lavatory positions at door 5:

- 5F-LC (door 5 forward - left center)
- 5F-RC (door 5 forward - right center).

Location - Outboard Flex Lavatories

These are the possible outboard flex galley positions at door 2:

- 2A-1R (door 2 aft - position 1 right)
- 2F-1L (door 2 forward - position 1 left)
- 2F-1R (door 2 forward - position 1 right)

These are the possible outboard flex galley positions at door 3:

- 3F-1L (door 3 forward - position 1 left)
- 3F-1R (door 3 forward - position 1 right)
- 3A-1L (door 3 aft - position 1 left)
- 3A-1R (door 3 aft - position 1 right).

These are the possible outboard flex galley positions at door 4:

- 4F-1L (door 4 forward - position 1 left)
- 4F-1R (door 4 forward - position 1 right)
- 4A-1L (door 4 aft - position 1 left)
- 4A-1R (door 4 aft - position 1 right).

Location - Fixed Lavatories

These are the possible fixed lavatory positions at door 1:

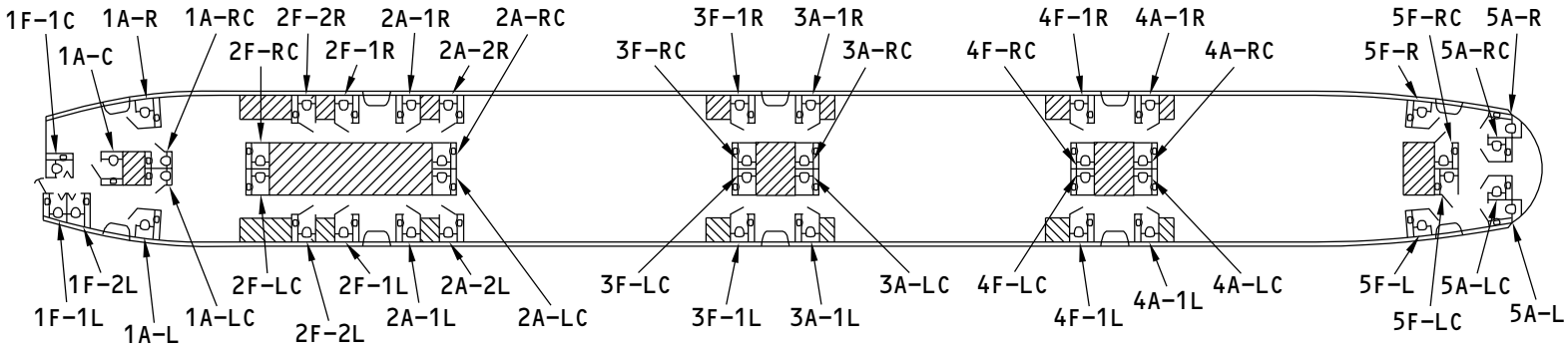
- 1F-1L (door 1 forward - position 1 left)
- 1F-1C (door 1 forward - position 1 center)
- 1F-2L (door 1 forward - position 2 left)
- 1A-L (door 1 aft - left)
- 1A-C (door 1 aft - center)
- 1A-R (door 1 aft - right)
- 1A-LC (door 1 aft - left center)
- 1A-RC (door 1 aft - right center).

EFFECTIVITY
ARO ALL

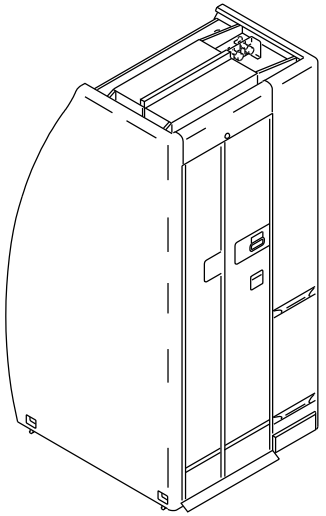
LAVATORIES - INTRODUCTION

These are the possible fixed lavatory positions at door 5:

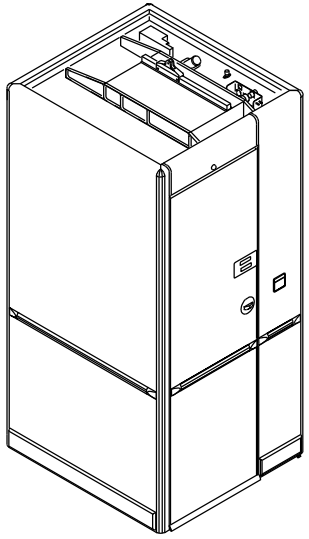
- 5F-L (door 5 forward - left)
- 5F-R (door 5 forward - right)
- 5A-L (door 5 aft - left)
- 5A-R (door 5 aft - right)
- 5A-LC (door 5 aft - left center)
- 5A-RC (door 5 aft - right center).



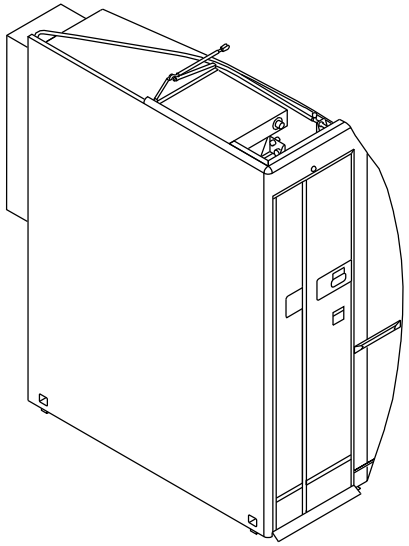
LAVATORY LOCATIONS



OUTBOARD LAVATORY



CENTER LAVATORY



AFT SIDE LAVATORY

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LAVATORIES - INTRODUCTION

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LAVATORIES - LAVATORY EQUIPMENT

General

This is a list of the usual equipment that is part of most lavatories:

- Call light/reset switch
- Bi-fold door or single panel door
- Door hold open device (bi-fold door only)
- Door emergency latch release
- Passenger service unit
- Mirrors
- Shaver outlet
- Soap dispenser
- Waste compartment flapper door
- Sink
- Waste container compartment
- Water system compartment
- Fluorescent light
- Fluorescent light override switch
- Passenger information sign
- Amenities dispenser
- Diaper board
- Facet
- Attendant call switch
- Toilet flush switch
- Toilet shroud assembly
- Toilet (not shown)
- Air vent (not shown) toilet area
- Kickstrip.

The lavatories with equipment for handicapped persons have these additional components:

- Mirror on the door (not shown)
- Attendant call switch adjacent to the toilet (not shown).

The usual passenger service unit contains this type of equipment:

- Oxygen module
- Smoke detector
- Dome light
- Air outlet
- Speaker.

See the passenger oxygen section for more information about the oxygen equipment (SECTION 35-21).

See the passenger (or personnel) address system section for more information about the passenger (or personnel) address system (SECTION 23-31).

See the lavatory smoke detection section for more information about the smoke detector (SECTION 26-13).

The usual arrangement for the mirrors is one fixed mirror and one that you can open. The mirror that opens has a latch. The usual location of the latch release button is in the lower part of the amenities dispenser, near the lavatory door (the left side of the mirror as you look at it). Some lavatories can have the latch release button in a different location. The latch release button can be in the lower part of the amenities dispenser, near the right side of the mirror. The mirror that opens gives access to this type of equipment:

- Water shutoff valve
- Shaver outlet
- Shaver converter
- Passenger signs
- Ballast for the fluorescent light
- Lavatory supplies.

See the lights chapter for more information about lights, passenger information signs, and the attendant call switch (CHAPTER 33).

The shaver outlet supplies 115v AC, 60 Hz power to operate electric shavers.

The waste compartment flapper door is part of the fire containment system for the waste compartment. The flapper is spring load to the close position. If you hold the flapper open and look inside, you can see the temperature indicator for the waste compartment.

The waste container compartment has this equipment:

- Access door and latch assembly (part of the fire containment system)
- Halon fire bottle
- Waste container
- Water system access door secondary latch.

See the lavatory waste compartment fire extinguishing section for more information about the fire extinguisher (SECTION 26-24).

Water system compartment has this equipment:

- Access door and latch assembly
- Water heater
- Drain valve
- Lavatory supplies.

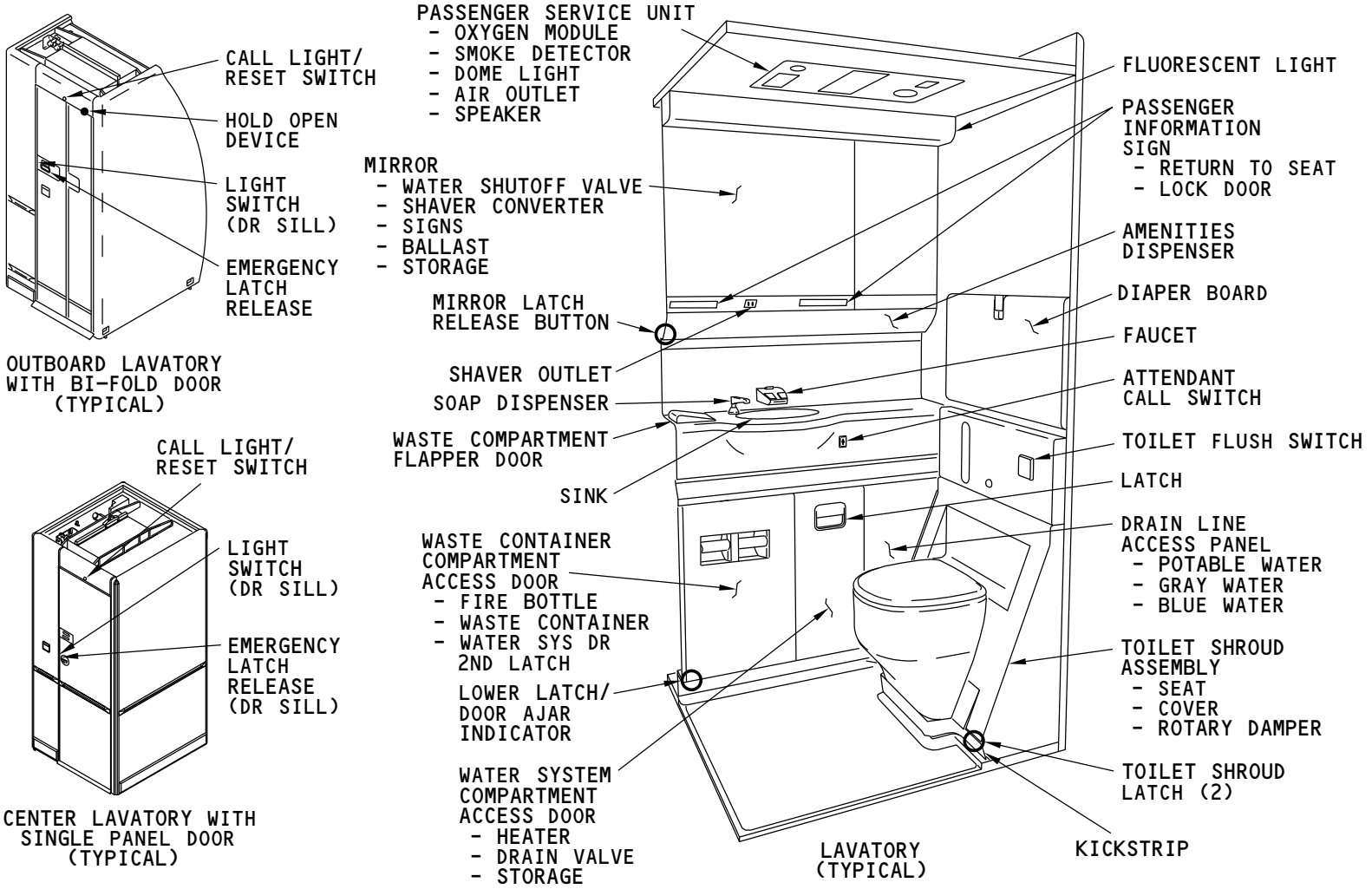
You use the latch handle on the face of the water system compartment access door to open the door part of the way. This gives you access to the lavatory supplies. You use the secondary latch, behind the waste container compartment to open/remove the door to get access to the water system components.

See the water and waste chapter for more information about the water heater, water shutoff valve and water drain valve (SECTION 38-00).

The amenities dispenser holds things like paper cups, motion sickness bags, and facial tissue.

The lavatories have vacuum toilets.

See the water and waste chapter for more information about the toilets (CHAPTER 38).



LAVATORIES - LAVATORY EQUIPMENT

LAVATORIES - TRAINING INFORMATION POINTS - UPPER CONNECTIONS

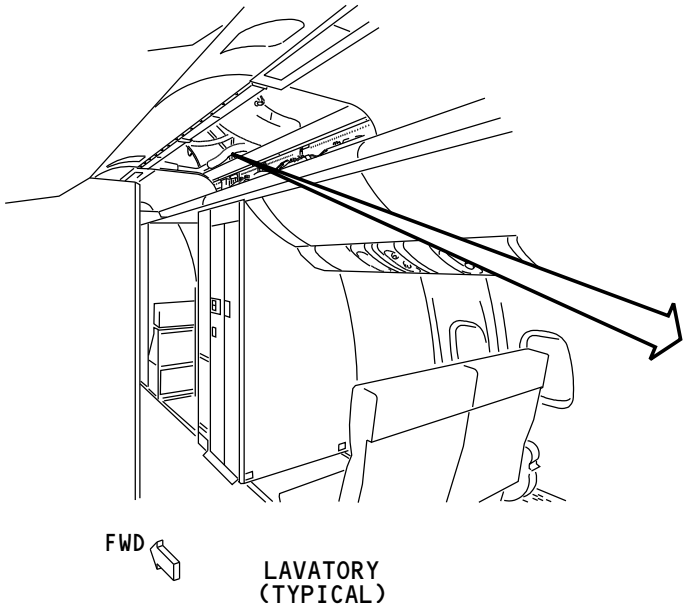
Training Information Point

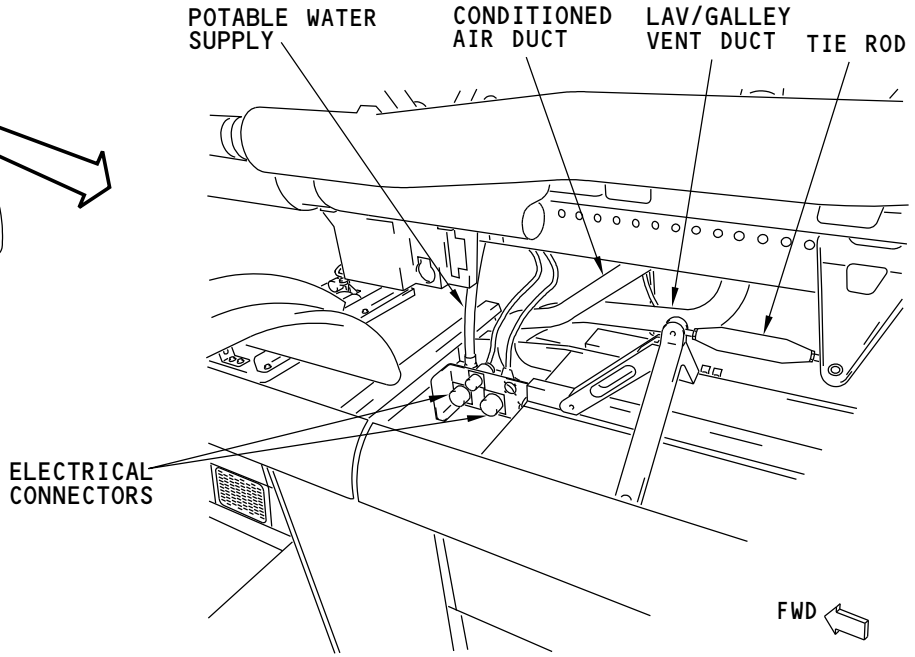
Tie rods attach the top of the lavatories to the airplane structure. When you install a lavatory, adjust the length of the tie rod to fit without preload.

These connections are above the lavatory:

- Electrical
- Air conditioning
- Lav/galley vent.

Remove the ceiling panel adjacent to the lavatory to get access to the connections.





LAVATORY UPPER CONNECTIONS
(TYPICAL)

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LAVATORIES - TRAINING INFORMATION POINTS - UPPER CONNECTIONS

LAVATORIES - TRAINING INFORMATION POINTS - LOWER CONNECTIONS

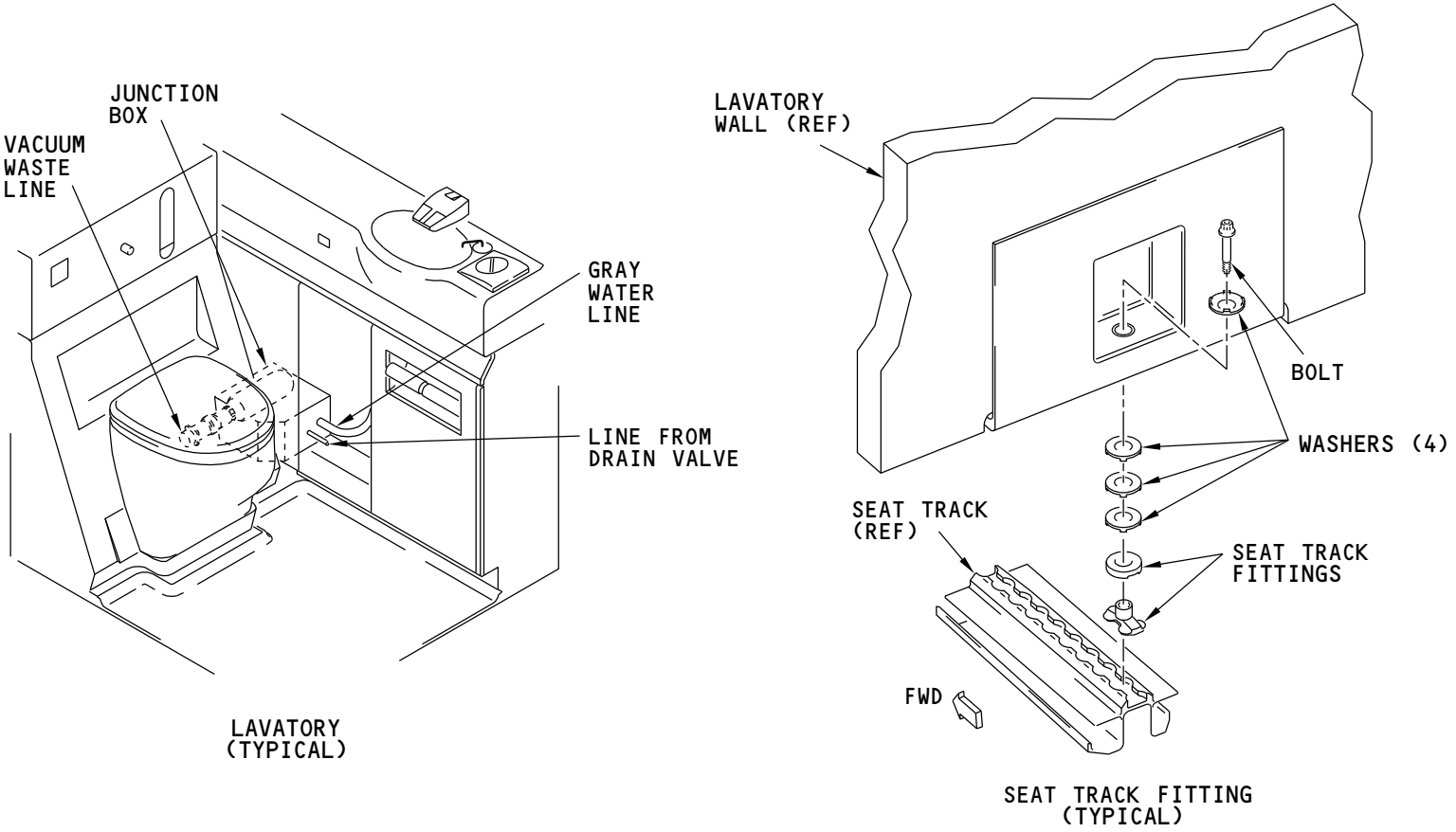
Training Information Point

Water and waste connections are inside the toilet junction box. The junction box is inside the wash basin cabinet or behind the toilet shroud.

Bolts and fittings attach the lavatories to the seat tracks. Four washers are necessary at each of the fittings for proper bolt thread engagement. Put washers between the upper fitting and the lavatory as necessary to make the lavatory perpendicular to the floor. Install these washers with the tabs down. Put the remaining washers under the bolt head with the tabs up.

You must install special seat track fittings (not shown) at lavatory locations at the seat track splices. It is possible that tolerance build-ups in the seat tracks will not permit you to install the standard fittings at the seat track splices. The special fittings align to the seat track lip to permit installation of the fittings at the splice.

The upper fitting has an eccentric hole. When you install a lavatory, position all the fittings with the offset forward. If the fitting holes do not line up, rotate the aft pair of upper fittings 180 degrees.



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LAVATORIES - TRAINING INFORMATION POINTS - LOWER CONNECTIONS

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LOWER LOBE CARGO COMPARTMENT - INTRODUCTION

General Description

The lower lobe cargo compartments include forward, aft, and bulk cargo compartments. Heating and ventilating systems control the temperature and air quality in the lower lobe cargo compartments. The airplane can carry live animals in the bulk cargo compartment.

The lower lobe cargo compartments are class C for fire protection and have these features:

- Smoke detection systems tell the crew of smoke in the cargo compartments
- Cargo compartments have fire extinguishing systems which operate from the flight deck
- Compartment linings and the environmental control systems keep dangerous quantities of smoke and extinguishing agent out of the passenger and crew cabins
- Compartment linings meet specified burn through requirements.

Cargo linings make a closed area for the cargo compartments but permit access to other systems. Closed compartments are necessary for fire protection and temperature control.

WARNING SEAL THE COMPARTMENT WITH THE LINERS. OBEY THE INSTRUCTIONS IN THE SPECIFIED PROCEDURE WHEN YOU INSTALL THE LINERS. IF YOU INSTALL THE LINERS INCORRECTLY, THE FIRE WILL NOT BE CONTAINED AND THE EXTINGUISHING AGENT OR SMOKE CAN GET INTO THE PASSENGER COMPARTMENT DURING A FIRE.

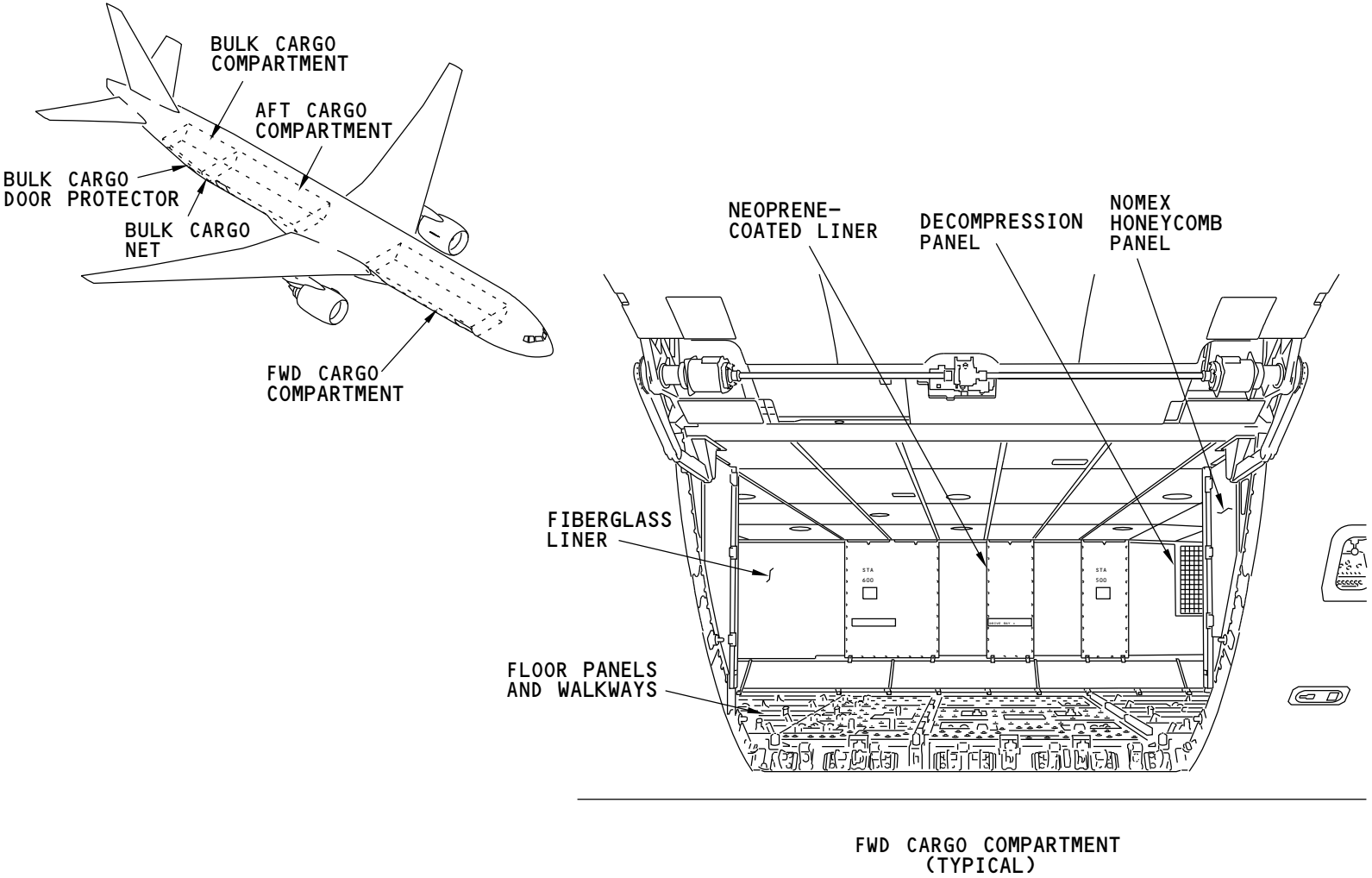
Lower lobe cargo compartments have these items:

- Bulk cargo door protector
- Bulk cargo net
- Floor panels and walkways
- Fiberglass liners
- Neoprene-coated liner
- Decompression panels
- Nomex honeycomb panels.

Training Information Point

When you work in the cargo compartment, install a safety barrier in the doorway.

WARNING INSTALL THE SAFETY BARRIER CORRECTLY WHEN THE CARGO DOOR IS OPEN. IF YOU DO NOT CORRECTLY INSTALL THE SAFETY BARRIER, PERSONS CAN FALL OUT OF THE CARGO COMPARTMENT AND INJURY CAN OCCUR.



FWD CARGO COMPARTMENT
(TYPICAL)

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LOWER LOBE CARGO COMPARTMENT - INTRODUCTION

LOWER LOBE CARGO COMPARTMENT - FIBERGLASS LINERS

Purpose

Fiberglass liners help isolate the cargo compartments from other parts of the airplane for fire protection and temperature control. The bulk cargo compartment liners also help transmit cargo loads to the airplane structure.

Physical Description

These cargo compartment liners are made from rigid fiberglass material:

- Sidewall liners
- Ceiling liners
- Station 1437 end wall.

These devices attach the fiberglass liners to the structure:

- Bolts
- Screws
- Scrivets
- Hook-and-loop tape.

Tape seals the edges and seams.

Location

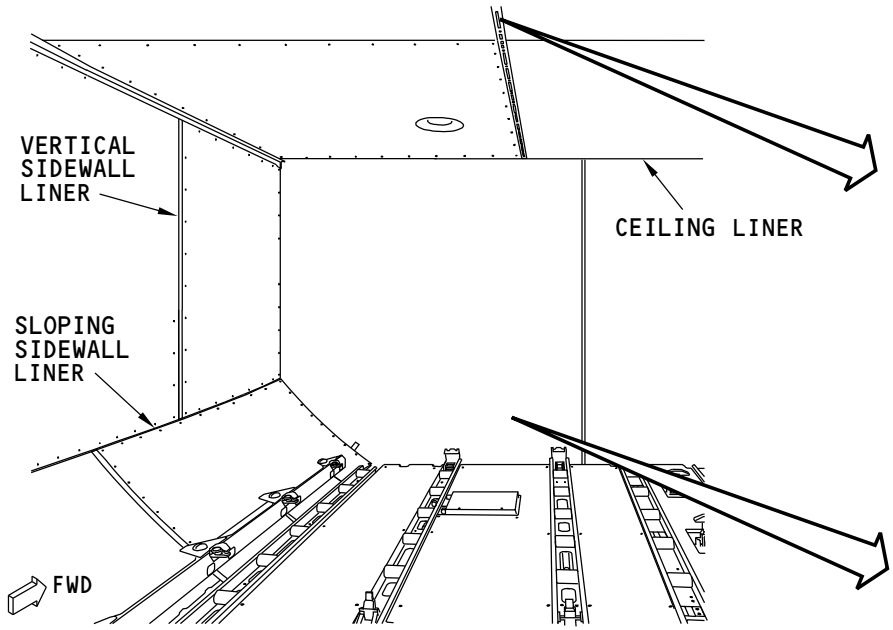
Sidewall liners extend from the floor to the ceiling along both sides of the forward, aft and bulk cargo compartments. The upper liner is a vertical sidewall liner. The lower liner is a sloping sidewall liner.

Ceiling liners make the ceilings of the cargo compartments.

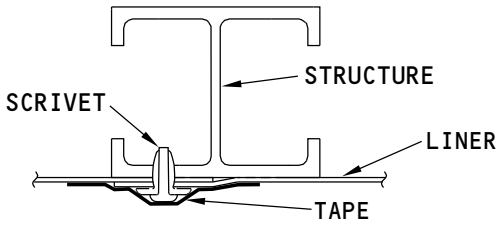
The station 1437 end wall is at the forward end of the aft cargo compartment.

Training Information Point

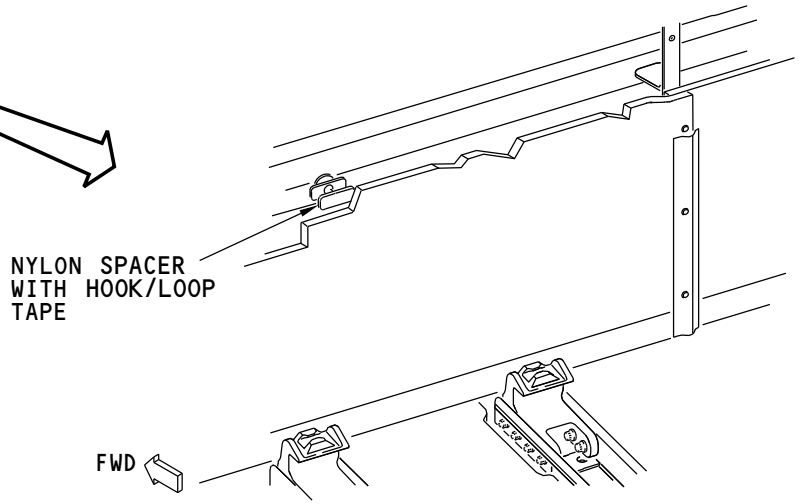
You must repair fiberglass liners which have cuts, tears or holes. If the damage is in specified limits, you can repair the liner with a patch. Otherwise you must replace the damaged liner. Special patch kits permit you to make bonded patch repairs without removing the liner from the airplane.



AFT CARGO COMPARTMENT
(TYPICAL)



FIBERGLASS LINER ATTACHMENT
(TYPICAL)



STATION 1437 END WALL
(AFT CARGO COMPARTMENT)

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LOWER LOBE CARGO COMPARTMENT - FIBERGLASS LINERS

LOWER LOBE CARGO COMPARTMENT - NEOPRENE-COATED LINER

Purpose

Neoprene-coated liners help isolate the cargo compartments from other parts of the airplane for fire protection and temperature control. Neoprene-coated liners are also access panels to equipment behind them.

Physical Description

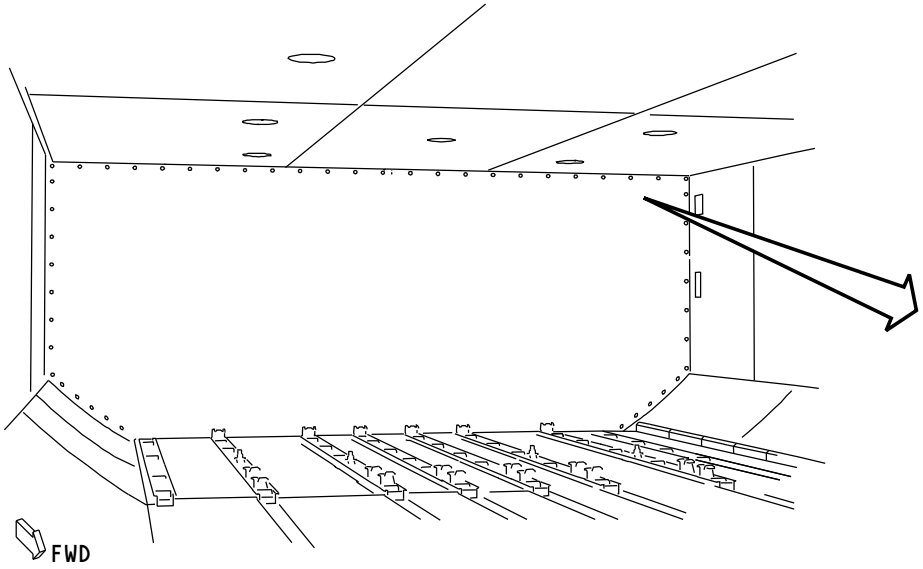
The liners are made from flexible neoprene-coated fiberglass. Snaps hold the liners in place.

Location

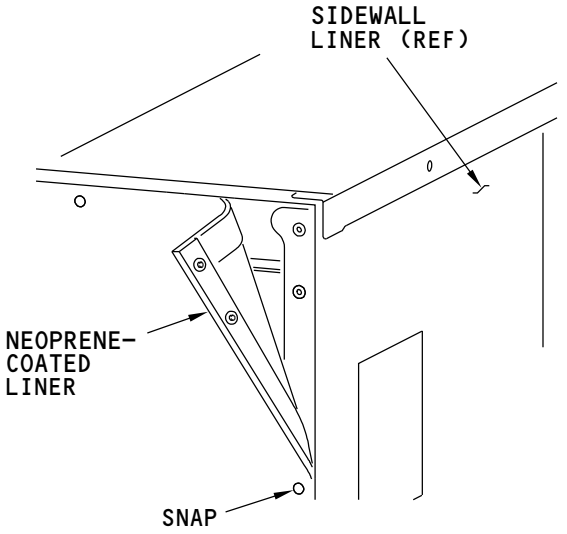
The station 998 end wall is a neoprene-coated liner. It is at the aft end of the forward cargo compartment. Some of the vertical sidewall linings (not shown) in the forward and aft cargo compartments are also this type.

Training Information Point

You must repair cuts, tears or holes in the neoprene-coated liners. If the damage is in specified limits, you can repair the liner with a patch. Otherwise, you must replace the damaged liner.



FORWARD CARGO COMPARTMENT



STATION 998 END WALL

M40446 S000616797_V1

LOWER LOBE CARGO COMPARTMENT - NEOPRENE-COATED LINER

LOWER LOBE CARGO COMPARTMENT - NOMEX HONEYCOMB PANELS

Purpose

The Nomex honeycomb panels help isolate the cargo compartments from other parts of the airplane for fire protection and temperature control. The panels also transmit cargo loads to the airplane structure.

Physical Description

These cargo compartment liners are made from Nomex honeycomb panels:

- Station 2062 end wall
- Waste tank enclosure panels
- Main equipment center bulkhead liner.

Latches and quarter-turn fasteners attach the station 2062 end wall to the structure.

Quarter-turn fasteners attach the waste tank enclosure panels to the structure.

The access door to the main equipment center has a hinge on the outboard side. A door restraint holds the door open. The door restraint folds to let the door close. Latches hold the door closed. Quarter-turn fasteners attach the stationary main equipment center bulkhead liners to the structure.

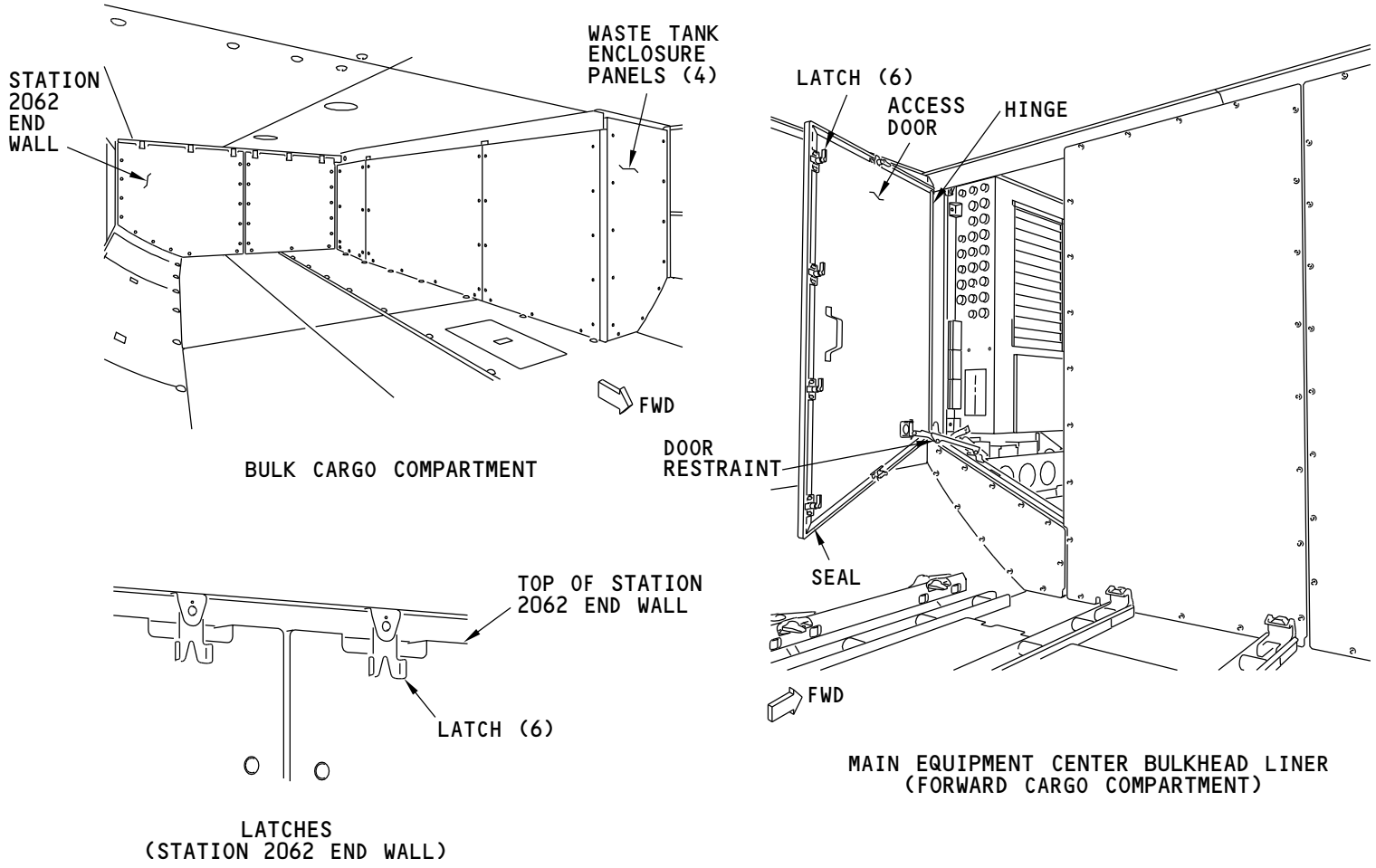
The main equipment center access door and all the panels have built-in seals.

Location

The station 2062 end wall is at the aft end of the bulk cargo compartment.

The waste tank enclosure panels are on the left side of the bulk cargo compartment.

The main equipment center bulkhead liner is at the forward end of the forward cargo compartment.



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LOWER LOBE CARGO COMPARTMENT - NOMEX HONEYCOMB PANELS

LOWER LOBE CARGO COMPARTMENT - EQUIPMENT RACK ACCESS DOORS

Physical Description

These equipment rack access doors are made from Nomex honeycomb sandwich material:

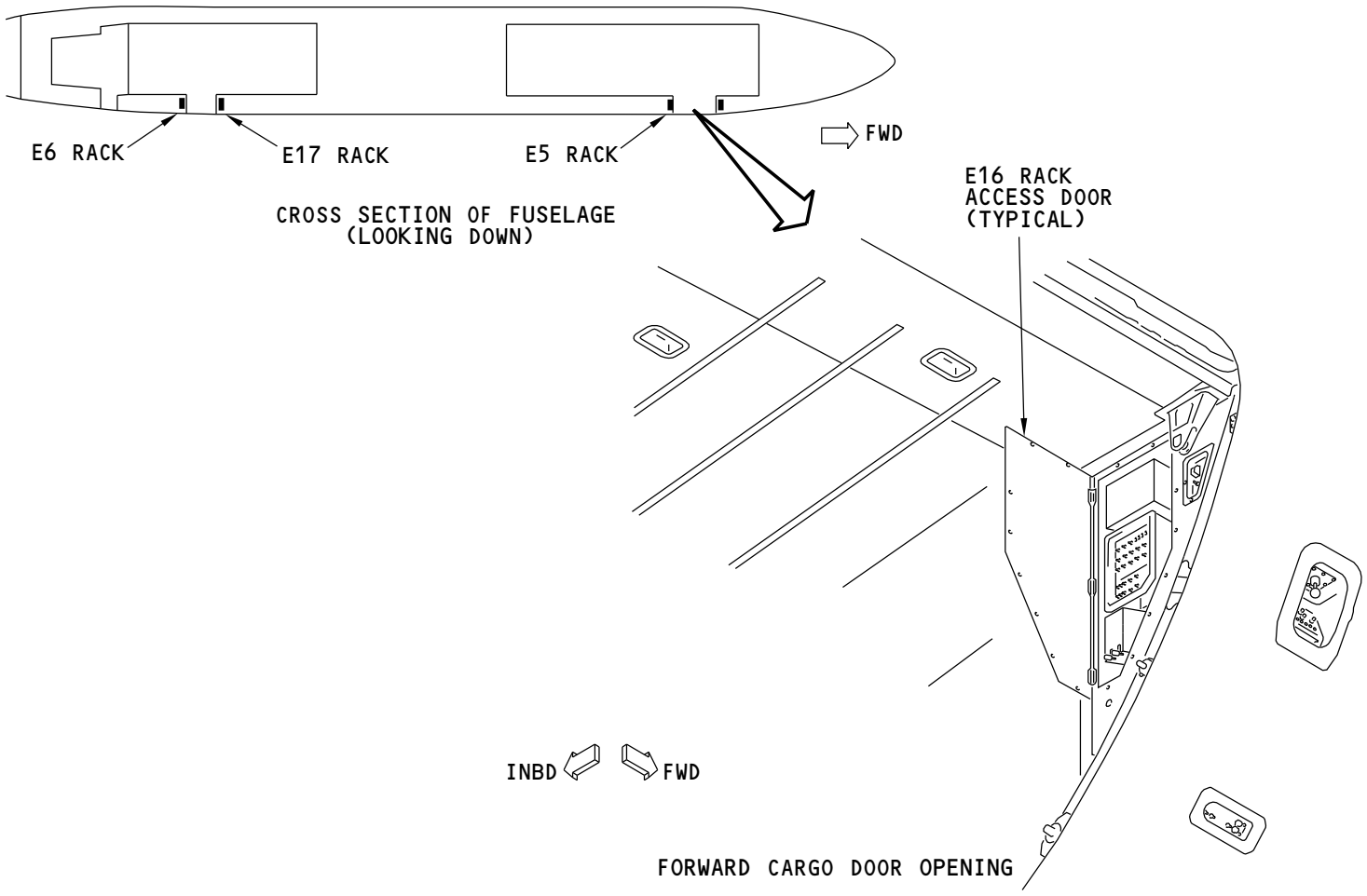
- E6 equipment rack
- E17 equipment rack
- E5 equipment rack
- E16 equipment rack.

The doors have a hinge on the inboard side. Quarter-turn fasteners hold the doors closed. The access doors have built-in seals.

Location

The E6 rack is at the aft edge of the aft cargo door opening. The E17 rack is at the forward edge of the aft cargo door opening.

The E5 rack is at the aft edge of the forward cargo door opening. The E16 rack is at the forward edge of the forward cargo door opening.



M40448 S000616799_V1

LOWER LOBE CARGO COMPARTMENT - EQUIPMENT RACK ACCESS DOORS

LOWER LOBE CARGO COMPARTMENT - DECOMPRESSION PANELS

Purpose

Decompression panels prevent fuselage structural damage if there is sudden decompression of the passenger compartment.

Physical Description

The decompression panel has these parts:

- Frame
- Vent
- Seal
- Blowout panel.

The blowout panel is a thin sheet of fiberglass held in the frame by seals. The vent is an aluminum grate which protects the blowout panel from impact. Bolts (not shown) hold the vent to the frame.

Screws go through the frame to hold the decompression panel in place. Tape seals the frame to the cargo compartment liner.

Location

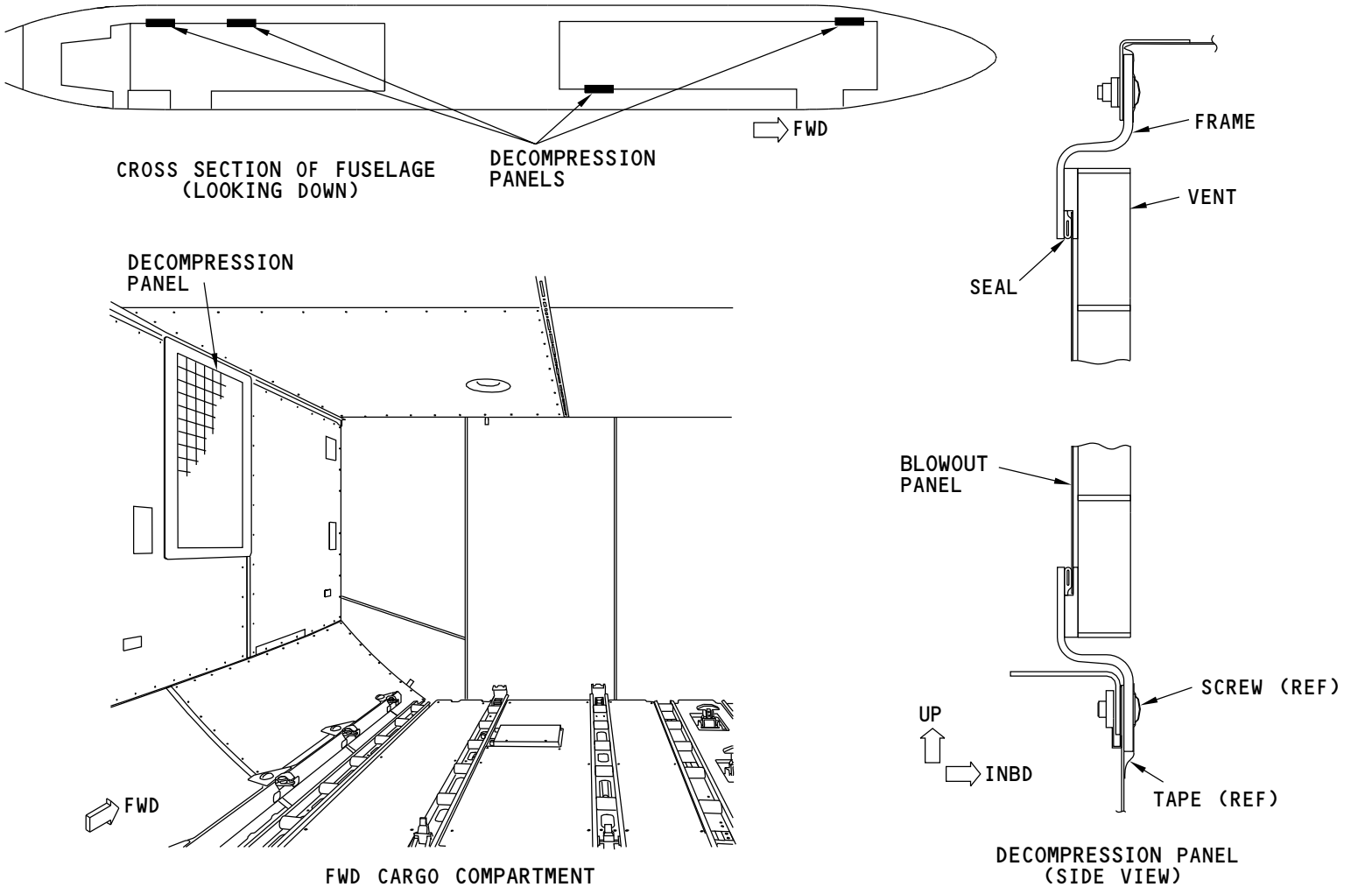
Two decompression panels are in the forward cargo compartment, one on the left side and one on the right side. Two panels are in the aft cargo compartment on the left side.

Functional Description

The blowout panel normally seals air inside the cargo compartment. If there is a rapid decompression of the passenger compartment, differential pressure pushes the blowout panel from the frame. Pressure in the cargo compartment quickly becomes equal to the reduced pressure in the passenger compartment. This prevents damage to the passenger compartment floor from too much pressure against the underside.

Training Information Point

The decompression panel must be air-tight for proper fire protection; the panel must be installed and sealed correctly. The blowout panel must be held to the frame on all four sides by the seals.



M40450 S000616801_V1

LOWER LOBE CARGO COMPARTMENT - DECOMPRESSION PANELS

LOWER LOBE CARGO COMPARTMENT - FLOOR PANELS AND WALKWAYS

Purpose

Floor panels and walkways make it easy for the ground crew to move around inside the cargo compartments.

The aft end of the floor panels and walkways make a smoke barrier between the cargo compartments and other areas of the airplane.

Physical Description

The floor panels and walkways are made of fiberglass-faced Nomex honeycomb core sandwich panel material. Countersunk screws attach the panels to the support structure.

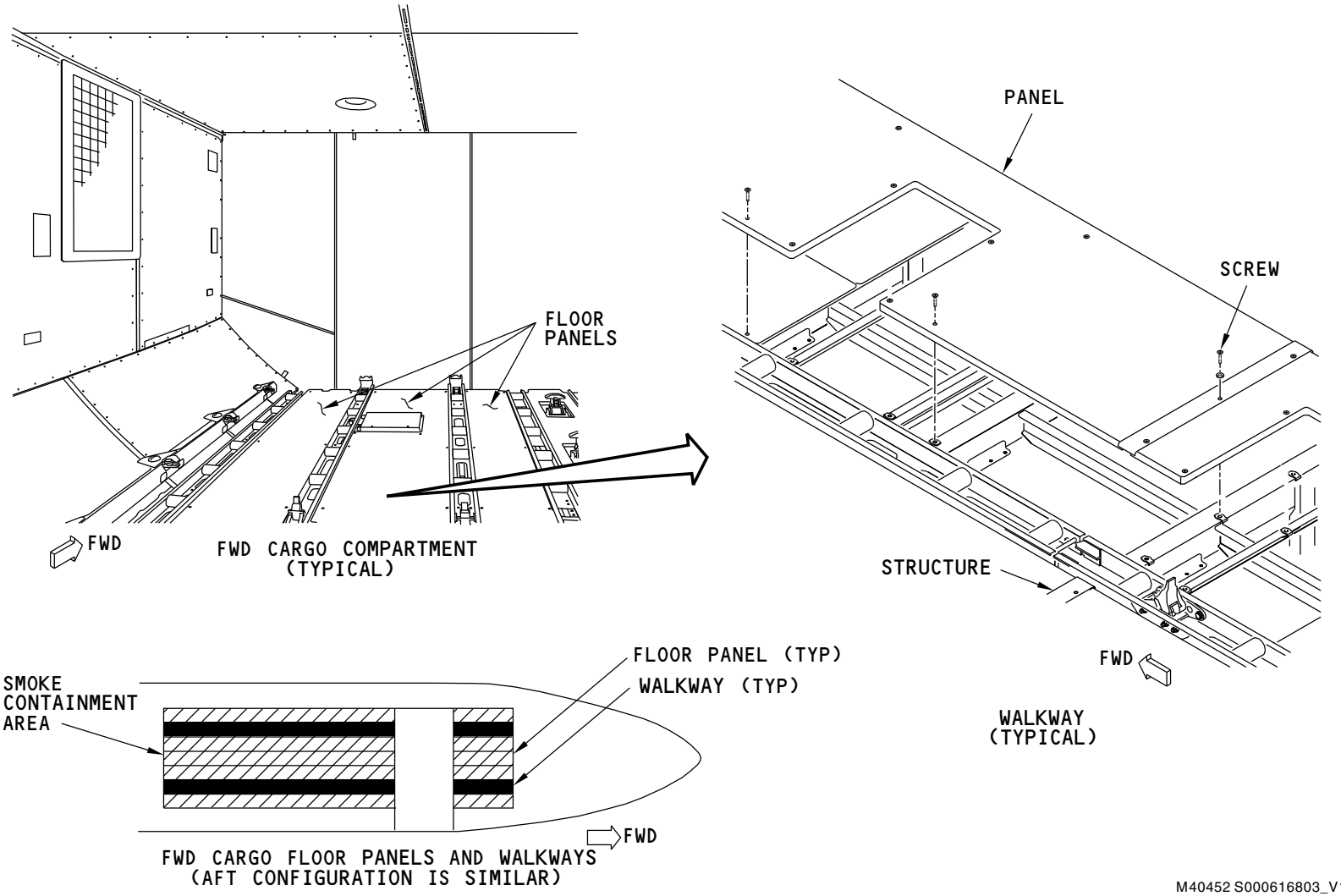
The smoke containment panels in the forward cargo compartment are made of laminated fiberglass with a layer of tedlar film.

The smoke containment panels in the aft cargo compartment are the same material as the floor panels.

Location

Floor panels and walkways are in the floor of the forward and aft cargo compartments.

The smoke containment panels are at the aft end of the forward and aft cargo compartments.



M40452 S000616803_V1

LOWER LOBE CARGO COMPARTMENT - FLOOR PANELS AND WALKWAYS

LOWER LOBE CARGO COMPARTMENT - BULK CARGO FLOOR

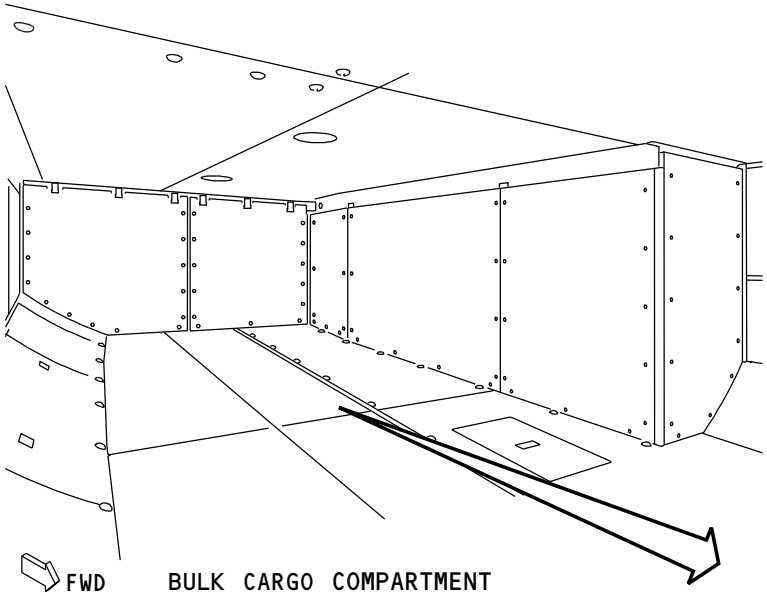
Purpose

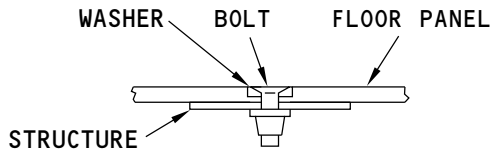
The bulk cargo compartment floor supports the cargo.

Physical Description

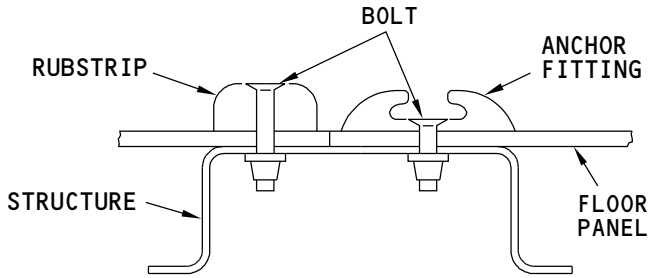
Bulk cargo floor panels are made of aluminum-fiberglass laminate material. Three layers of sheet aluminum are bonded to two layers of fiberglass sheet.

Bolts attach the floor panels to the structure. Anchor fittings attach tie downs and cargo nets to the floor. Rubstrips protect the floor.

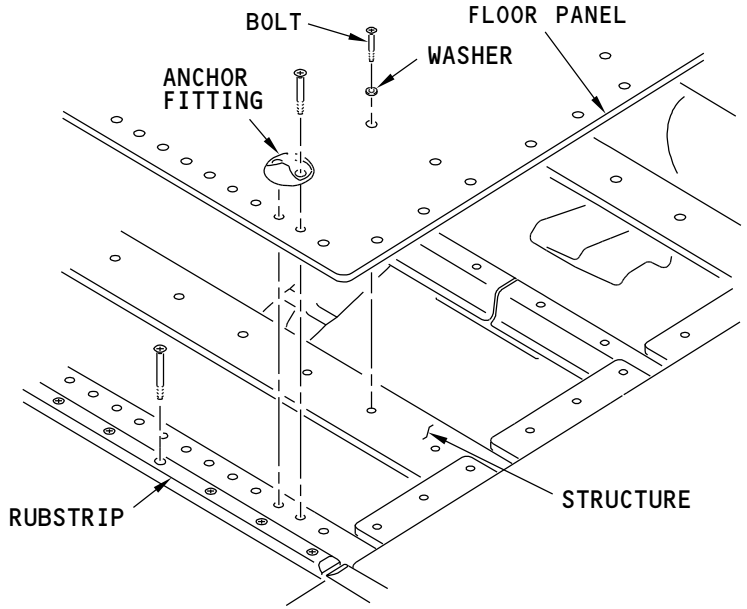




FLOOR PANEL ATTACHMENT



ANCHOR AND RUBSTRIP ATTACHMENT



BULK CARGO FLOOR

M40454 S000616805_V1

LOWER LOBE CARGO COMPARTMENT - BULK CARGO FLOOR

LOWER LOBE CARGO COMPARTMENT - BULK CARGO NETS

Purpose

The bulk cargo divider net keeps cargo in the bulk cargo compartment. The divider net also isolates the aft and bulk cargo compartments for temperature control.

The door net helps keep cargo clear of the bulk cargo door opening.

Physical Description

The divider net is nylon webbing with an insulation blanket attached.

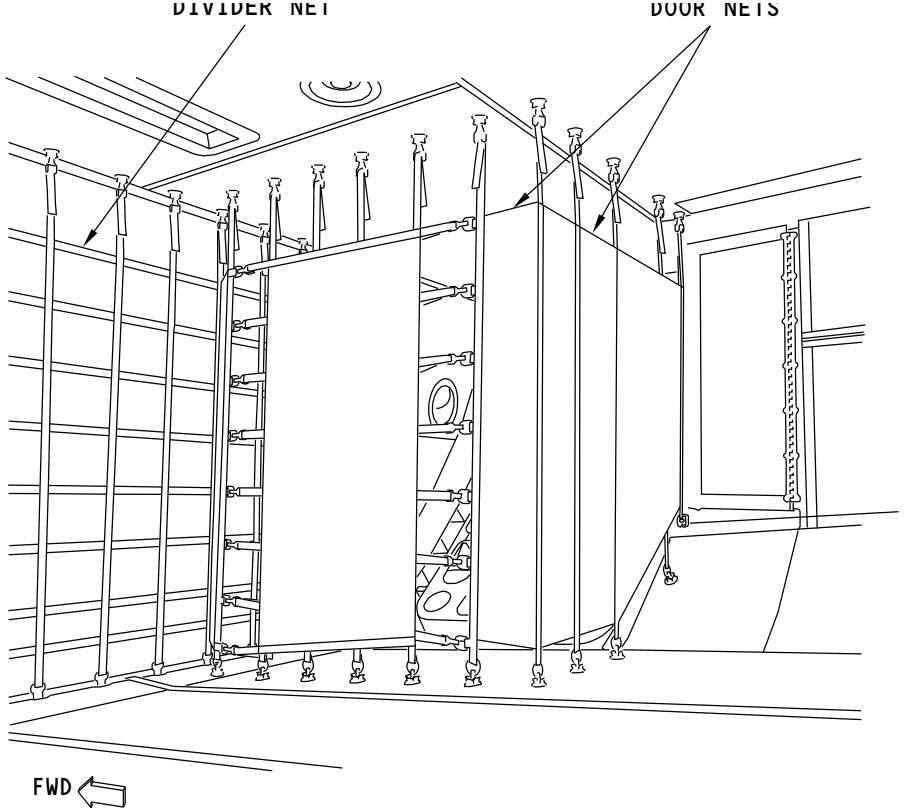
The door net is nylon fabric reinforced with nylon webbing.

Adjustable fittings attach the nets to the structure.

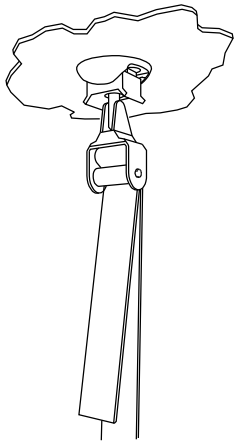
Location

The divider net is at the forward end of the bulk cargo compartment.

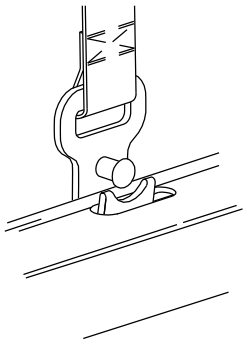
The door net is in the bulk cargo compartment, aft and inboard of the door opening.



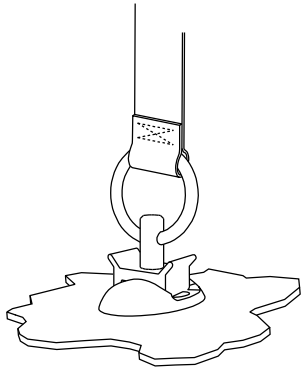
BULK CARGO AREA
(TYPICAL)



UPPER ATTACHMENT FITTING



LOWER ATTACHMENT FITTING
(DIVIDER NET)



LOWER ATTACHMENT FITTING
(DOOR NET)

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LOWER LOBE CARGO COMPARTMENT - BULK CARGO NETS

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CARGO HANDLING SYSTEM - INTRODUCTION

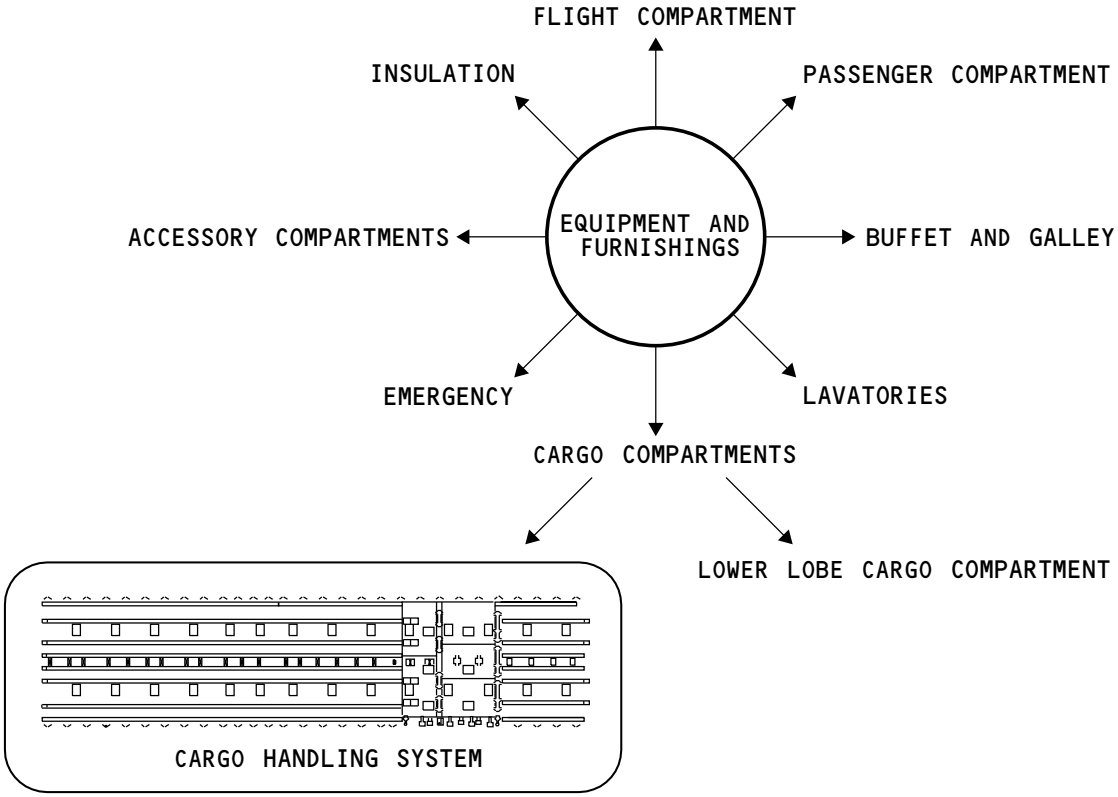
General

The cargo handling system lets a single operator safely load, unload, and lock cargo.

Cargo handling is a subsystem of equipment and furnishings.

Abbreviations and Acronyms

- aux - auxiliary
- CAN - controller area network
- cmd - command
- CMDU - cargo maintenance display unit
- CSC - cargo system controller
- ctr - center
- EMI - electro-magnetic interference
- fwd - forward
- LBL - left buttock line
- LCD - large cargo door
- LD - load device
- LD - lower deck
- LED - light emitting diode
- LRU - line replaceable unit
- MCP - master control panel
- MEC - main equipment center
- PSEU - proximity sensor electronics unit
- PDU - powered drive unit
- ref - reference
- ret - retractable
- RBL - right buttock line
- STA - station line
- typ - typical
- ULD - unit load device



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CARGO HANDLING SYSTEM - INTRODUCTION

CARGO HANDLING SYSTEM - GENERAL DESCRIPTION

General

The forward and aft cargo compartments each have cargo handling systems. Operation of the two systems is similar. Both systems use electrically and manually operated components. The bulk cargo compartment does not have a cargo handling system.

Controls

The controls for the forward and aft cargo handling systems are similar. The controls are near the forward part of the cargo door openings. You operate and set the forward or aft cargo handling systems using these interior and exterior controls:

- Secondary joystick
- Cargo control joystick
- Cargo handling control panel.

The cargo system controller (CSC) uses inputs from the interior and exterior controls to position the electrically operated system components. The controller does not affect manually operated components.

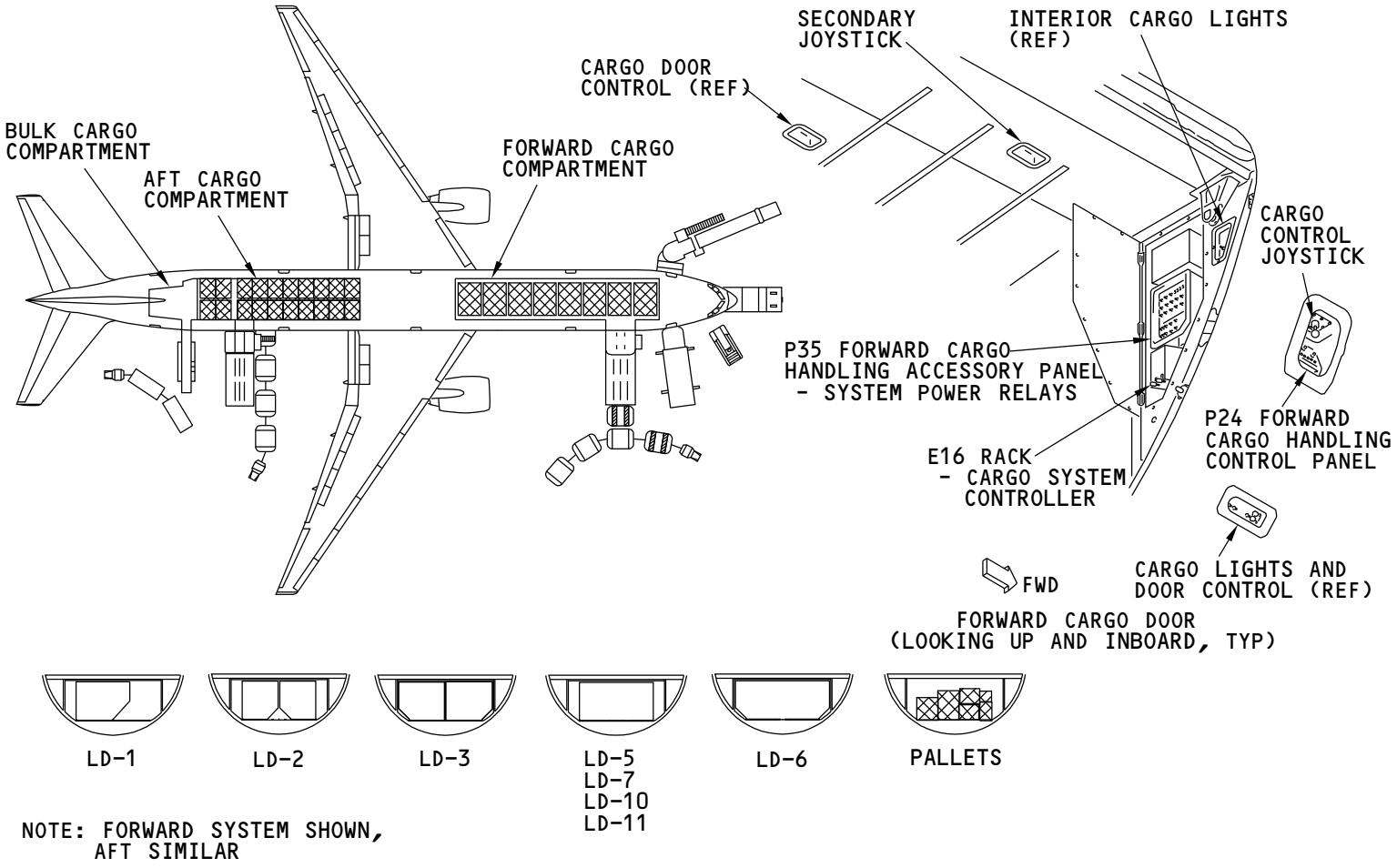
The cargo handling accessory panels have system power relays and circuit breakers.

You can manually operate the components that are normally electrically operated if electrical power is not available.

Unit Load Devices

The cargo handling system lets the airplane carry different sizes of unit load devices (ULDs). The ULD can refer to a pallet and net, a pallet and net over an igloo, or a container. Each ULD is shown by size code, nominal dimensions, and the common name. The airplane can carry unit load devices (ULDs) matching these sizes:

- Size Code A, 88 x 125 inches, LD-7, LD-9, P1
- Size Code K, 60 x 61 inches, LD-1, LD-3, LD-3 Pallet
- Size Code L, 60 x 125 inches, LD-5, LD-6, LD-10, LD-11, Half Pallet
- Size Code M, 96 x 125 inches, P6
- Size Code N, 96 x 61 inches, Half Pallet
- Size Code P, 60 x 47 inches, LD-2
- Size Code Q, 96 x 60 inches, LD-4, LD-8



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CARGO HANDLING SYSTEM - GENERAL DESCRIPTION

CARGO HANDLING SYSTEM - FWD CARGO ELECTRICAL/MECHANICAL COMPONENT LOCATIONS

General

The forward cargo handling system has electrical/mechanical components that let you load and unload ULDs.

These are the electrical/mechanical components:

- Powered drive units (PDUs)
- Lateral guides.

The usual operation of the electrical/mechanical components is automatically controlled by the cargo system controller. Some automatically controlled components you may operate manually. These are the components you may operate manually:

- Lateral guides.

Location

PDUs are in all areas of the cargo compartment.

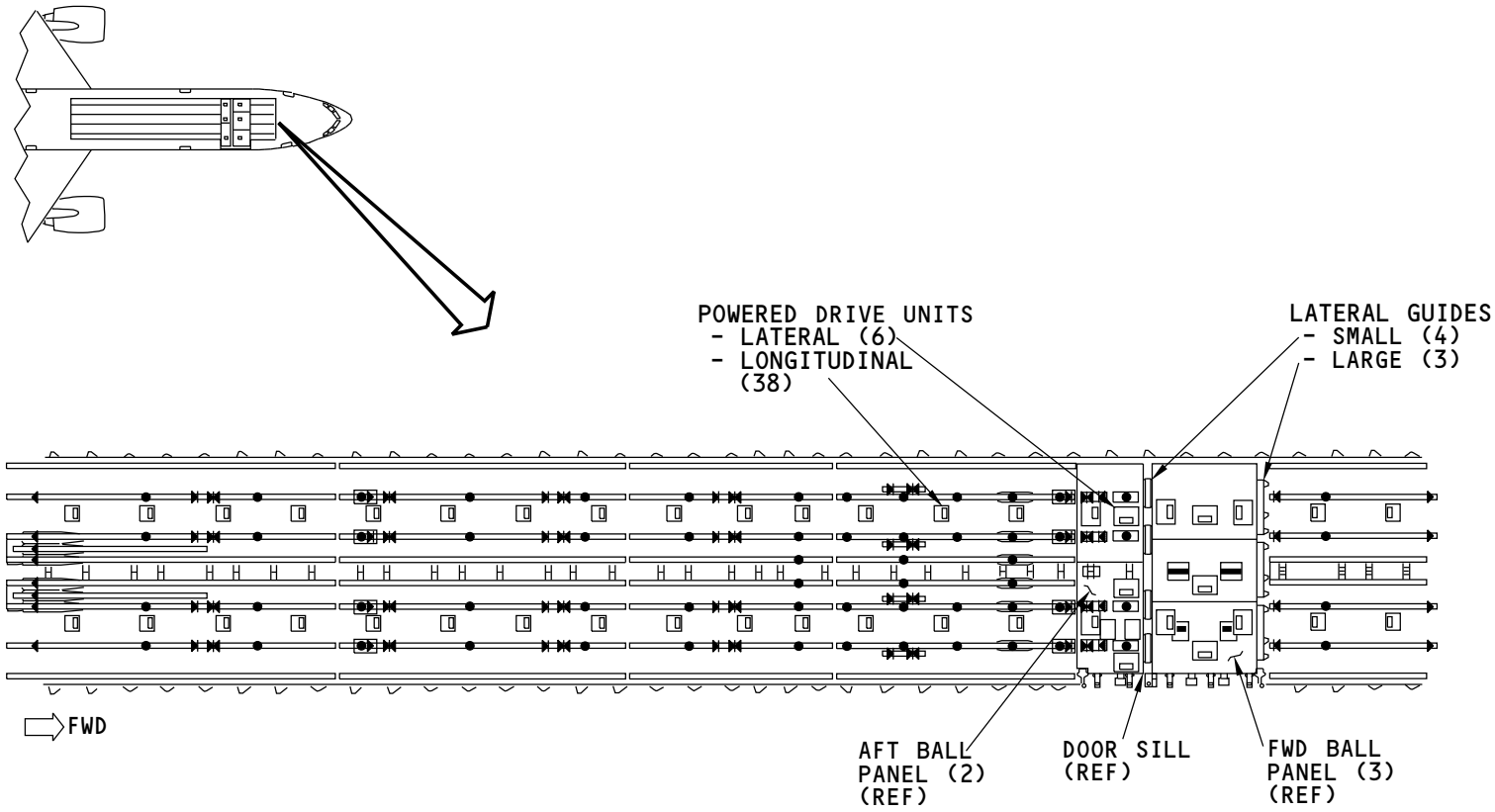
Lateral PDUs are in the same area as the ball panels. There are two rows of lateral PDUs. Each row has three PDUs.

Longitudinal PDUs are on the left and right sides of the compartment in rows. There are nineteen rows of longitudinal PDUs. Each row has two PDUs.

Lateral guides are in the ball panel area of the cargo compartment.

Small lateral guides are between the forward and aft ball panels.

Large lateral guides are forward of the forward ball panels.



FORWARD CARGO HANDLING SYSTEM
(LOOKING DOWN)
(TYPICAL)

M40472 S000616832_V1

CARGO HANDLING SYSTEM - FWD CARGO ELECTRICAL/MECHANICAL COMPONENT LOCATIONS

CARGO HANDLING SYSTEM - FWD CARGO MECHANICAL COMPONENT LOCATIONS

General

The forward cargo handling system has mechanical components that let you load, unload, and lock ULDs. These are the mechanical components:

- End stops
- Side guide rails
- Stop/locks
- Roller trays
- Pallet locks
- Ball panels
- Center stop/locks
- Guide rollers
- Rollout stop/locks
- Retractable guide roller/lock
- Sill rollers
- Center guides
- Partial load stops.

Location

End stops are in the forward and aft ends of the cargo compartment. There are eight in the aft end and four in the forward end. All end stops are the similar. The middle four in the aft end of the compartment do not give vertical restraint. All of the other end stops give vertical restraint. The end stops in the forward end incorporate a tie-down.

Side guide rails are along the sides of the cargo compartment. There are eight on the left side and seven on the right side of the compartment.

Stop/locks are in the aft part of the compartment. All four stop/locks are in one row. The stop/locks attach to the roller trays.

Roller trays are forward and aft of the ball panels. There are eight main columns of roller trays across the compartment. Each main column has five trays each. There are two auxiliary columns near the aft end of the compartment. Each auxiliary column has one tray.

Pallet locks are throughout the cargo compartment. The locks attach in twelve rows with four locks in each row. Forty of the pallet locks mount to the roller trays. Eight of the pallet locks attach to floor structure in the area of the aft ball panels.

Ball panels are to the left of the door sill. The panels are in two sets, forward and aft. The forward set is in the area used to load/unload containers and pallets. The aft set of panels are in the area used to load/unload pallets.

Center stop/locks are in the middle panel of the forward ball panels.

Guide rollers are in the door sill area, one roller forward and one aft.

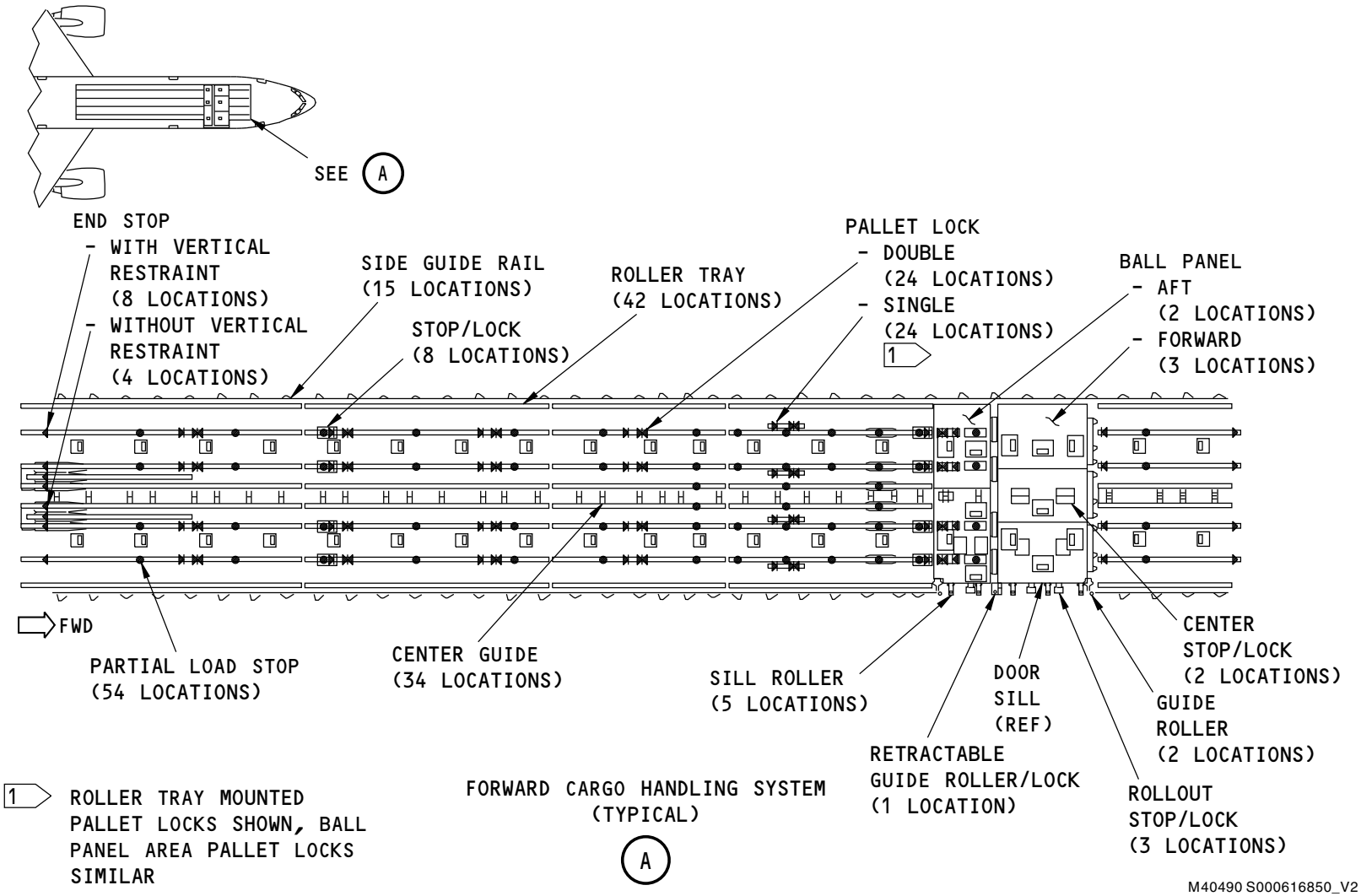
Rollout stop/locks are in the door sill area.

Retractable guide roller/lock is in the door sill area.

Sill rollers are in the cargo door sill area.

Center guides are along the center of the cargo compartment.

Partial load stops are in all areas of the cargo compartment. There are twelve rows of stops. Most rows have four partial load stops. The three rows aft of the ball panels have six partial load stops. All partial load stops attach to the roller trays.



CARGO HANDLING SYSTEM - FWD CARGO MECHANICAL COMPONENT LOCATIONS

CARGO HANDLING SYSTEM - AFT CARGO ELECTRICAL/MECHANICAL COMPONENT LOCATIONS

General

The aft cargo handling system has electrical/mechanical components that let you load and unload ULDs.

These are the electrical/mechanical components:

- Powered drive units (PDUs)
- Lateral guides.

The usual operation of the electrical/mechanical components is automatically controlled by the cargo system controller. Some automatically controlled components you may operate manually. These are the components that you may operate manually:

- Lateral guides.

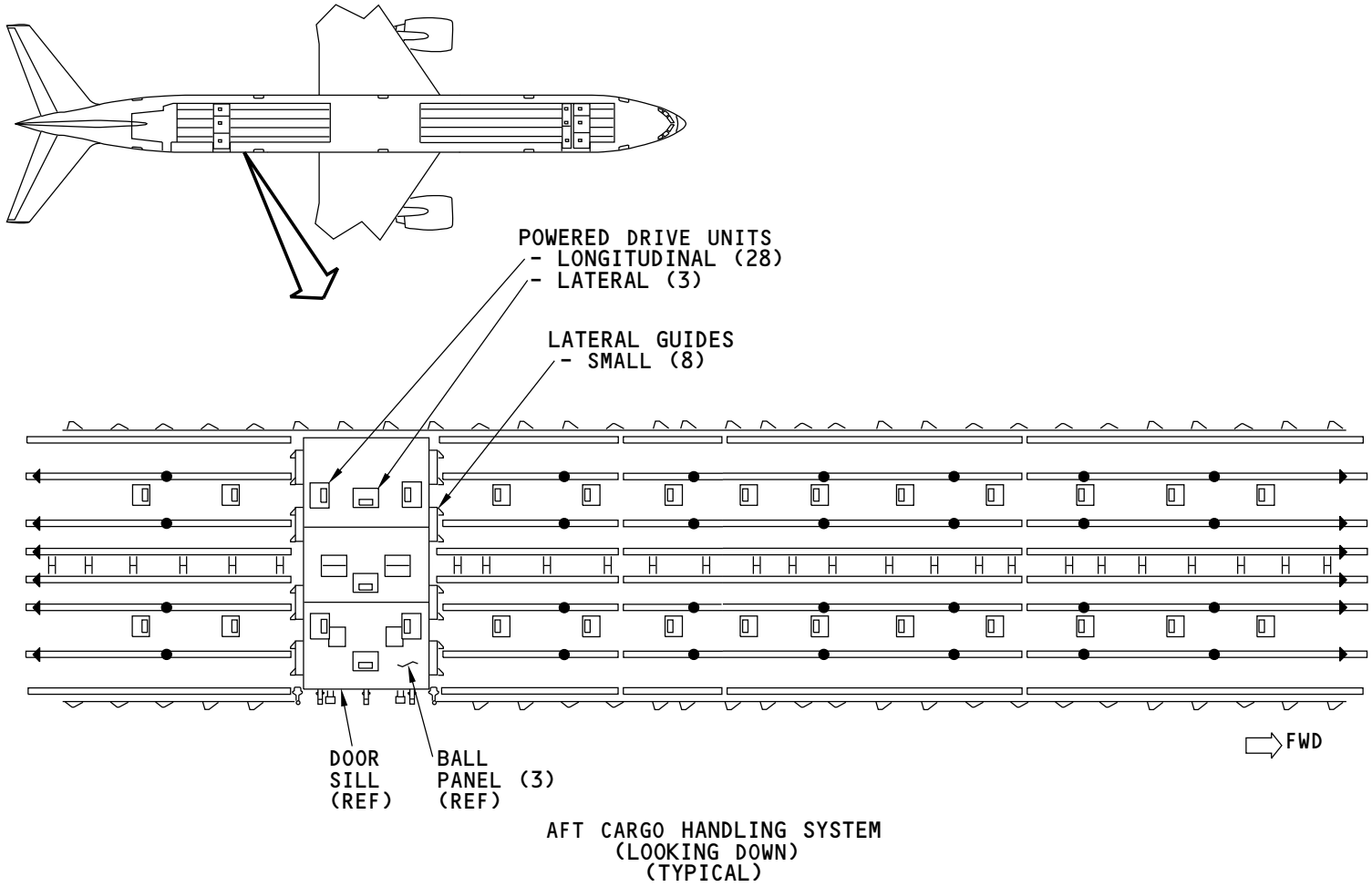
Location

Powered drive units are in all areas of the cargo compartment.

The longitudinal PDUs are on the left and right sides of the compartment in rows. There are fourteen rows of PDUs with two PDUs in each row.

Lateral PDUs are in the same area as the ball panels. There are three lateral PDUs.

Small lateral guides are forward and aft of the ball panels. These guides are structurally different than the ones in the forward cargo handling system.



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CARGO HANDLING SYSTEM - AFT CARGO ELECTRICAL/MECHANICAL COMPONENT LOCATIONS

CARGO HANDLING SYSTEM - AFT CARGO MECHANICAL COMPONENT LOCATIONS

General

The aft cargo handling system has mechanical components that let you load, unload, and lock ULDs. You operate the mechanical components manually.

These are the mechanical components:

- Ball panels
- Center stop/locks
- Rollout stop/locks
- Retractable guide roller/lock
- Side guide rails
- Roller trays
- End stops
- Guide rollers
- Sill Rollers
- Center guides
- Partial load stops.

Location

Ball panels are to the left of the door sill. The ball panels are used for loading/unloading containers. The ball panels have a different shape than the ones used in the forward cargo handling system.

Center stop/locks mount to structure in the area of the middle ball panel.

Auxiliary stop/locks mount to structure in the area of the right ball panel.

Rollout stop/locks mount to structure in the door sill area.

Side guide rails are along the sides of the cargo compartment. There are eight on the left side and seven on the right side of the compartment. These guide rails are shorter than the ones used in the forward cargo handling system.

Roller trays are forward and aft of the ball panels. There are eight columns of roller trays across the compartment. The columns along the sides of the compartment have five trays each. The columns along the middle of the compartment have four trays each. These roller trays are a different length than the ones in the forward cargo handling system.

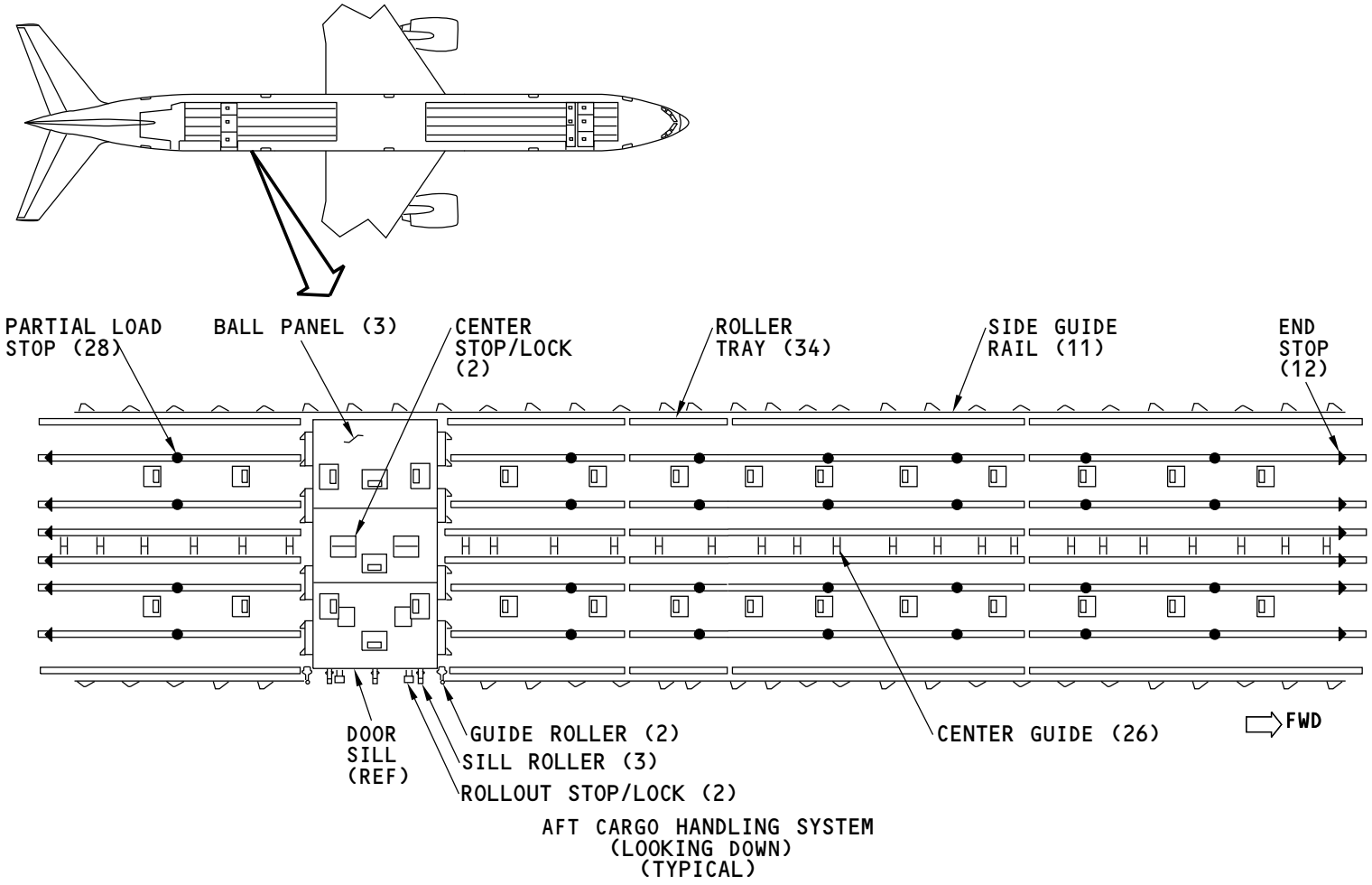
End stops are at the forward and aft ends of the cargo compartment in the roller trays. There are six in the aft end and six in the forward end. The aft cargo handling system uses one type of end stop, with vertical restraint. The forward system uses two types one without vertical restraint and one with vertical restraint.

Guide rollers are in the door sill area, one roller forward and one aft.

Sill rollers are in the door sill area. The aft cargo handling system uses cantilevered rollers for all of its sill rollers. The forward system uses both cantilevered and non-cantilevered.

Center guides are along the center of the cargo compartment.

Partial load stops are all along the cargo compartment. Twenty-eight stops attach to the roller trays in seven rows. All rows have four stops.



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CARGO HANDLING SYSTEM - AFT CARGO MECHANICAL COMPONENT LOCATIONS

CARGO HANDLING SYSTEM - ELECTRICAL GENERAL DESCRIPTION

General

The cargo handling system gets power for control from the P320 ground service/handling power panel. The system gets operating power from the P300 auxiliary power panel.

PSEU number one supplies cargo door position information. The cargo system controller (CSC) lets the system operate only if the cargo door is full open.

CSC Inputs

The cargo system controller (CSC) gets inputs from these components:

- Cargo handling accessory panel (system power relays and circuit breakers)(P35 fwd, P39 aft)
- Secondary joystick
- Cargo control joystick
- Cargo handling control panel (Switches, P24, P27)
- Hard wired program pins give controller installation location and information about system options. (Fwd cargo compartment, LD-4/LD-8 option, aft large cargo door option, crew rest in place 1 option, crew rest in place 2 option, no gearmotor devices installed).

The CSC does not get inputs from the PDUs or the lateral guides. The CSC has no interface with the AIMS.

Operation

The CSC controls the position of these electrical/mechanical components:

- Powered drive units
- Lateral guides.

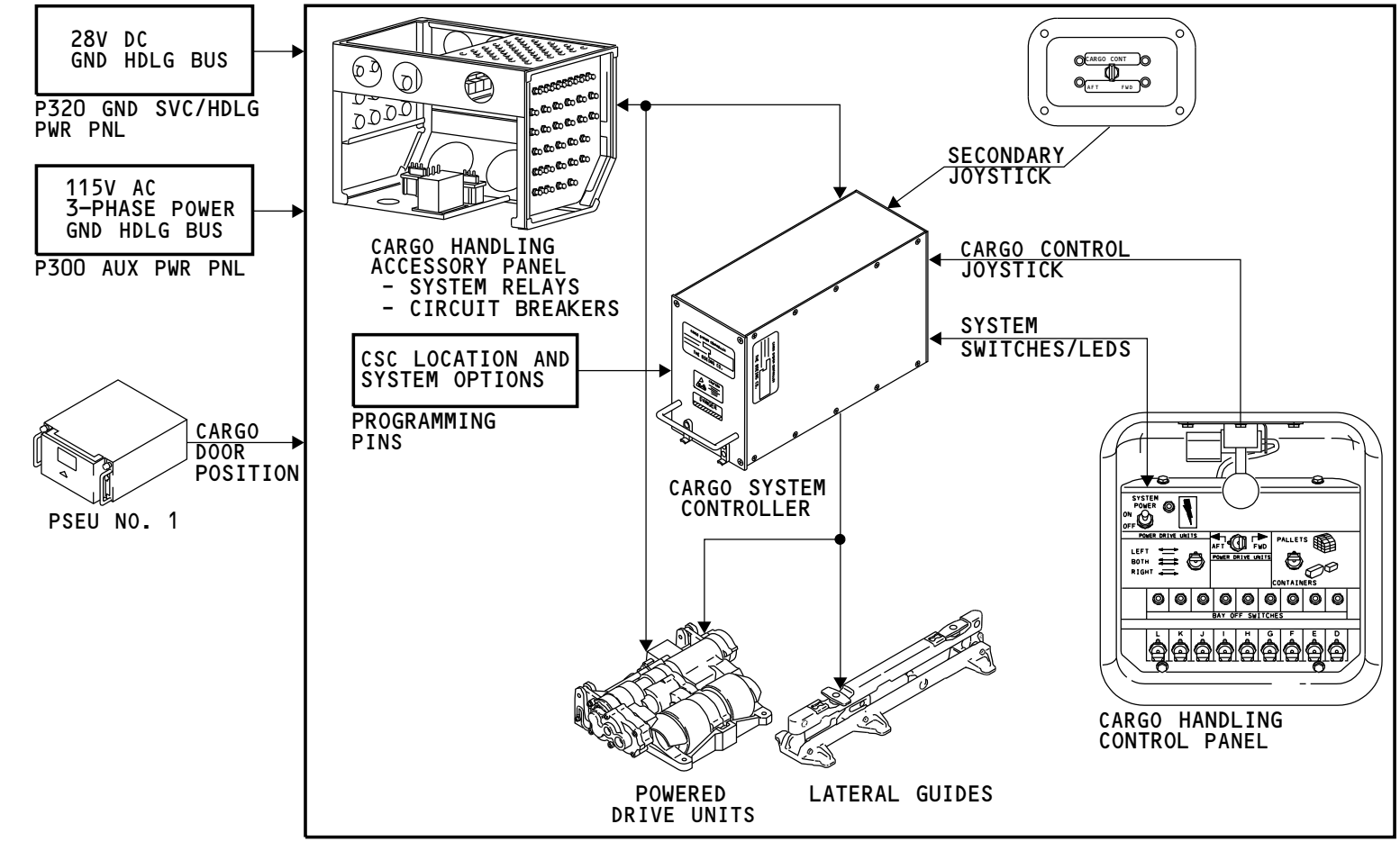
To supply power to the system these conditions must be true:

- the ground handling bus has power
- the cargo door is fully open
- the SYSTEM POWER switch on the cargo handling control panel is in the ON position.

You can tell that power is on when the system power LED comes on.

Use the switches on the cargo handling control panel to configure the system. The switches let you set the system for the type of cargo you need to load or unload (CONTAINERS OR PALLETS). The switches also let you enable sets of power drive units (PDU FWD or AFT and PDU LEFT, CENTER OR RIGHT).

You use the cargo control joystick to move ULDs in all directions, FORWARD, AFT, IN or OUT. The secondary joystick lets you move ULDs in two directions, FORWARD or AFT. The secondary joystick does not let you move ULDs onto or off of the ball panels. The cargo system controller uses your inputs for system configuration and joystick position to operate the components.



NOTE: FORWARD SYSTEM
SHOWN, AFT SIMILAR

M40547 S000616907_V1

CARGO HANDLING SYSTEM - ELECTRICAL GENERAL DESCRIPTION

CARGO HANDLING SYSTEM - MECHANICAL GENERAL DESCRIPTION

General

These are the mechanical components that you manually operate:

- Pallet locks (fwd compartment only)
- Stop/locks (fwd compartment only)
- Center stop/locks
- Center guides
- Rollout stop/locks
- Retractable guide roller/lock
- Partial load stops.

Operation

A typical unloading/loading operation usually requires the use of both electrically and manually operated components. The type of ULDs (containers or pallets) and the amount of cargo (partial or full load) tell you which components to use.

Pallet locks and stop/locks let you lock pallets in place. The lock position gives vertical and longitudinal restraint for the pallets.

Center guides in the area of the ball panels can be locked down. You do this so pallets can be loaded and unload.

You use the center stop/locks for these functions:

- To give lateral separation between containers
- To give lateral restraint for containers
- To give vertical restraint for containers.

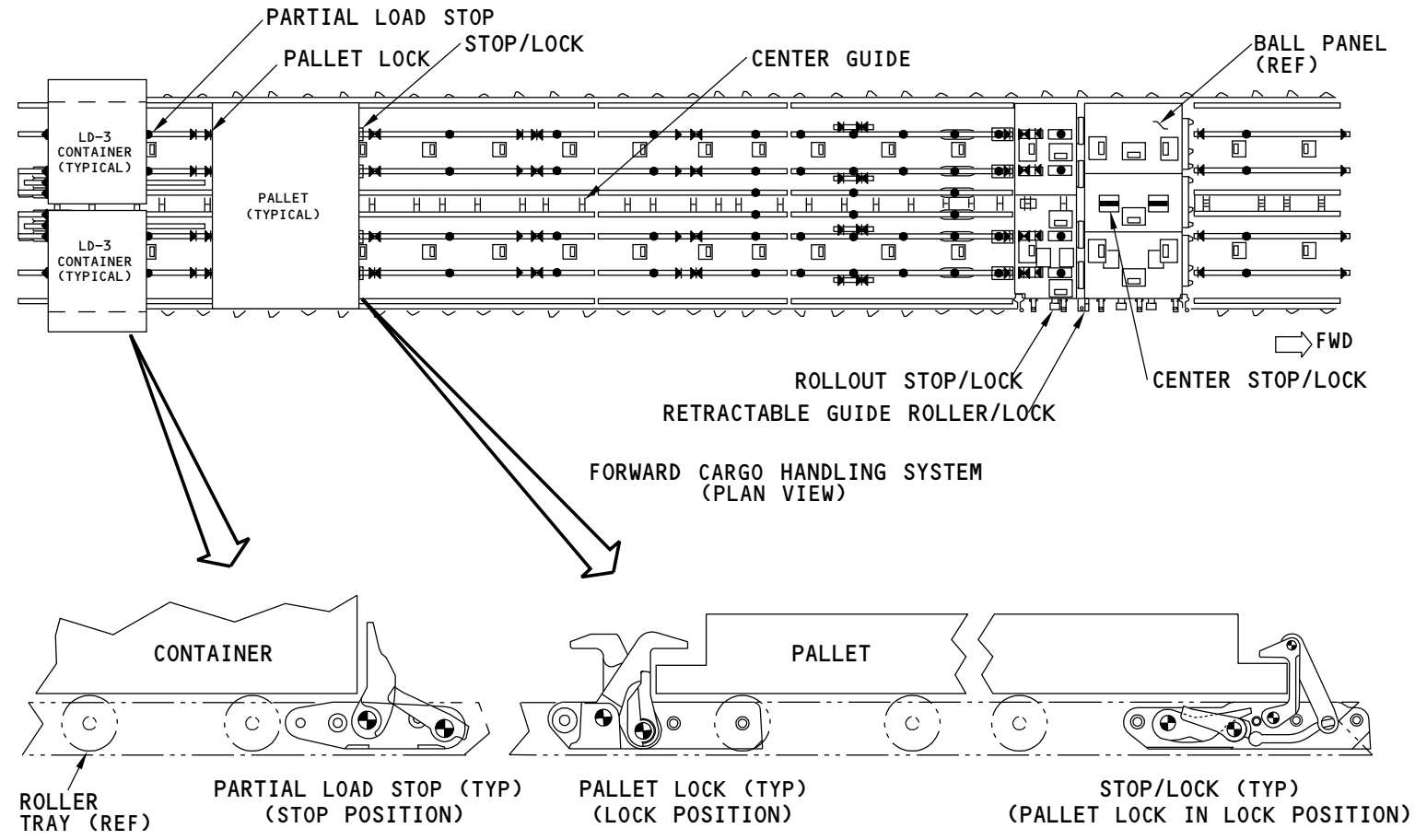
You use the rollout stop/locks for these functions:

- To give lateral restraint for containers and pallets
- To give vertical restraint for containers and pallets.

You use the retractable guide roller/lock for these functions:

- To guide containers into the compartment
- To give vertical restraint for containers and pallets.

You use the partial load stop to give longitudinal restraint for containers when another container is not adjacent to it.



NOTE: TYPICAL SYSTEM SHOWN

M40555 S000616915_V1

CARGO HANDLING SYSTEM - MECHANICAL GENERAL DESCRIPTION

CARGO HANDLING SYSTEM - ROLLOUT STOP/LOCK - INTRODUCTION

Purpose

The rollout stop/lock gives lateral and vertical restraint for containers and pallets.

Physical Description

These units are spring-loaded mechanical units. They have these parts:

- Lateral restraint
- Vertical restraint
- Pedal
- Base.

Location

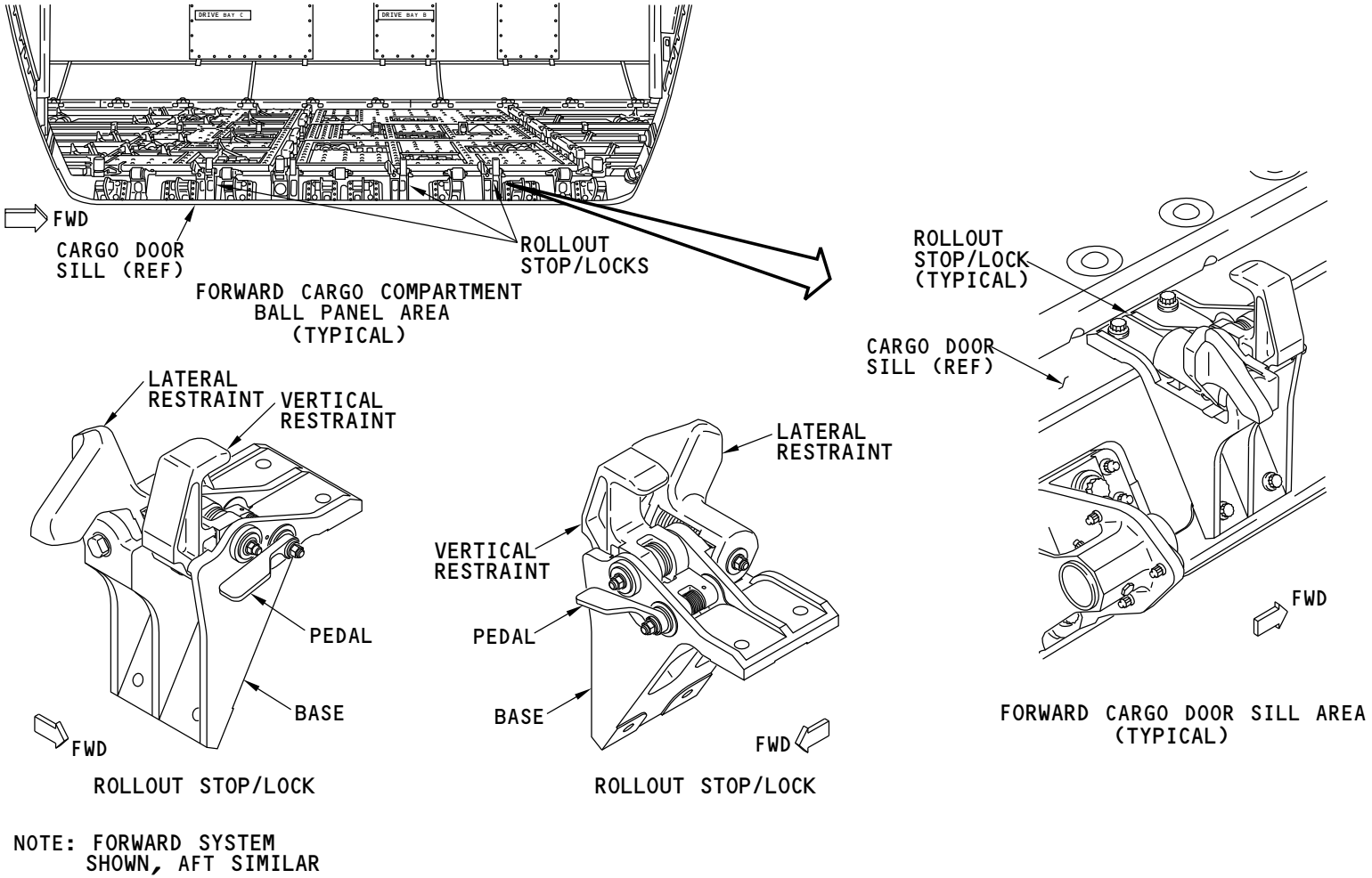
The forward cargo compartment has three rollout stop/locks in the cargo door sill area. The aft cargo compartment has two rollout stop/locks in the cargo door sill area.

Functional Description

Manual movement of the lateral restraint lets you set the restraint in the up or down position. Manual movement of the of the vertical restraint lets you set the restraint to the up position. Manual movement of the pedal lets you lower the vertical restraint.

Training Information Point

You remove the rollout stop/lock as a single unit.



NOTE: FORWARD SYSTEM SHOWN, AFT SIMILAR

M40557 S000616917_V1

CARGO HANDLING SYSTEM - ROLLOUT STOP/LOCK - INTRODUCTION

CARGO HANDLING SYSTEM - CENTER STOP/LOCK - INTRODUCTION

Purpose

Center stop/locks supply these functions:

- Lateral and vertical restraint for LD-3/LD-1 containers, K and N size pallets
- Lateral separation between LD-3 containers, K and N size pallets
- Longitudinal guidance for LD-3/LD-1 containers, K and N size pallets.

Physical Description

Center stop/locks are spring-loaded mechanical units. The units have these parts:

- Vertical restraints
- Pawl
- Base
- Lateral restraint
- Lockdown pawl
- Retract lever
- Latch.

The center stop/locks are opposite of each other.

Location

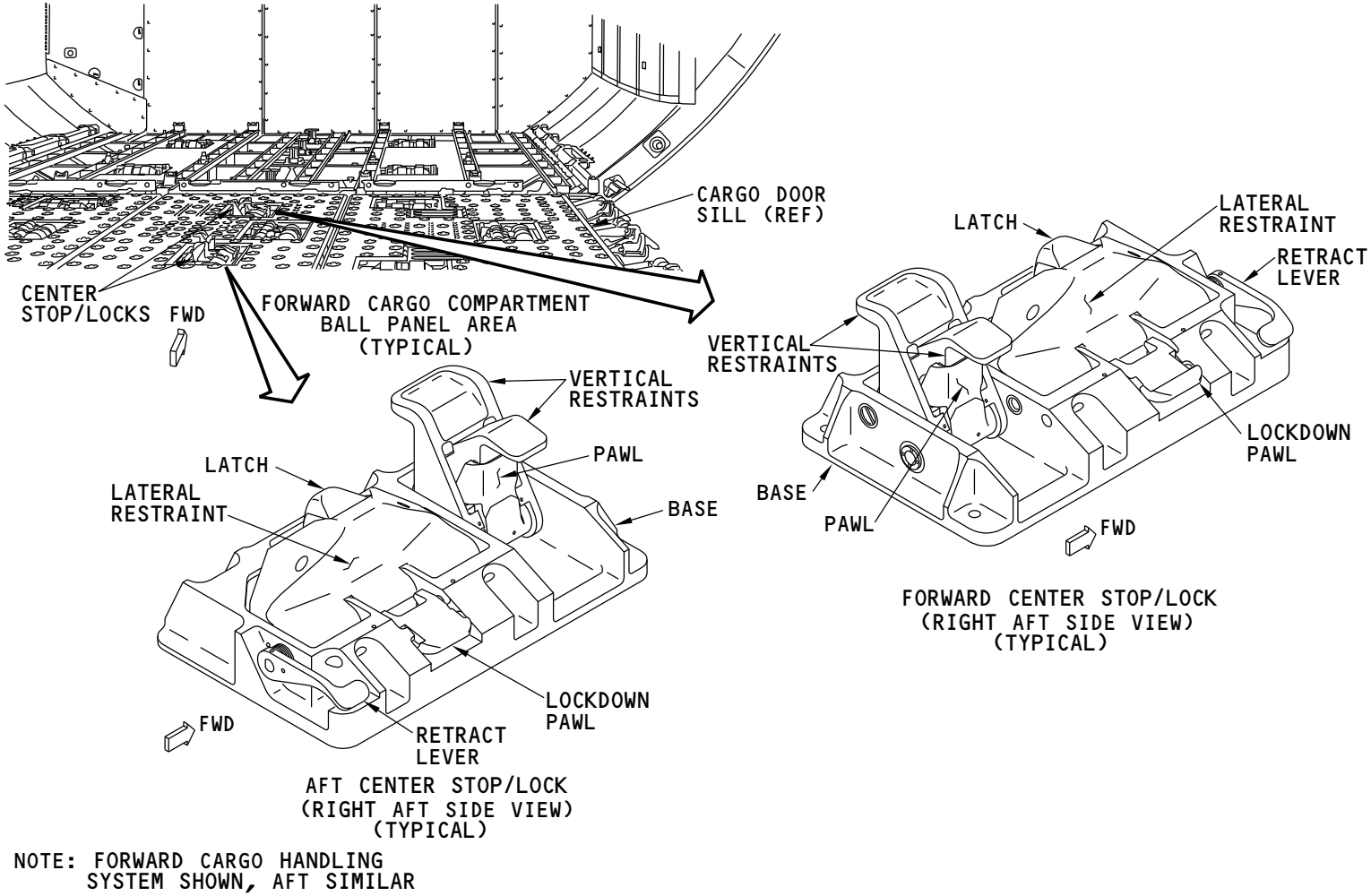
There are two center stop/locks in the ball panel area of the forward and aft cargo compartments. The center stop/locks are along the centerline of the compartments.

Functional Description

Manual movement of the lateral restraint lets you set the restraint in the up or down position. Manual movement of the of the vertical restraint lets you set the restraint to the up position. Manual movement of the pedal lets you lower the vertical restraint.

Training Information Point

You remove the center stop/locks as single units.



NOTE: FORWARD CARGO HANDLING SYSTEM SHOWN, AFT SIMILAR

M40645 S000617005_V1

CARGO HANDLING SYSTEM - CENTER STOP/LOCK - INTRODUCTION

CARGO HANDLING SYSTEM - ROLLOUT AND CENTER STOP/LOCKS - OPERATION

General

The rollout and center stop/locks operate almost the same. The shape and size of their restraints are different. You manually operate the stop/locks to set them to one of these positions:

- Lock, vertical and lateral restraints are up
- Load, vertical restraints are down, lateral restrains are up
- Unload, all restraints are down.

Manual Operation - Down

You use the pedal on the rollout stop/locks and the pawl on the center stop/locks to release a lock that holds the vertical restraint up. To move a vertical restraint down on a rollout stop/lock, push the pedal down. To move the vertical restraints down on a center stop/lock, pull the pawl down. This lets the restraints move down over the pawl.

The lateral restraints on the rollout and the center stop/locks are spring-loaded to the load (up) position.

To lock a lateral restraint for a rollout stop/lock in the unload (down) position, push the restraint to the left (away from the cargo door) and at the same time push the restraint down. Hold the restraint down and let it move to the right (towards the door). This lets a lock hold the lateral restraint down.

To lock a lateral restraint for a center stop/lock in the unload (down) position, use the retract lever or push the restraint down. Move the lever up or push the restraint down until the lockdown pawl locks the restraint down.

Manual Operation - Up

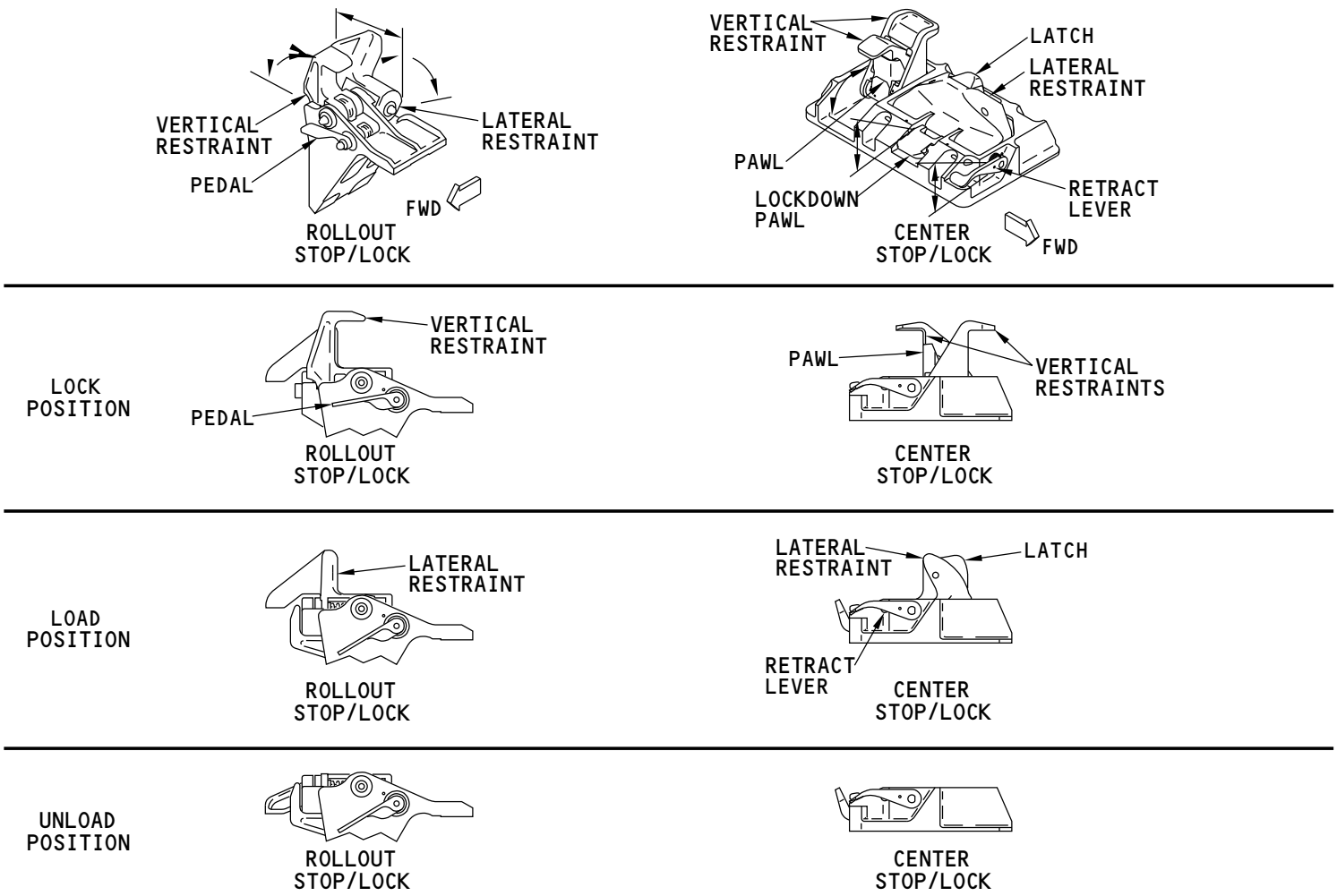
If the lateral restraint for a rollout stop/lock is down, push the restraint to the left and let it move up. The lateral restraint is spring-loaded up. It will move up by itself to the load position.

If the lateral restraint for a center stop/lock is down, push down on the lockdown pawl. The pawl releases a lock that holds the restraint down. The lateral restraint is spring-loaded up. It will move up by itself to the load position.

If a vertical restraint is down, lift up the restraint to move it up to the lock position.

Lateral Restraint Operation

The lateral restraint is spring-loaded to the load position. During the load operation, the restraint pivots down when a ULD pushes on it from the outboard side. When the ULD moves completely into the ball panel area, the lateral restraint pivots back up to the load position. ULDs cannot move outboard past the lateral restraint.



M40648 S000617008_V1

CARGO HANDLING SYSTEM - ROLLOUT AND CENTER STOP/LOCKS - OPERATION

CARGO HANDLING SYSTEM - RETRACTABLE GUIDE ROLLER/LOCK - INTRODUCTION

Purpose

The retractable guide roller/lock guides and aligns containers as they move through the cargo door opening. It also gives lateral and vertical restraint for containers and pallets.

Physical Description

The retractable guide roller/lock is a spring-loaded mechanical unit.

The unit has these parts:

- Fork
- Roller
- Restraint
- Pedal
- Bracket.

Location

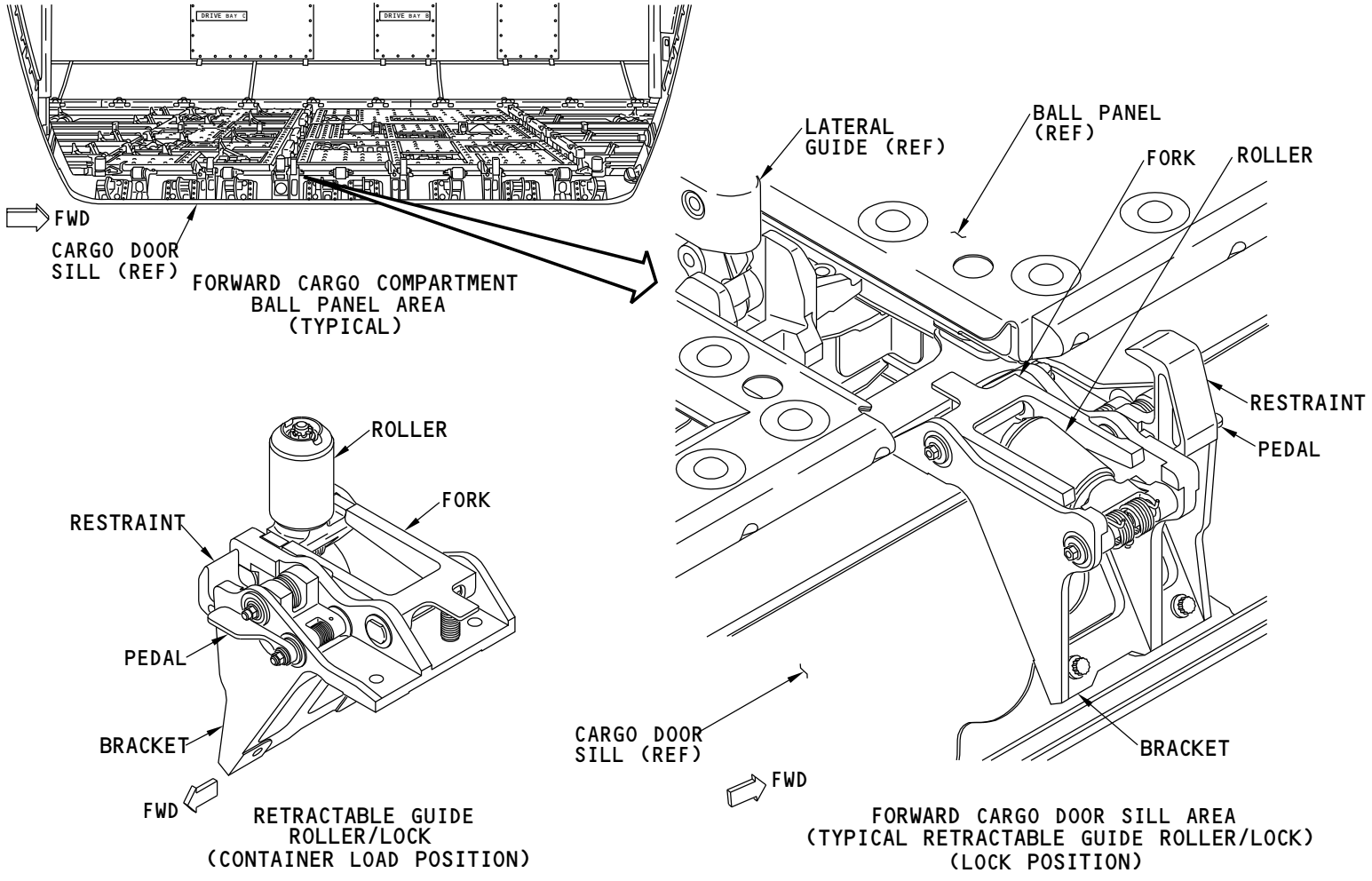
There is one retractable guide roller/lock in the forward cargo compartment. It mounts to the middle part of the door sill. The aft compartment does not use a retractable guide roller/lock. Fixed guide rollers (not shown) are used.

Functional Description

You control the position of the restraint and the roller manually. Manual movement of the roller or of the vertical restraint lets you set them to the up position. The pedal and fork let you manually lower the restraint and the roller.

Training Information Point

The roller on the retractable guide roller/lock is a LRU.



M40565 S000616925_V1

CARGO HANDLING SYSTEM - RETRACTABLE GUIDE ROLLER/LOCK - INTRODUCTION

CARGO HANDLING SYSTEM - RETRACTABLE GUIDE ROLLER/LOCK - OPERATION

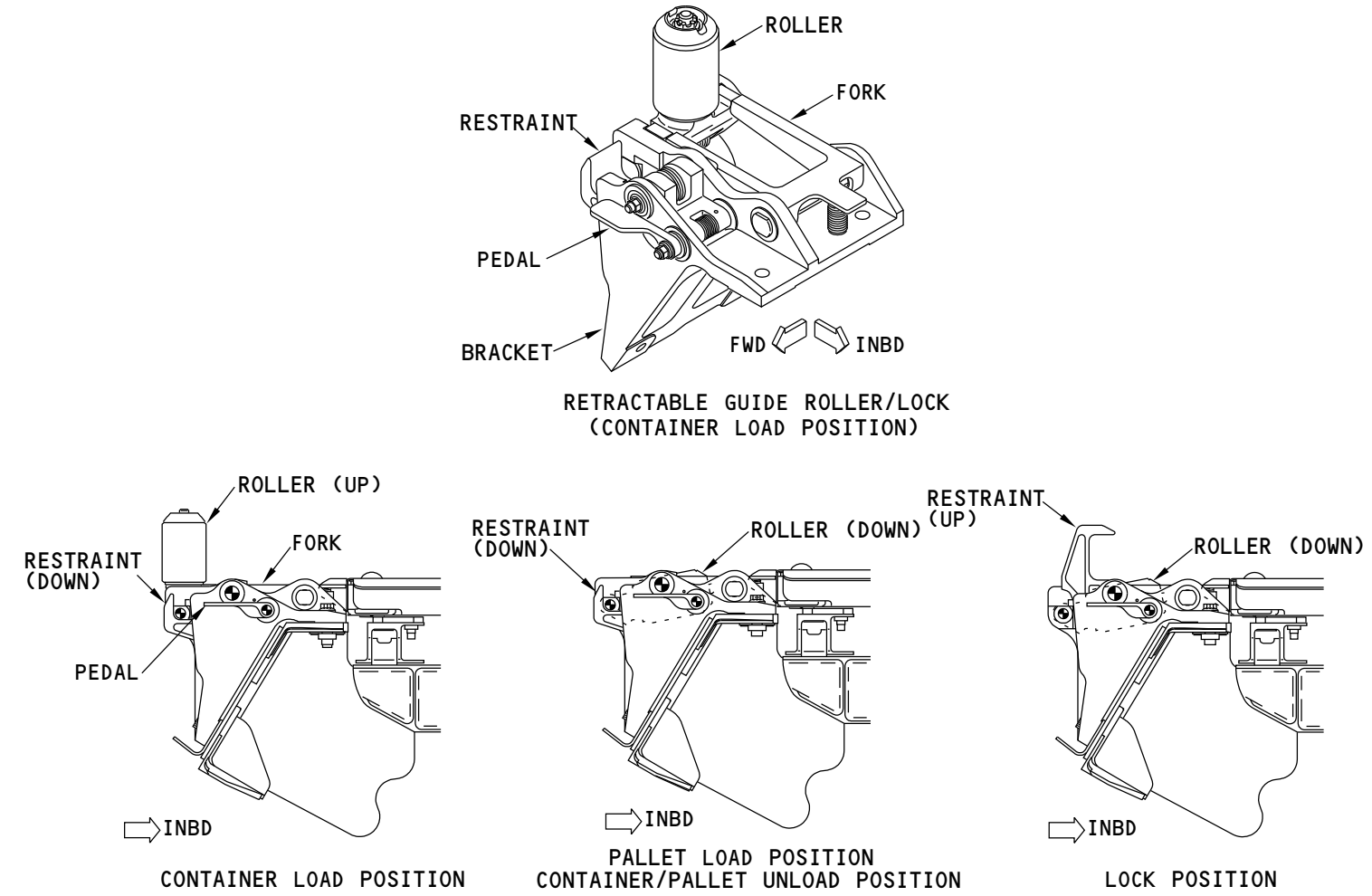
Operation

The retractable guide roller/lock has these positions:

- Container load - The roller is up and the restraint is down to move containers into the cargo compartment
- Pallet load and Contain/Pallet Unload - The roller and the restraint are down. Use this position to load pallets or unload containers and pallets.
- Lock - The roller is down and the restraint is up when cargo movement into or out of the cargo compartment is complete.

You use the pedal to manually lower the restraint. You use the fork to manually lower the roller. Push the pedal all the way down to move the restraint down. Push down on the inboard end of the fork to move the roller down.

You lift the roller or the restraint to put them up.



M40567 S000616927_V1

CARGO HANDLING SYSTEM - RETRACTABLE GUIDE ROLLER/LOCK - OPERATION

CARGO HANDLING SYSTEM - LATERAL GUIDE - INTRODUCTION

General

Lateral guides make sure containers stay straight on the forward ball panels for the load or unload operation. Some guides also give vertical restraint and more anchor fittings for pallets.

Seven lateral guides are in the forward cargo compartment. Eight lateral guides are in the aft cargo compartment. There are three different types of lateral guides:

- Large with forward and aft vertical restraints (forward cargo compartment)
- Small with heavy weight rail and base (forward cargo compartment)
- Small with light weight rail and base (aft cargo compartment).

Large Guides

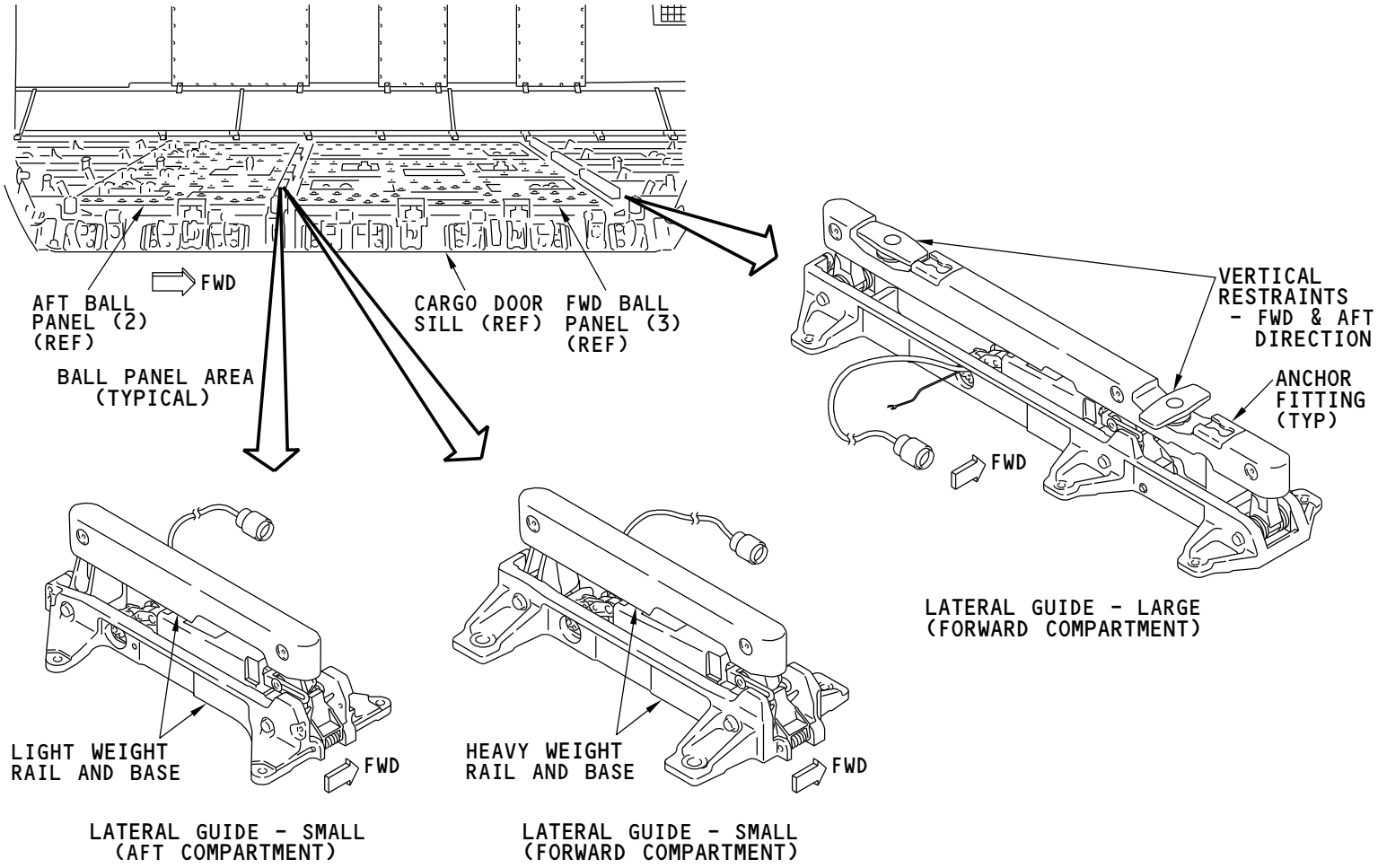
The large lateral guides in the forward cargo compartment give vertical restraint for pallets forward and aft of the guide.

Small Guides

The small lateral guides in the forward cargo compartment are heavier in construction than the ones in the aft compartment. This makes them more resistant to the higher longitudinal loads in the forward compartment.

Location

Three large lateral guides are forward of the forward ball panels in the forward cargo compartment. Four small lateral guides are between the forward and aft ball panels in the forward cargo compartment. Four small lateral guides are forward of the ball panels in the aft cargo compartment. Four small lateral guides are aft of the ball panels in the aft cargo compartment.



M40571 S000616931_V1

CARGO HANDLING SYSTEM - LATERAL GUIDE - INTRODUCTION

CARGO HANDLING SYSTEM - LATERAL GUIDE - PHYSICAL DESCRIPTION

Physical Description

Lateral guides are spring loaded electrical/mechanical units. The guides have these parts:

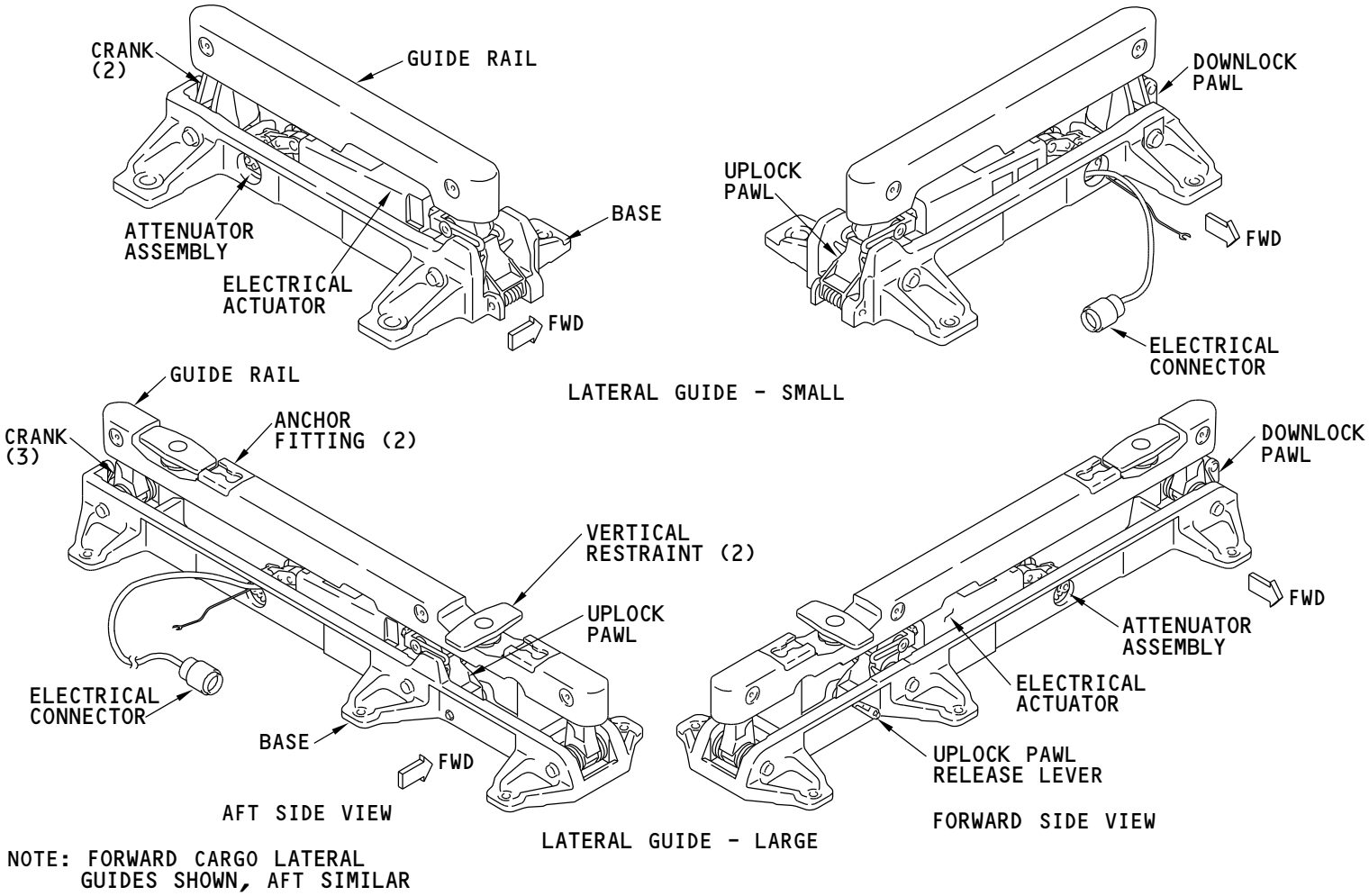
- Crank (2 for small guides, 3 for large guides)
- Guide rail
- Base
- Electrical actuator
- Attenuator assembly
- Downlock pawl
- Electrical connector
- Uplock pawl
- Anchor fitting (2) (large lateral guides only)
- Vertical restraint (2) (large lateral guides only)
- Uplock pawl release lever (large lateral guides only).

Functional Description

The electrical actuator controls the position of the guide rail. The pawls and pawl release lever manually operate the guide rail.

Training Information Point

You remove the lateral guides as a single unit.



M40575 S000616935_V1

CARGO HANDLING SYSTEM - LATERAL GUIDE - PHYSICAL DESCRIPTION

General

Normally the guide rail on the lateral guides moves electrically to down when you move cargo forward or aft. If the rail does not move electrically you can manually move and lock it down with these components:

- Uplock pawl (small guides only)
- Uplock pawl release lever (large guides only)
- Guide rail
- Down lock pawl.

Lock down

For small guides move the uplock pawl away from the crank. For large guides use the uplock pawl release lever to move the uplock pawl away from the crank. The uplock pawl is spring loaded. Hold the pawl or lever to keep the pawl away from the crank.

While you hold the pawl or the release lever push the guide rail down. The guide rail is spring loaded up.

As you hold the guide rail, move the downlock pawl to lock the guide rail down.

Release

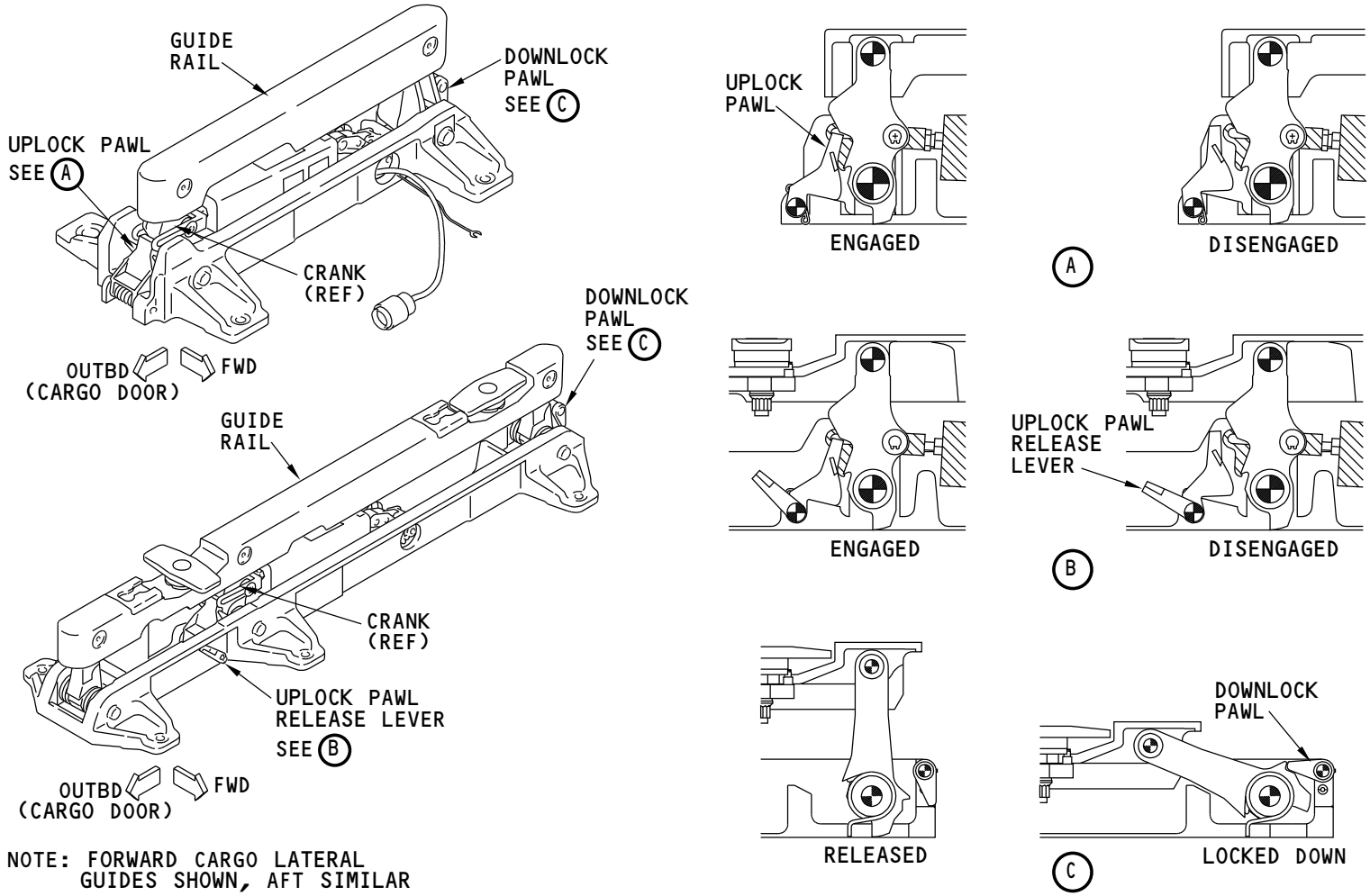
Push and hold down the guide rail. This removes pressure on the downlock pawl.

Move the downlock pawl to unlock the guide rail.

Release the guide rail. Springs automatically move it up.

Training Information Point

If you manually lower a lateral guide, you must manually release it before it will operate electrically.



M40576 S000616936_V1

CARGO HANDLING SYSTEM - LATERAL GUIDE - OPERATION - LOCK DOWN

CARGO HANDLING SYSTEM - LATERAL GUIDE - OPERATION - LIFT UP

General

To lift up a lateral guide when it does not move up electrically, you must manually operate the toggle link in the attenuator assembly.

Lift up

Use a common screwdriver or similar long, thin object to trip the toggle link on the attenuator assembly. Springs lift the guide rail automatically if the toggle link is tripped correctly.

The attenuator resets automatically when the guide rail is lowered manually.

Access

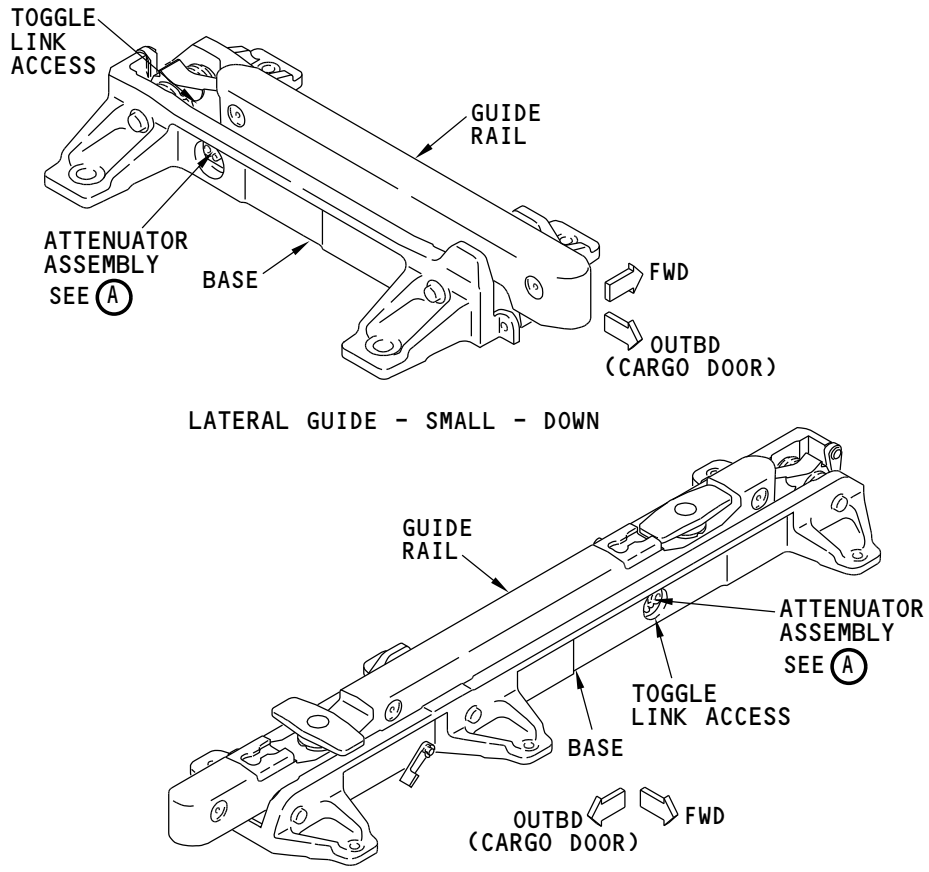
Access to the toggle link is different for large and small guides.

Large guides - you access the toggle link thought a side access hole in the base of the lateral guide. This hole is on the forward side of the guide.

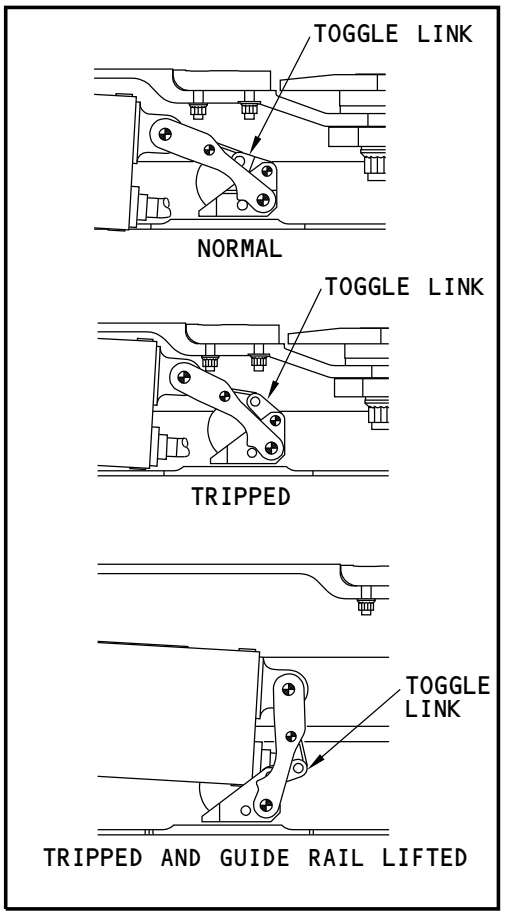
Small guides - you access the toggle link from the top of the lateral guide. The tool you use to the trip the toggle link fits between the rail and the base of the guide.

Training Information Point

If you manually lift a lateral guide, you do not have to move it down before electrical operation. The lateral guide will reset itself when power is put on the system.



NOTE: FORWARD CARGO LATERAL GUIDES SHOWN, AFT SIMILAR



ATTENUATOR ASSEMBLY
(A)

M40577 S000616937_V1

CARGO HANDLING SYSTEM - LATERAL GUIDE - OPERATION - LIFT UP

CARGO HANDLING SYSTEM - POWERED DRIVE UNIT - INTRODUCTION

General

The laterally-installed lift power drive units (PDU) let cargo loading personnel move cargo units into and out of the cargo compartment. The longitudinally-installed lift PDUs operate to move cargo units onto or off the ball panels in the forward or aft direction in the cargo compartment.

There are two types of PDUs:

- Lateral
- Longitudinal.

The lift PDUs move cargo units when their lifted drive wheels turn against the bottom surface of the cargo unit. A cam in the PDU turns to make the PDU go up or down. The laterally and longitudinally installed lift PDUs are in the ball panel areas. The longitudinal lift PDUs are down during movement of the cargo unit into and out of the cargo compartment. During longitudinal movement onto or off the ball panels, the lateral lift PDUs go down and the longitudinal lift PDUs go up. Optical devices that use an infrared transmitter and a receiver in the PDU sense when there is an cargo unit above it. There are 2 temperature sensors in the PDU. One of the temperature sensors is for motor overheat conditions. The other is for electronics overheat conditions. The PDU sends sensor data to the CMDU. The CMDU uses the data to calculate control of the motor in the PDU.

Lateral PDU

There are six lateral PDUs in the forward cargo compartment. Three lateral PDUs are in the aft cargo compartment. The lateral PDUs move containers and pallets into or out of the cargo compartment.

longitudinal PDU

There are 38 longitudinal PDUs in the forward cargo compartment and 28 in the aft cargo compartment. They move containers and pallets forward or aft in the compartment.

Location

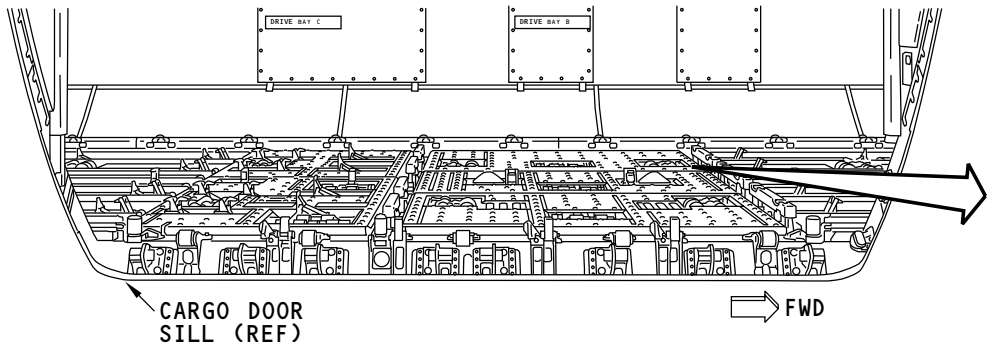
Lateral PDUs are in the ball panel area, bays B and C forward compartment, bays E and F aft compartment (not shown).

Longitudinal PDUs are throughout the compartments.

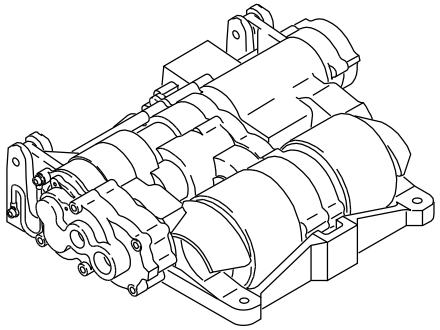
Training Information Point

The lateral PDUs are interchangeable with the longitudinal PDUs.

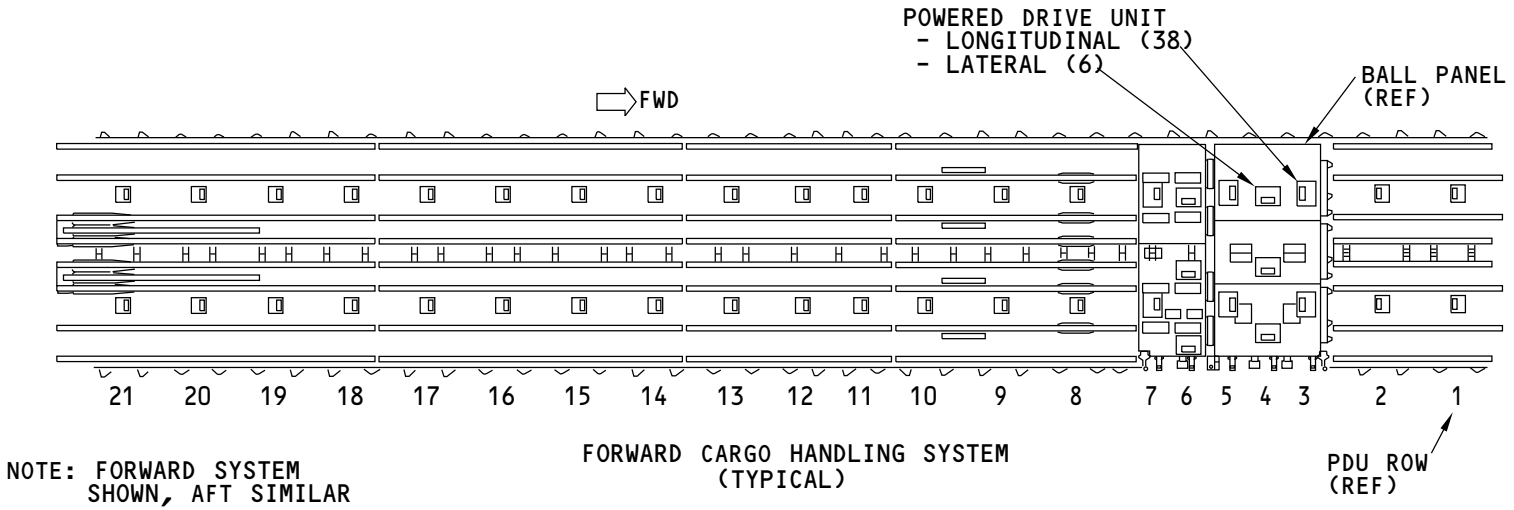
You identify individual PDUs by PDU row location number and its location in the row, right, center or left. For one example, 5R is the PDU in the fifth row of PDUs from the front of the compartment on the right side. For another example, 4C in the forward compartment is the center PDU in the fourth row from the front of the compartment.



BALL PANEL AREA
FORWARD CARGO COMPARTMENT
(TYPICAL)



POWERED DRIVE UNIT
(TYPICAL)



NOTE: FORWARD SYSTEM
SHOWN, AFT SIMILAR

FORWARD CARGO HANDLING SYSTEM
(TYPICAL)

M40579 S000616939_V1

CARGO HANDLING SYSTEM - POWERED DRIVE UNIT - INTRODUCTION

CARGO HANDLING SYSTEM - POWERED DRIVE UNIT - FUNCTIONAL DESCRIPTION

General

The power drive unit (PDU) has these parts:

- Hinge
- Actuator
- Roller guards
- Rollers
- Mounting base
- Electrical connector
- Lift cams.

The actuator attaches to the mounting base at the hinge. The rollers are a hard rubber-like material. The lift cams are on the bottom side of the actuator.

Functional Description

The PDUs actuator has a reversible AC motor (not shown) that drives the rollers and lift cams through reduction gears (not shown). The actuator also has an internal erection coil (not shown) that locks the lift cams when the PDU is in the raised position. The motor has an electrically activated brake (not shown). It stops and holds the motor when the PDU is not in the drive condition. The lift cams move the PDU up the first time the motor is in the drive condition. The cams keep the PDU up until power is removed from the PDU. Power to the PDU is removed by any of these:

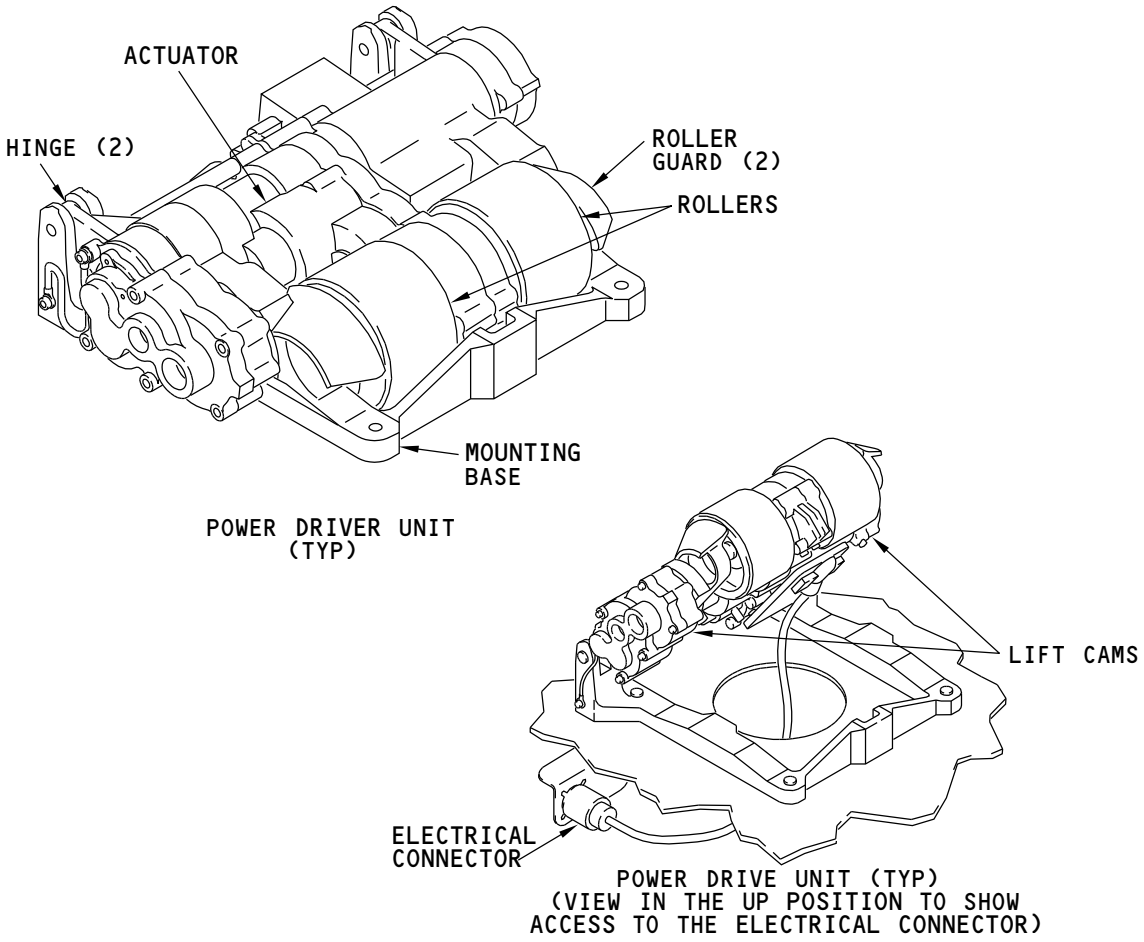
- System power switch
- Bay OFF switch
- Cargo system controller (CSC) control logic.

Training Information Point

When you replace a PDU you must clean and seal the PDU mounting base to the airframe. Then make sure electrical resistance between the PDU and airframe is acceptable.

Make sure the electrical cable is clamped and routed (not shown) to prevent pinching and chafing. Modifications to the electrical cable routing is allowed to prevent pinching and chafing. Nylon tie-wraps may be used to secure the cable to itself, the PDU mounting base or other adjacent structure.

The PDU roller can be used as long as it is completely covered in rubber and it has no significant uneven areas or missing chunks of rubber.



M40580 S000616940_V1

CARGO HANDLING SYSTEM - POWERED DRIVE UNIT - FUNCTIONAL DESCRIPTION

CARGO HANDLING SYSTEM - SILL ROLLER

Purpose

The sill rollers support cargo as it moves through the cargo door opening. The rollers make sure that the cargo is at same height of the balls in the ball panels. They also give a place to tie down cargo.

Physical Description

There are two types of sill rollers:

- Non-Cantilevered
- Cantilevered.

The forward cargo handling system uses both types. The aft system uses only the cantilevered type.

The sill rollers have these parts:

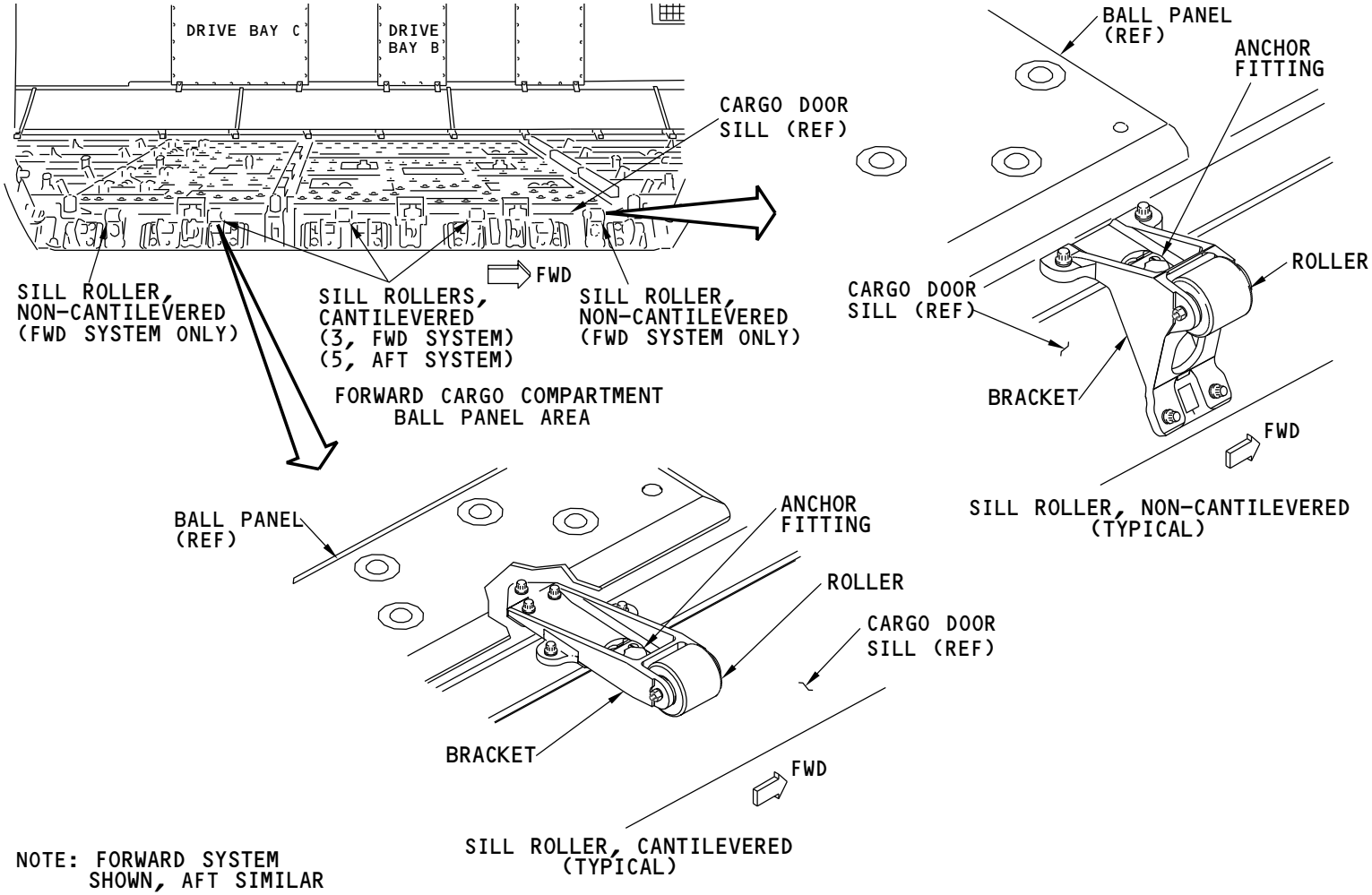
- Anchor fitting
- Roller
- Bracket.

Location

There are five sill rollers in the forward cargo compartment on the cargo door sill. The first and last sill rollers on the forward cargo door sill are the non-cantilevered type. There are three sill rollers in the aft cargo compartment on the cargo door sill. All three are cantilevered.

Training Information Point

The roller is a LRU.



M40582 S000616942_V1

CARGO HANDLING SYSTEM - SILL ROLLER

CARGO HANDLING SYSTEM - GUIDE ROLLERS

Purpose

The guide rollers guide and align cargo as it moves through the cargo door opening.

Physical Description

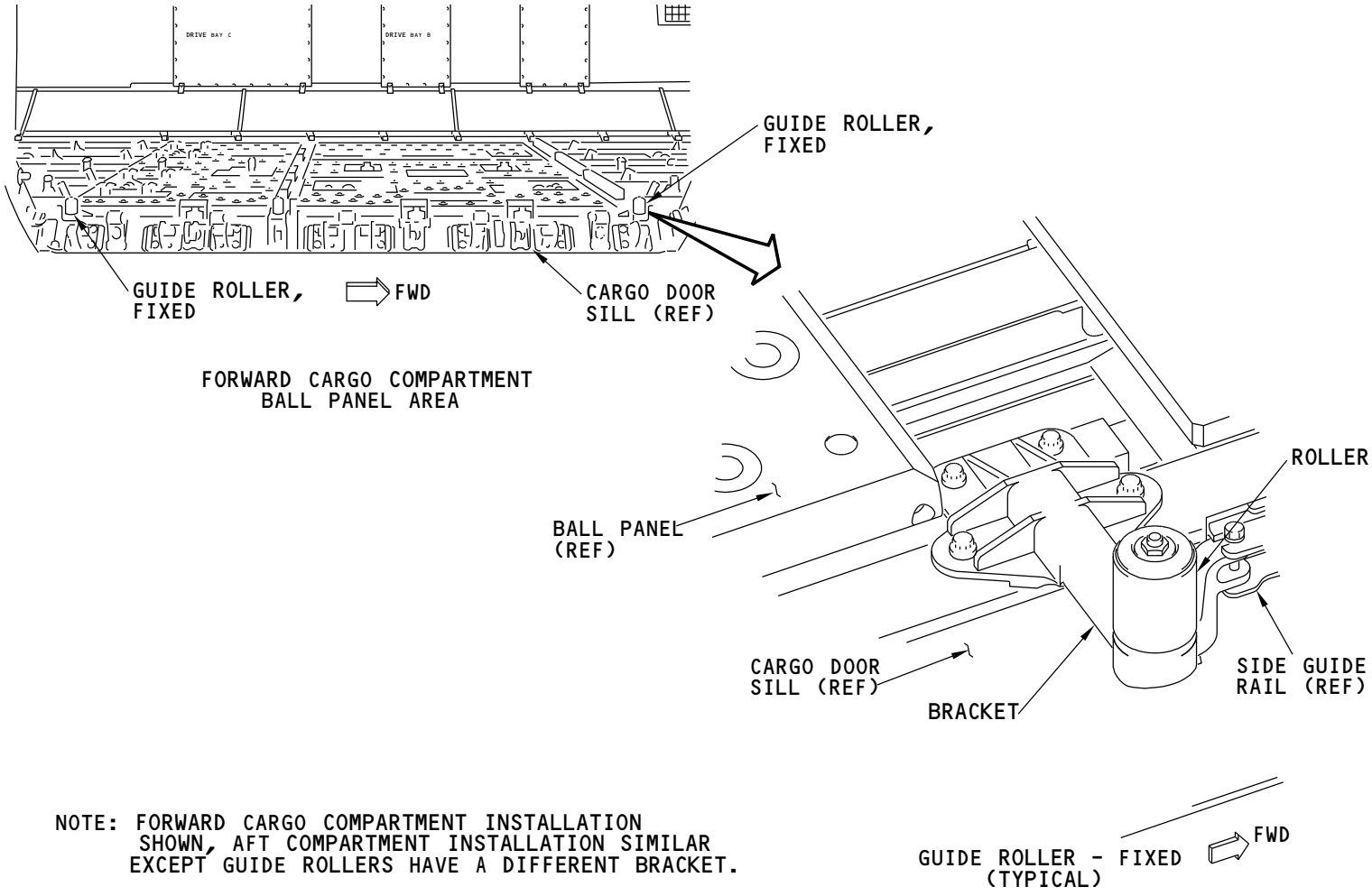
The guide roller has a bracket and a roller. The guide rollers in the forward cargo compartment have a different bracket than the ones used in the aft cargo compartment. The side guide rail attaches to the bracket of the guide rollers.

Location

There are two guide rollers in each cargo compartment. The guide rollers mount to the door sill, one forward and one aft of the ball panel area.

Training Information Point

The roller is an IRU.



M40583 S000616943_V1

CARGO HANDLING SYSTEM - GUIDE ROLLERS

CARGO HANDLING SYSTEM - BALL PANEL

Purpose

The ball panels do these functions:

- Make a low friction surface to help in the movement of cargo
- Supply a primary bearing surface to transmit cargo loads to the airframe
- Make a surface to walk on.

Physical Description

Airplanes with a large forward cargo door and a small aft cargo door have five ball panel in the forward compartment and three ball panels in the aft.

The panels are two sheets of aluminum that are bonded and riveted to a corrugated inner core. The inner core is made of channels and doublers. Each ball panel has insert cups that let the ball transfer units (BTU) lock to the panel.

Each BTU locks into an insert cup with two latches.

Location

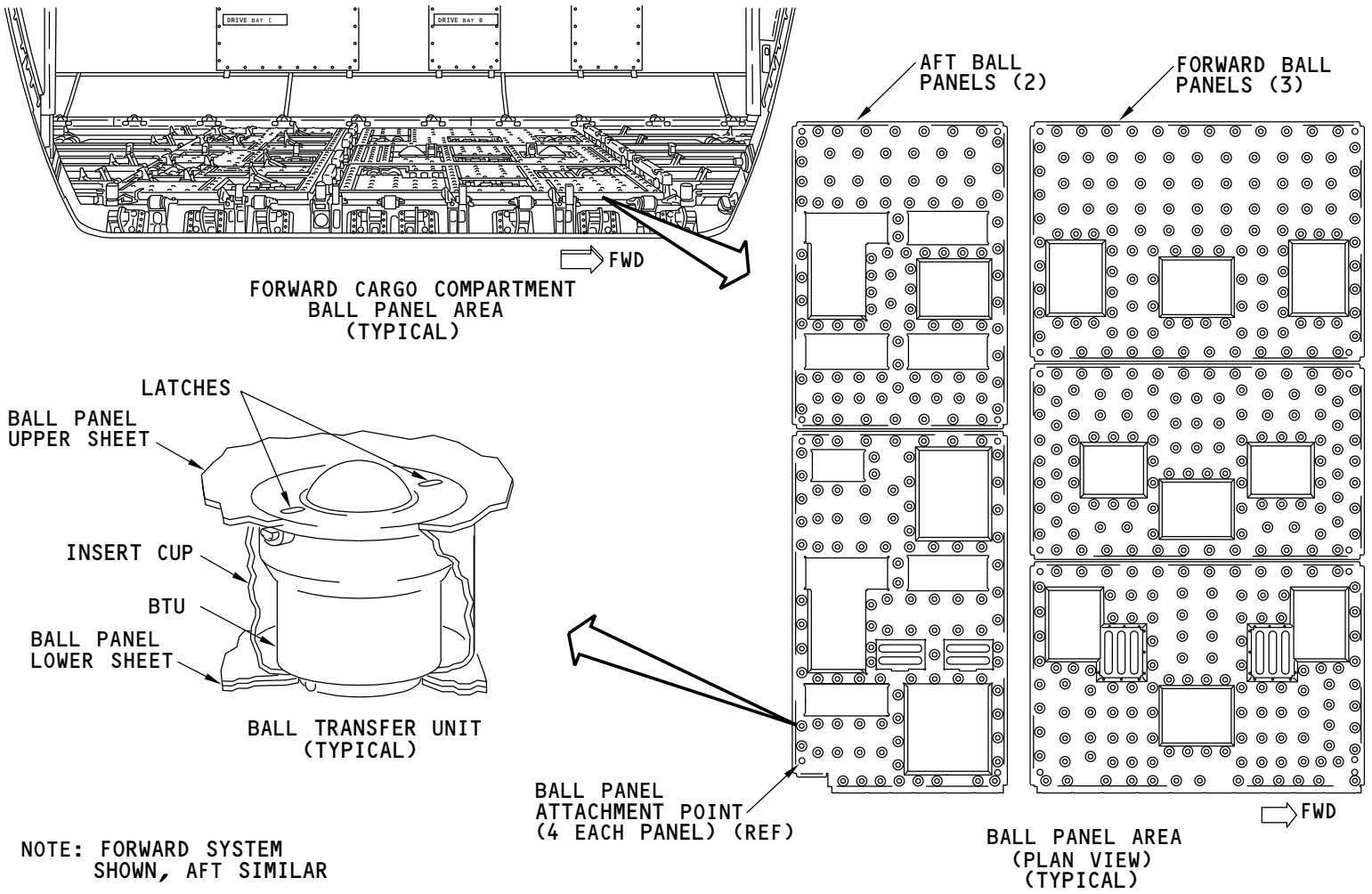
The panels are adjacent to the forward and aft cargo doors (not shown). The panels are in container bays B and C for the forward compartment.

The panels are in container bay H in the aft cargo compartment (not shown).

Training Information Point

BTUs are LRUs.

WARNING BE CAREFUL WHEN YOU WALK ON THE BALL PANELS OR ALONG THE FLOOR PANELS IN THE CARGO COMPARTMENT. THE COMPONENTS IN THE CARGO COMPARTMENT CAN MOVE AND CAUSE YOU TO FALL.



M40586 S000616946_V1

CARGO HANDLING SYSTEM - BALL PANEL

CARGO HANDLING SYSTEM - ROLLER TRAY

Purpose

The roller trays do these functions:

- Make a low friction surface to help in the forward and aft movement of cargo
- Supply a primary cargo load bearing surface
- Supply a place to mount cargo handling system components.

Physical Description

The roller trays have rollers and a tray.

These cargo handling components mount to the trays:

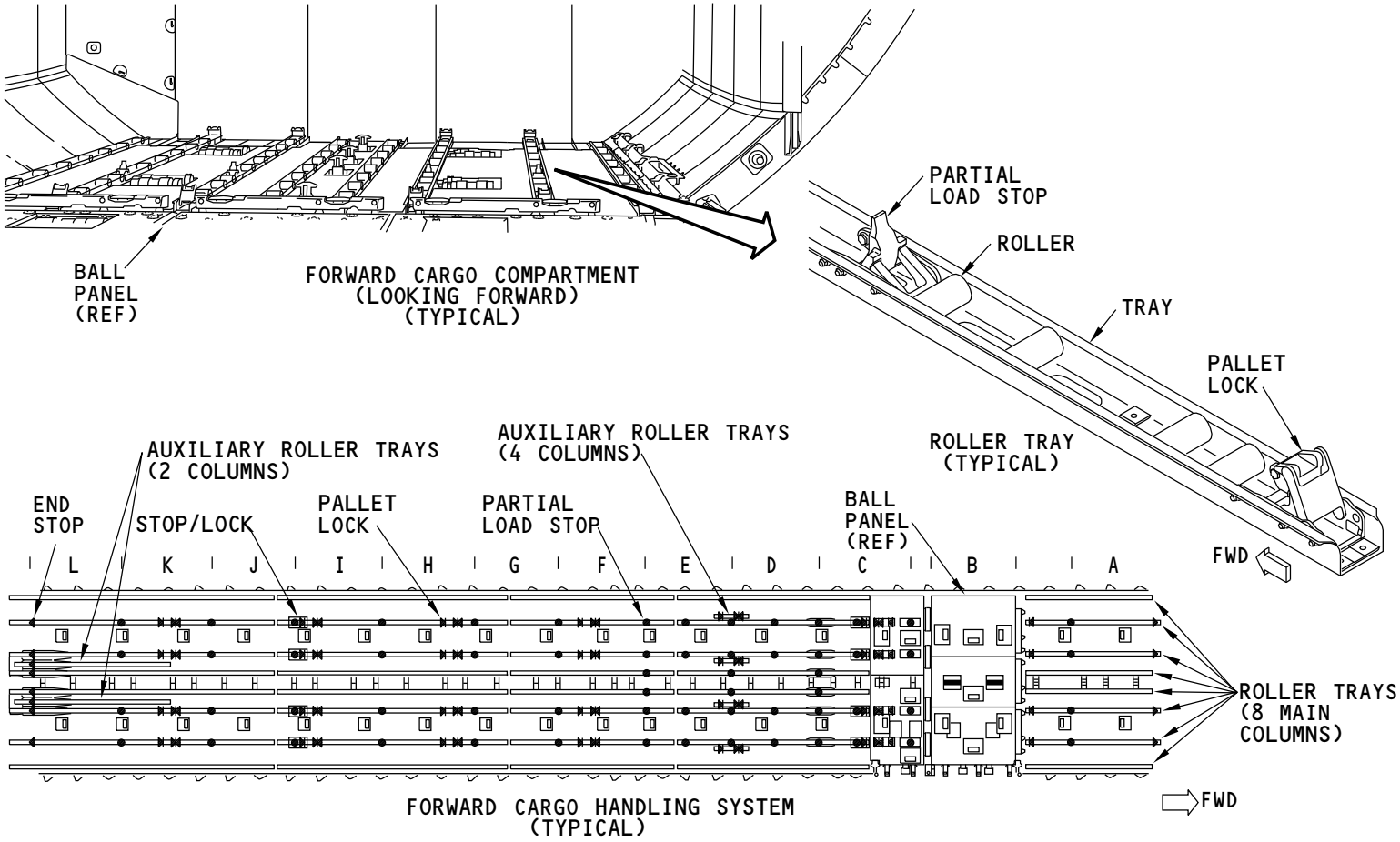
- End stops
- Pallet locks (fwd compartment only)
- Stop/locks (fwd compartment only)
- Partial load stops.

Location

Roller trays are forward and aft of the ball panels in the forward and aft cargo compartments. There are eight columns of roller trays across each compartment. There are different tray lengths.

The forward cargo compartment has auxiliary roller trays in the area aft of the ball panels. The trays give more places to mount equipment.

In the forward cargo compartment each of the main columns have five trays. In the aft cargo compartment the columns along the sides of the compartment have five trays (not shown). The columns along the middle of the compartment have four trays (not shown).



NOTE: FWD SYSTEM IS SHOWN. AFT SYSTEM IS SIMILAR
BUT HAS NO PALLET LOCKS OR STOP/LOCKS.

M40591 S000616951_V1

CARGO HANDLING SYSTEM - ROLLER TRAY

CARGO HANDLING SYSTEM - SIDE GUIDE RAIL

Purpose

The side guide rail has these functions:

- Gives lateral alignment and longitudinal guidance to the cargo
- Gives the cargo lateral and vertical restraint
- Gives a place to tie down cargo.

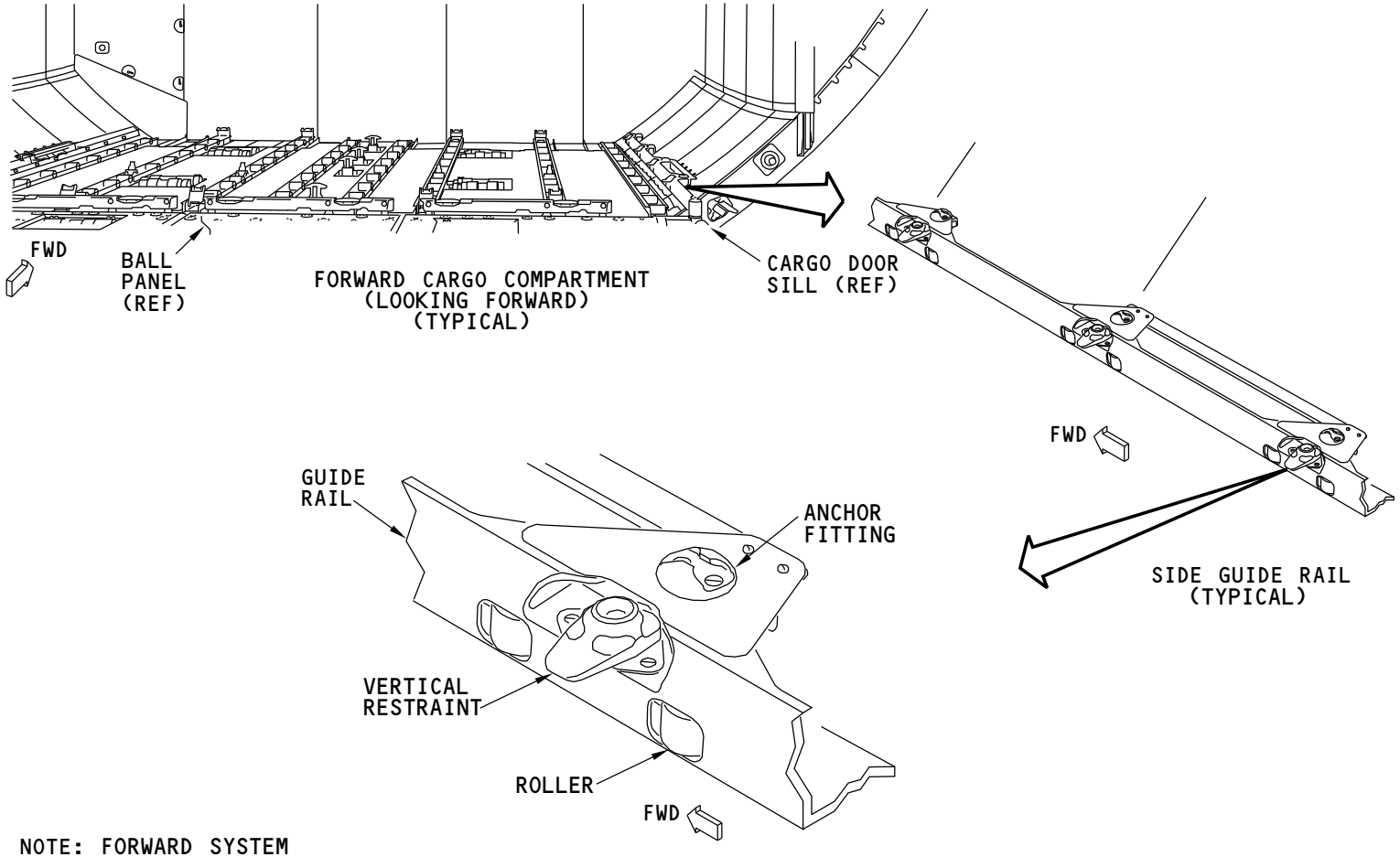
Physical Description

The side guide rail has these parts:

- Anchor fitting
- Roller
- Vertical restraint
- Guide rail.

Location

Side guide rails are along the sides of the cargo compartment, except in the cargo door sill area. In the forward cargo compartment there are five on the left side and four on the right side of the compartment. In the aft cargo compartment there are six on the left side and five on the right side of the compartment (not shown).



M40593 S000616953_V1

CARGO HANDLING SYSTEM - SIDE GUIDE RAIL

CARGO HANDLING SYSTEM - CENTER GUIDE - INTRODUCTION

General

There is only one type of center guide. This type of guide is foot operated and can be locked down if necessary.

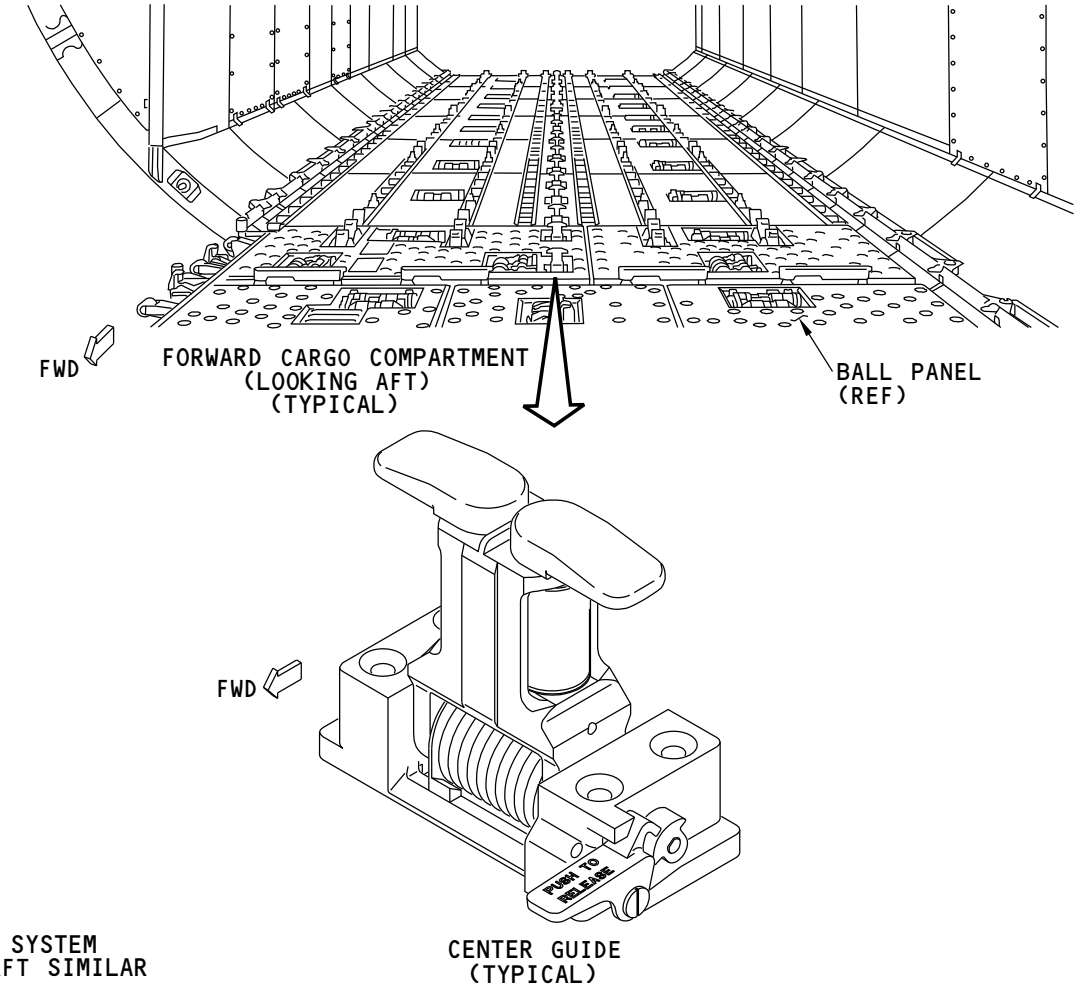
Purpose

The center guides have these functions:

- Supplies lateral and vertical restraint for LD-3/LD-1 containers, K and N size pallets
- Supplies lateral separation between LD-3 containers, K and N size pallets
- Supplies longitudinal guidance for LD-3/LD-1 containers, K and N size pallets.

Location

Center guides are along the center of each cargo compartment. The guides are in the area of the ball panels and in the areas forward and aft of the ball panels.



M40651 S000617011_V1

CARGO HANDLING SYSTEM - CENTER GUIDE - INTRODUCTION

CARGO HANDLING SYSTEM - CENTER GUIDE - OPERATION

Physical Description

Center guides are spring-loaded mechanical devices. They have these parts:

- Vertical restraints (movable)
- Housing
- Base
- Spring
- Lock lever
- Lock cam
- Roller (2).

Functional Description

The spring in the base makes sure that the housing stays in the up position. The housing and the lock cam pivot together in the forward or aft direction. A lock lever spring (not shown) makes sure that the lock lever continues to touch the lock cam as it rotates.

The vertical restraints are spring-loaded devices. They are shown in there usual position.

Operation

You push the center guide all the way down (forward or aft) to lock it down. When the guide is all the way down, the lock lever engages one of two flats on the lock cam. This holds the center guide in the down position.

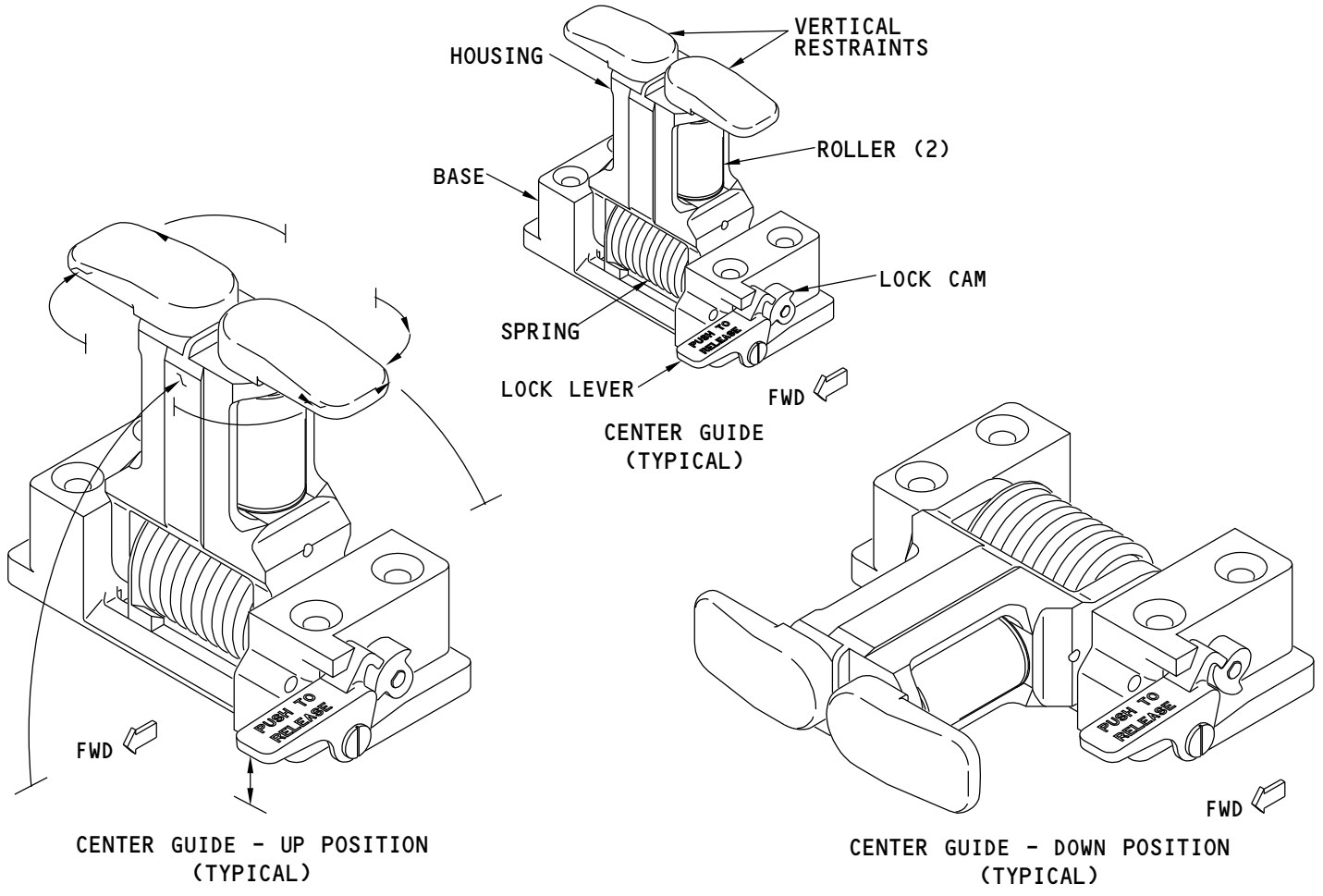
You push the lock lever to let the center guide move up.

Training Information Point

The center guides are for LD-3 and LD-1 containers. Other ULDs move over or to the sides of the center guides.

When you load pallets, they will hit the right side of the center guides in the ball panel area. You must lock the center guides down in the ball panel area when you load pallets.

The guide is spring-loaded to up. Thus, when you lock or unlock a center guide, it will come up quickly when the lock is disengaged.



M40598 S000616958_V1

CARGO HANDLING SYSTEM - CENTER GUIDE - OPERATION

CARGO HANDLING SYSTEM - PARTIAL LOAD STOPS - INTRODUCTION

Purpose

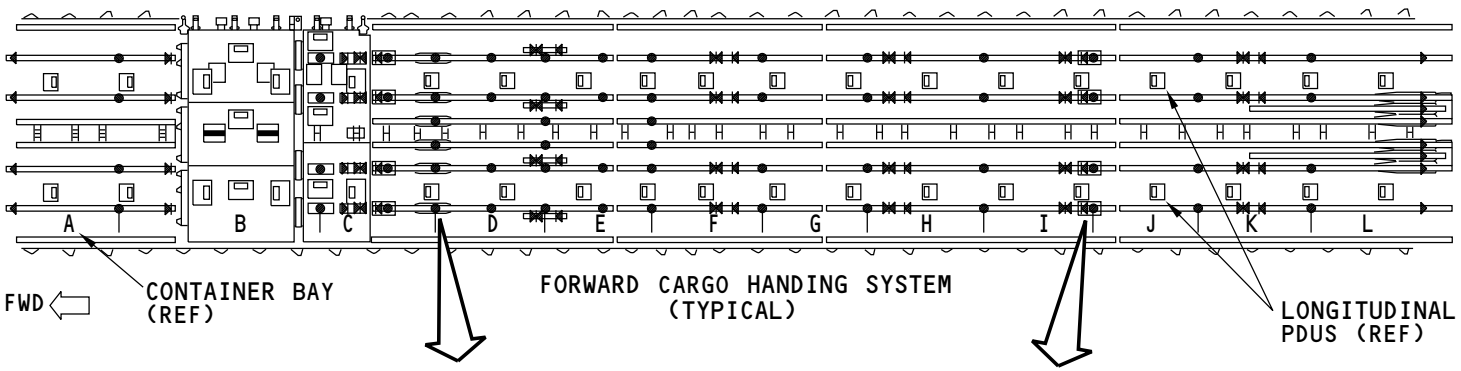
Partial load stops give longitudinal restraint for containers when container loading is not continuous in the cargo compartment.

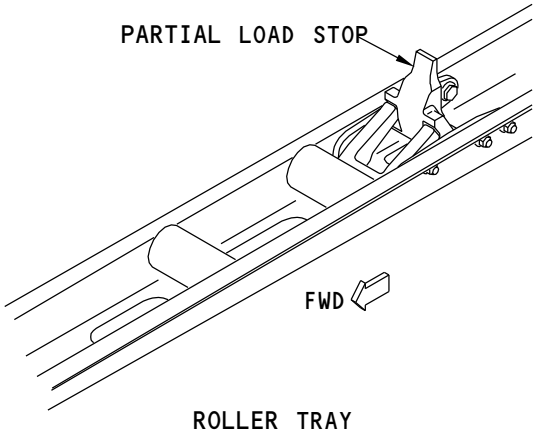
Location

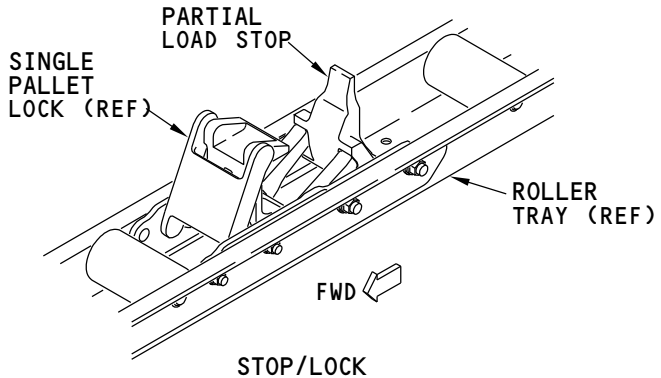
Partial load stops are in many places in the forward and aft cargo compartments. In both cargo compartments, the stops attach to the four roller trays adjacent to the longitudinal PDUs.

In the forward cargo compartment, additional stops attach to the center set of roller trays.

The stops are in rows. Most rows have four stops. In the forward cargo compartment, the rows for container bays D, E, and F have six stops. The additional stops are necessary to divide the weight of the cargo evenly to the airplane structure.







NOTE: FORWARD SYSTEM SHOWN, AFT SIMILAR ● = PARTIAL LOAD STOP ⧈ = STOP/LOCK

M40607 S000616967_V1

CARGO HANDLING SYSTEM - PARTIAL LOAD STOPS - INTRODUCTION

CARGO HANDLING SYSTEM - PARTIAL LOAD STOPS - OPERATION

Physical Description

Partial load stops are spring-loaded mechanical units. There are six types of partial load stops that are almost the same (not all shown). Most partial load stops are single units, but some may be part of a stop/lock unit (not shown).

Each partial load stop has these parts:

- Lockhead
- Base
- Fork
- Springs (not shown).

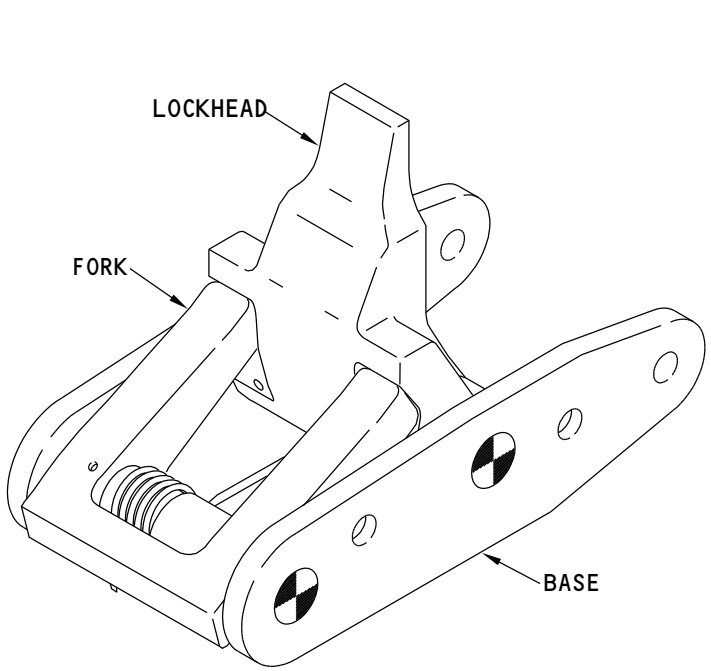
Operation

You manually put the lockhead up to the STOP position to restrain a partial load of containers. The lockhead is spring loaded to down so you must lift the lockhead until the fork locks the lockhead in the STOP position.

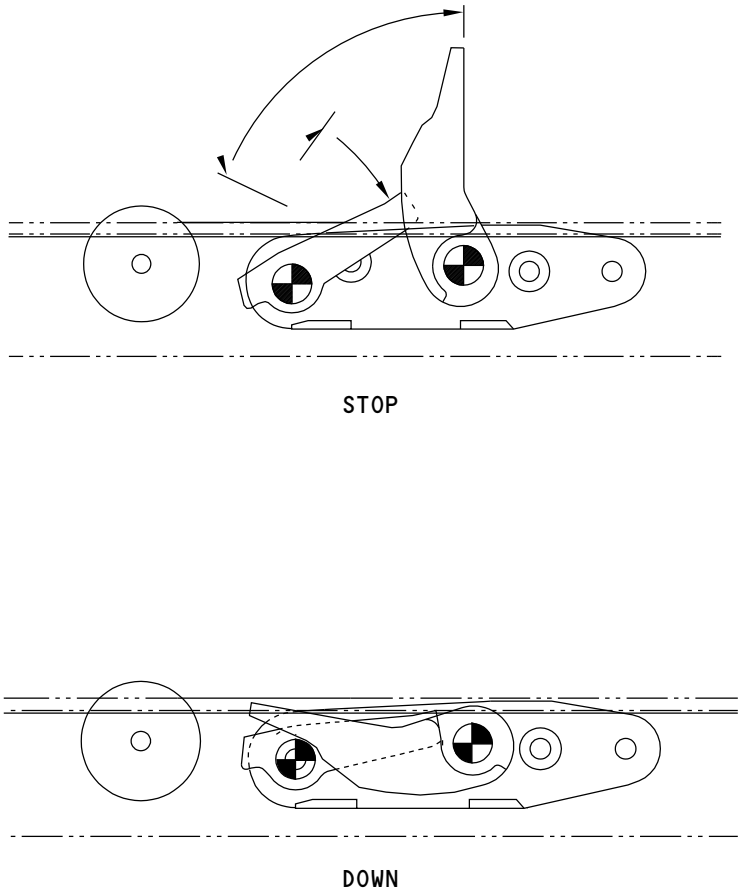
You manually put down the lockhead to load more containers or to unload a partial load of containers. The lockhead will go down by itself when you lift the fork.

Training Information Point

When you put the lockhead down, it is easier if you hold the lockhead as you lift the fork. This lets you get the fork up all the way and your fingers out of the way of the lockhead before the lockhead goes down.



PARTIAL LOAD STOP
(TYPICAL)



M40611 S000616971_V1

CARGO HANDLING SYSTEM - PARTIAL LOAD STOPS - OPERATION

CARGO HANDLING SYSTEM - PALLET LOCK - INTRODUCTION

Purpose

Pallet locks give longitudinal and vertical restraint for pallets and pallet sized containers, LD-7 and LD-11.

Location

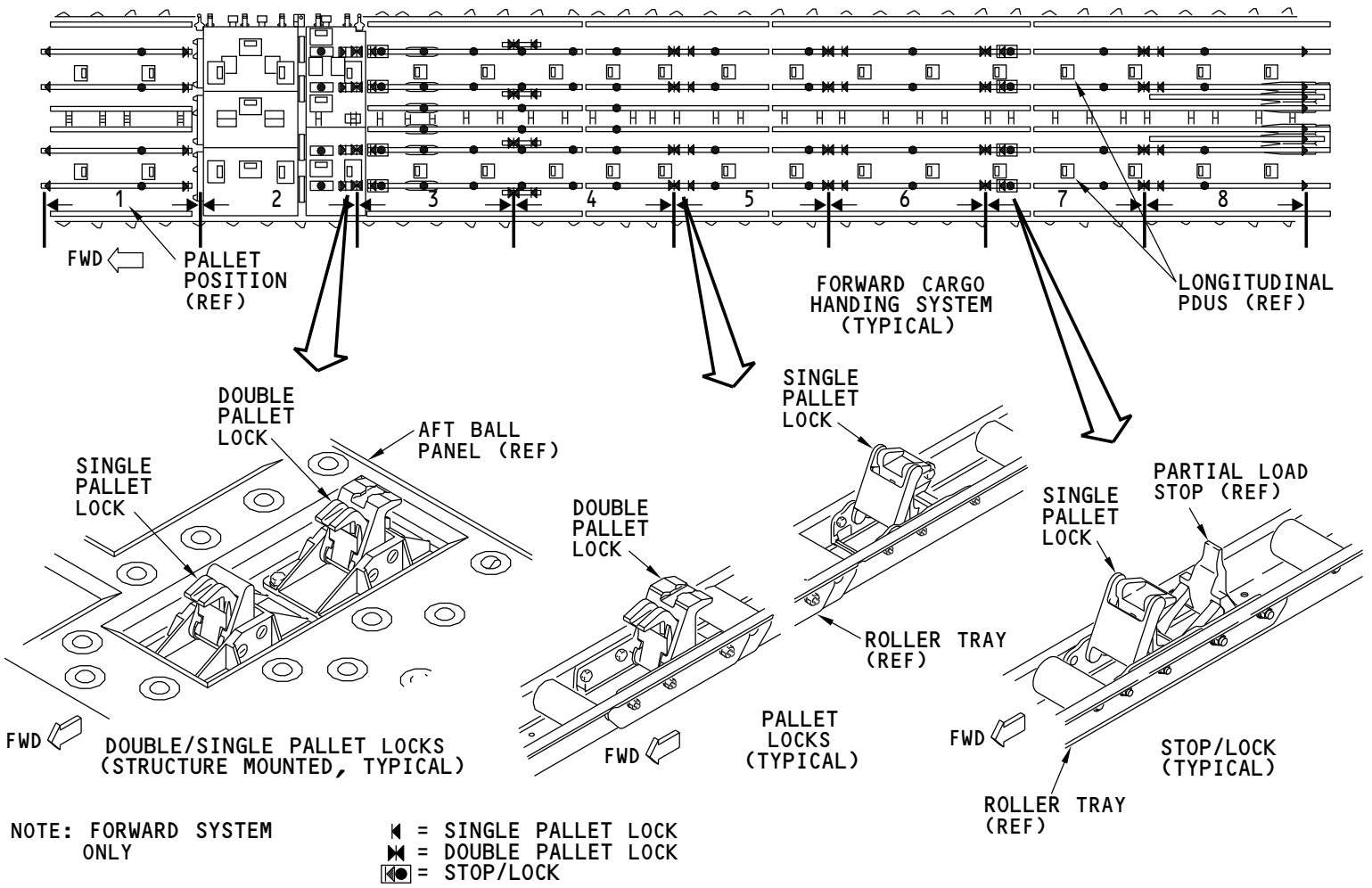
Pallet locks are in the forward cargo compartment only.

Most pallet locks mount to the roller trays and some mount to floor structure. Some pallet locks may be part of a stop/lock unit.

The locks mount to the four roller trays that parallel the longitudinal PDUs.

The floor structure mounted locks are in the area of the aft ball panels.

The locks are in rows, each row in the forward cargo compartment has four locks.



M40616 S000616976_V1

CARGO HANDLING SYSTEM - PALLET LOCK - INTRODUCTION

CARGO HANDLING SYSTEM - PALLET LOCK - OPERATION

Physical Description

All pallet locks are spring-loaded mechanical units. There are seven similar types of pallet locks (not all shown). More than one type is necessary because of mounting and space limits. Some pallet locks have parts that let them restrain only one pallet. Others have parts that let them restrain two pallets.

Pallet locks have these parts:

- Lockhead(s)
- Anchor fitting (not all locks)
- Base
- Pawl (double pallet locks)
- Link (single pallet locks)
- Springs (not shown).

Double Pallet Lock Operation

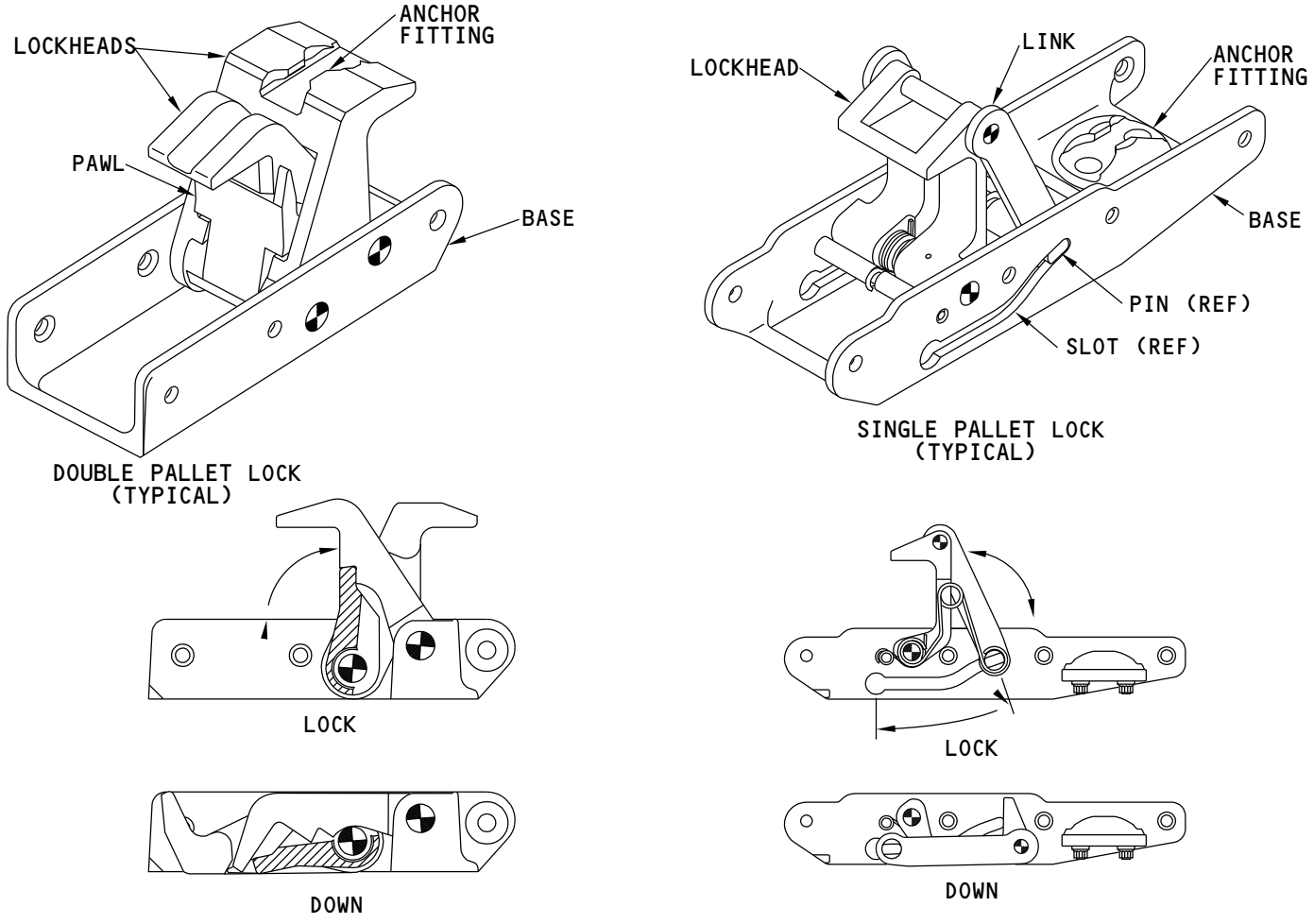
You manually put the lockhead up to restrain pallets. The lockhead is spring loaded to down so you must lift the lockheads until the pawl locks the lockheads in the LOCK position.

You manually put down the lockheads to unload cargo. The lockheads will go down on there own when you pull the upper part of the pawl away from them. It is easier to move the pawl if you hold the heads up then let them go down.

Single Pallet Lock Operation

You manually put the lockhead up to the LOCK position to restrain one pallet. The lockhead is spring-loaded down so you must lift the lockhead until the link locks the lockhead in the LOCK position.

You manually put down the lockhead to unload cargo. The lockhead will go down by itself when you push the lower part of the link towards it. The lower part of the link attaches to a pin. The pin follows slots in the base when you push on the lower part of the link.



M40618 S000616978_V1

CARGO HANDLING SYSTEM - PALLET LOCK - OPERATION

CARGO HANDLING SYSTEM - STOP/LOCK - INTRODUCTION

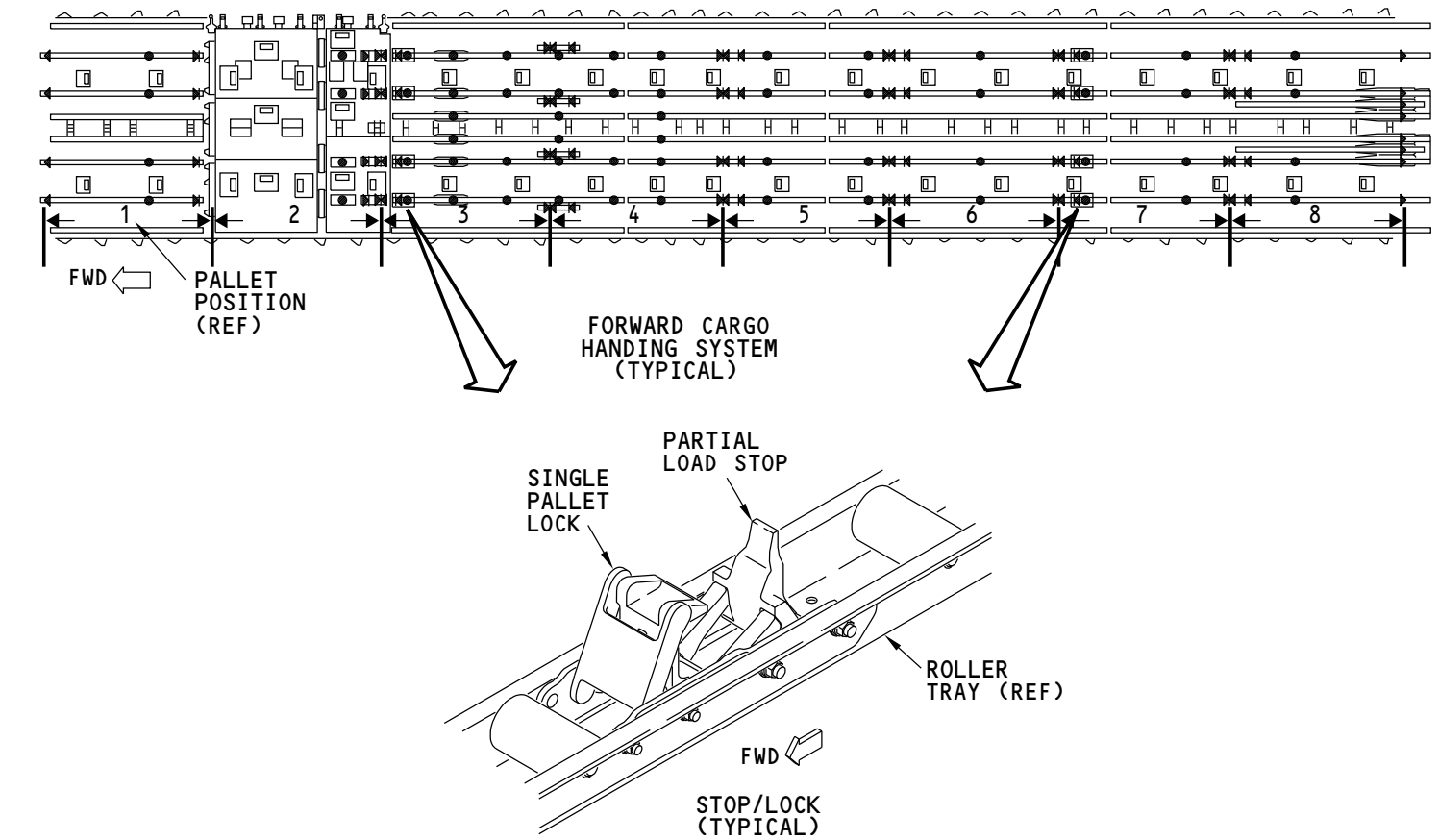
Purpose

Stop/locks give longitudinal and vertical restraint for pallets. Some locks also give longitudinal restraint for containers.

Location

The stop/locks are in the forward cargo compartment only. The forward compartment has one row of stop/locks. The stop/locks attach to the four roller trays adjacent to the longitudinal PDUs and aft of the ball panels. The stop/locks have partial load stops.

The stop/locks are in the forward cargo compartment only. The forward compartment has two rows of stop/locks. The stop/locks attach to the four roller trays adjacent to the longitudinal PDUs and aft of the ball panels. The stop/locks have partial load stops.



NOTE: FORWARD SYSTEM ONLY

= STOP/LOCK

M40621 S000616981_V1

CARGO HANDLING SYSTEM - STOP/LOCK - INTRODUCTION

CARGO HANDLING SYSTEM - STOP/LOCK - OPERATION

Physical Description

The stop locks are spring-loaded mechanical units with these parts:

- Lockhead(s)
- Base
- Pin
- Link
- Springs (not shown).

Operation

The stop/lock has two lockheads. You use only one at a time. Containers use one lockhead, pallets use the other.

You manually set the stop/locks to one of these positions:

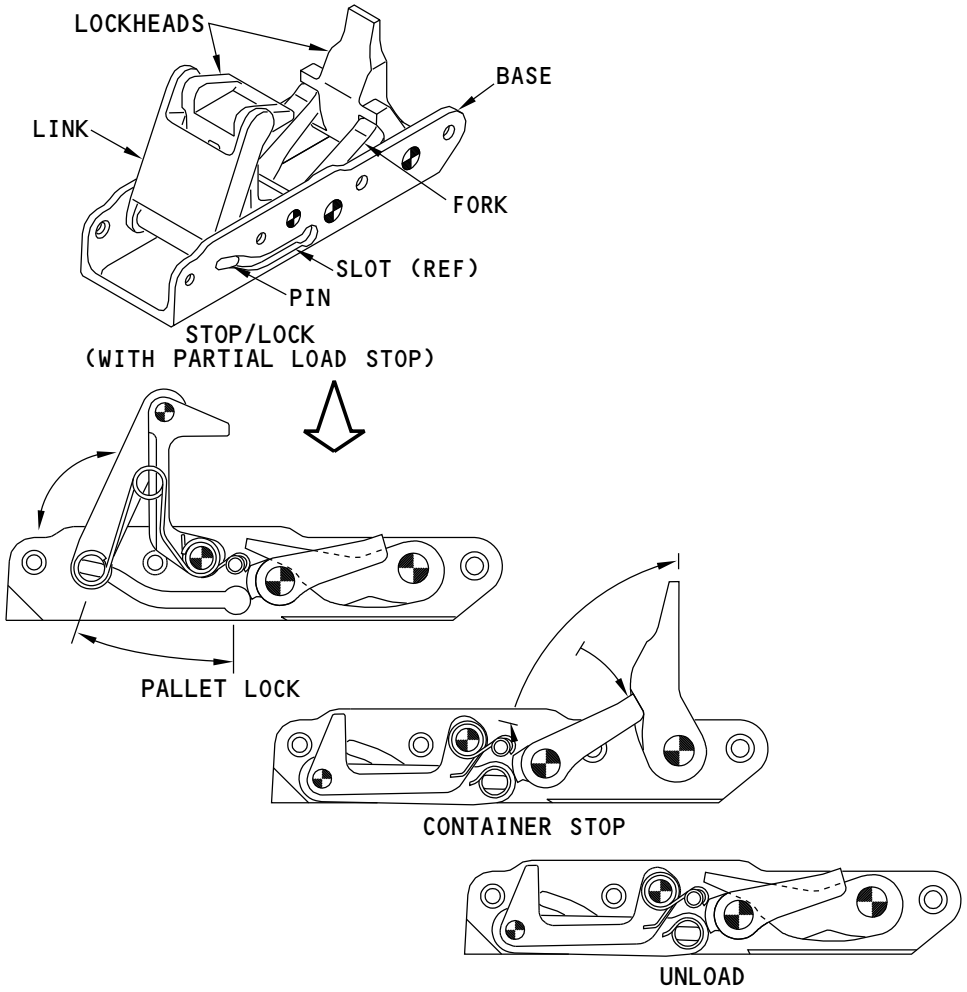
- LOCK (for pallets)
- STOP (for containers)
- UNLOAD.

You manually put the lockheads up, LOCK or STOP position to restrain cargo. The lockheads are spring loaded to down so you must lift the lockheads until the fork or the link locks the heads up.

You manually put down the lockheads to unload cargo.

The container stop lockhead (fwd cargo) will go down by itself when you lift the fork. It is easier to lower the head if you hold the head up as you lift the fork.

The pallet lock lockhead (fwd cargo) will go down by itself when you push the lower part of the link towards it. The lower part of the link attaches to the pin. The pin follows the slots in the base when you push on the lower part of the link.



M40625 S000616985_V1

CARGO HANDLING SYSTEM - STOP/LOCK - OPERATION

CARGO HANDLING SYSTEM - END STOP

General

There are two types of end stops:

- End stop with vertical restraint
- End stop without vertical restraint.

All end stops give longitudinal restraint for containers and pallets. End stops with vertical restraint give vertical restraint for pallets and pallet sized containers, LD-7 and LD-11.

Physical Description

The forward cargo compartment uses both types of end stops.

The aft cargo compartment uses only end stops without vertical restraint.

The stops are one piece, fixed (non-retractable) units. Stops with vertical restraint have an anchor fitting.

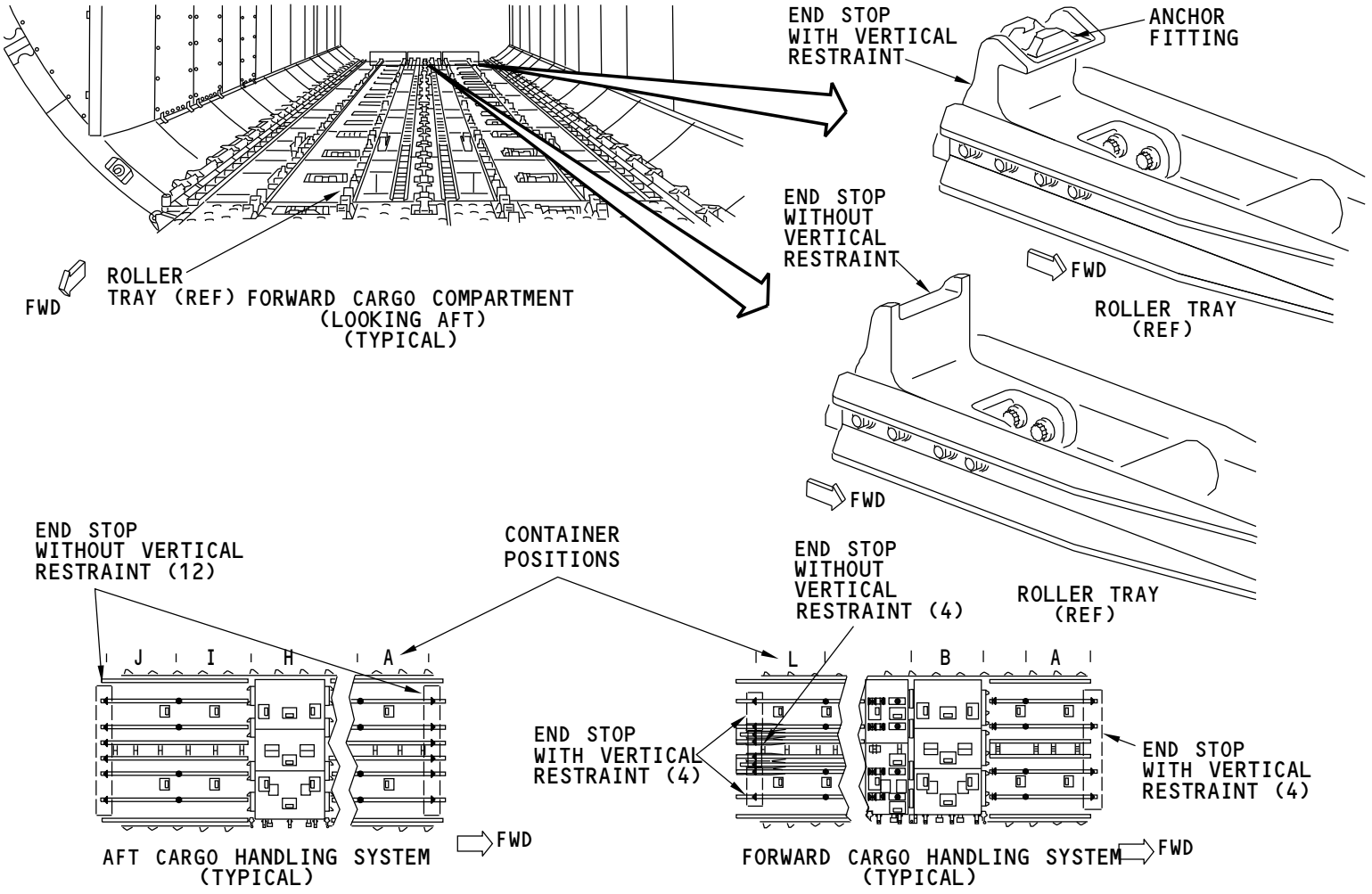
Location

The end stops mount to the roller trays at each end of the compartments.

The forward cargo compartment has four with vertical restraint at each end.

The forward cargo compartment also has four end stops without vertical restraint in the aft end of the compartment.

The aft cargo compartment has six without vertical restraint at each end.



M40629 S000616989_V1

CARGO HANDLING SYSTEM - END STOP

CARGO HANDLING SYSTEM - CARGO SYSTEM CONTROLLER

Purpose

The cargo system controllers (CSCs) give an interface between the cargo handling controls and the cargo handling electrical/mechanical units. The controllers control the operation and the sequence of operation for the units and give protection to prevent actuator/gear motor overheat and burnout.

Physical Description

The forward and aft CSCs are the same. The CSCs are passively cooled units.

Location

The forward cargo system controller is on the E16-2 shelf.

The aft cargo system controller is on the E17-1 shelf (not shown).

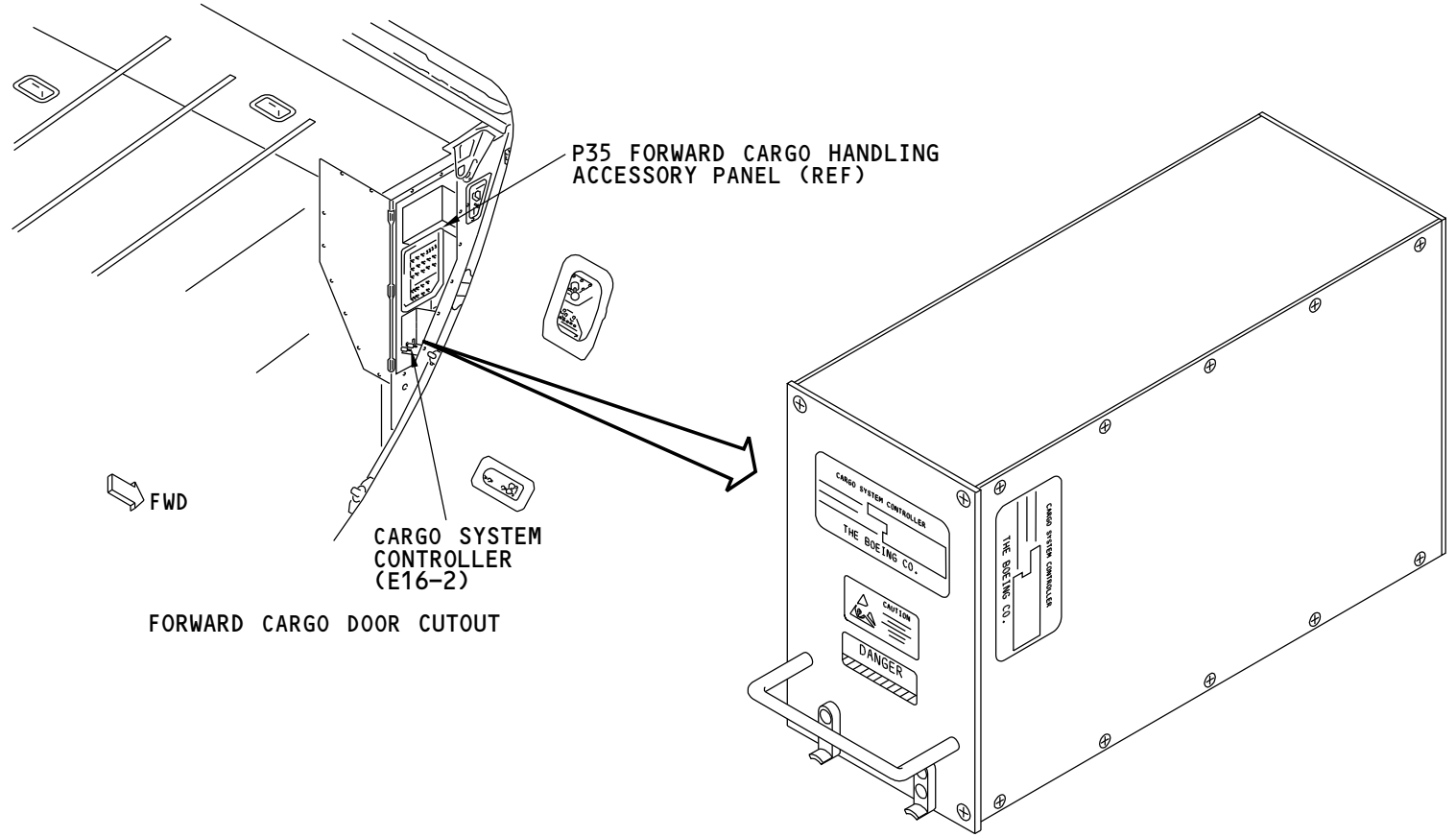
Operation

Controller logic changes with hard-wired programming pins. Pins in the electrical connector of the equipment rack (not shown), tell the controllers which cargo compartment they are in and which system options are active. This lets the controllers adjust for the difference between the forward and aft cargo compartments and for system options. For example, programming pins give this type of information:

- Forward or aft cargo compartment
- Aft large cargo door
- Crew rest in place 1
- Crew rest in place 2
- No gearmotor devices installed.

Training Information Point

The controllers do not have BITE. To do a test, you operate the system to see if it operates correctly. The controllers do not have an interface with the AIMS.



M40631 S000616991_V1

CARGO HANDLING SYSTEM - CARGO SYSTEM CONTROLLER

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CARGO HANDLING SYSTEM - OPERATION - CONTROLS

General

Controls for the cargo handling system let you operate the system. The controls for the forward and aft cargo handling systems are almost the same.

These are the controls that you use to operate the systems:

- Cargo control joystick
- P24 forward cargo handling control panel or P27 aft cargo handling control panel (not shown)
- Secondary joystick panel.

Location

Controls for the forward and aft cargo handling systems are near the forward part of the cargo cut out.

The cargo control joystick and the cargo handling control panel, P24 forward system and P27 aft system (not shown) are forward of the door cut out on the exterior.

The secondary joystick panel is in the ceiling of the cargo compartment between the interior cargo door control and cargo handling accessory panel (P35 forward or P39 aft, not shown).

P24 Cargo Handling Control Panels (P27 not shown)

The forward cargo handling control panel has these parts:

- SYSTEM POWER switch
- System power LED
- PDU AFT/FWD switch
- PDU LEFT/BOTH/RIGHT switch
- PALLETS/CONTAINERS switch
- Bay on LEDs
- BAY OFF switches.

The aft cargo handling control panel (not shown) has the same parts except for the PALLETS/CONTAINERS switch.

The SYSTEM POWER switch is a two-position, ON/OFF switch. This switch lets you set system power to on/off.

The yellow system power ON LED comes on when power is on the system. The CSC controls the LED.

The PDU AFT/FWD switch is a two-position switch. This switch lets you set the area of the cargo compartment in which PDUs will be active.

The PDU LEFT/BOTH/RIGHT switch is a three-position switch. This switch lets you set the side of the compartment in which PDUs will be active.

The PALLETS/CONTAINERS switch is a two-position switch. This switch lets you set the system for the type of ULDs being loaded or unloaded.

The yellow Bay on LEDs come on to let you know which bays have active PDUs.

The BAY OFF switches are three-position toggle switches spring-loaded to the center position. The up or down position lets you set the PDUs on or off. (Up or down for on, up or down again for off.) The P27 aft cargo handling control panel (not shown) has these bay off switches:

- A, B, C, D, E, F, and J.

Lighting for the cargo handling control panel comes from an area light above the panel. The light shines down on the panel so you can see it when it is dark outside. The light also shows that power is available to the cargo handling system, because it is on when the ground handling bus has power.

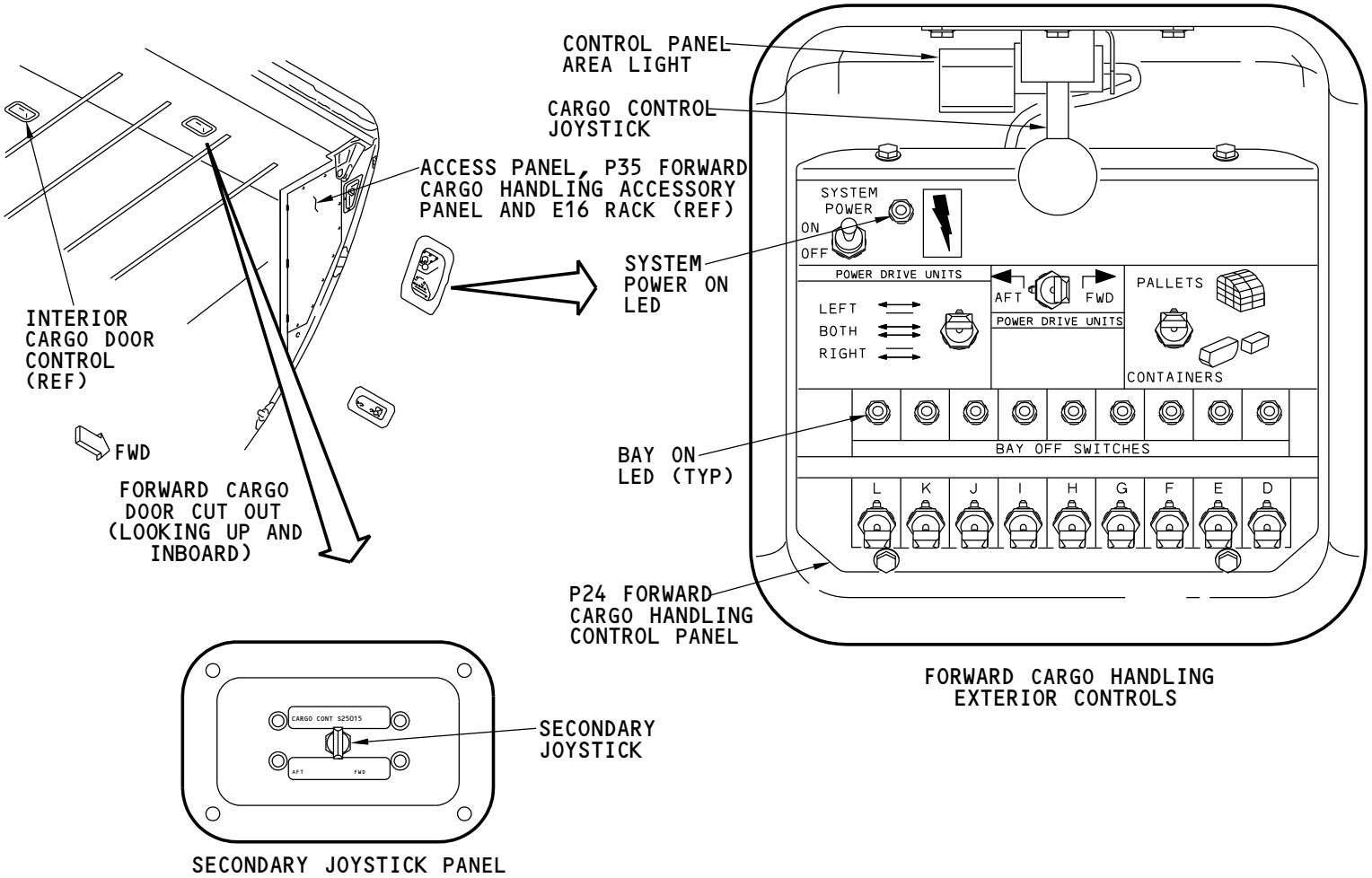
The cargo control joystick is not part of the cargo handling control panel.

Cargo Control Joystick

The forward and aft (not shown) cargo control joysticks let you control the longitudinal and lateral movement of ULDs. The joystick has five positions: IN, OUT, FWD, AFT and neutral. It is spring loaded to the neutral position.

Secondary Joystick Panel

This panel has only the secondary joystick. This joystick is a three-position toggle switch that is spring-loaded to the middle position. The switch functions as a joystick because it lets you move cargo forward or aft but not on to the ball panel.



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CARGO HANDLING SYSTEM - OPERATION - CONTROLS

CARGO HANDLING SYSTEM - FUNCTIONAL DESCRIPTION - POWER

General

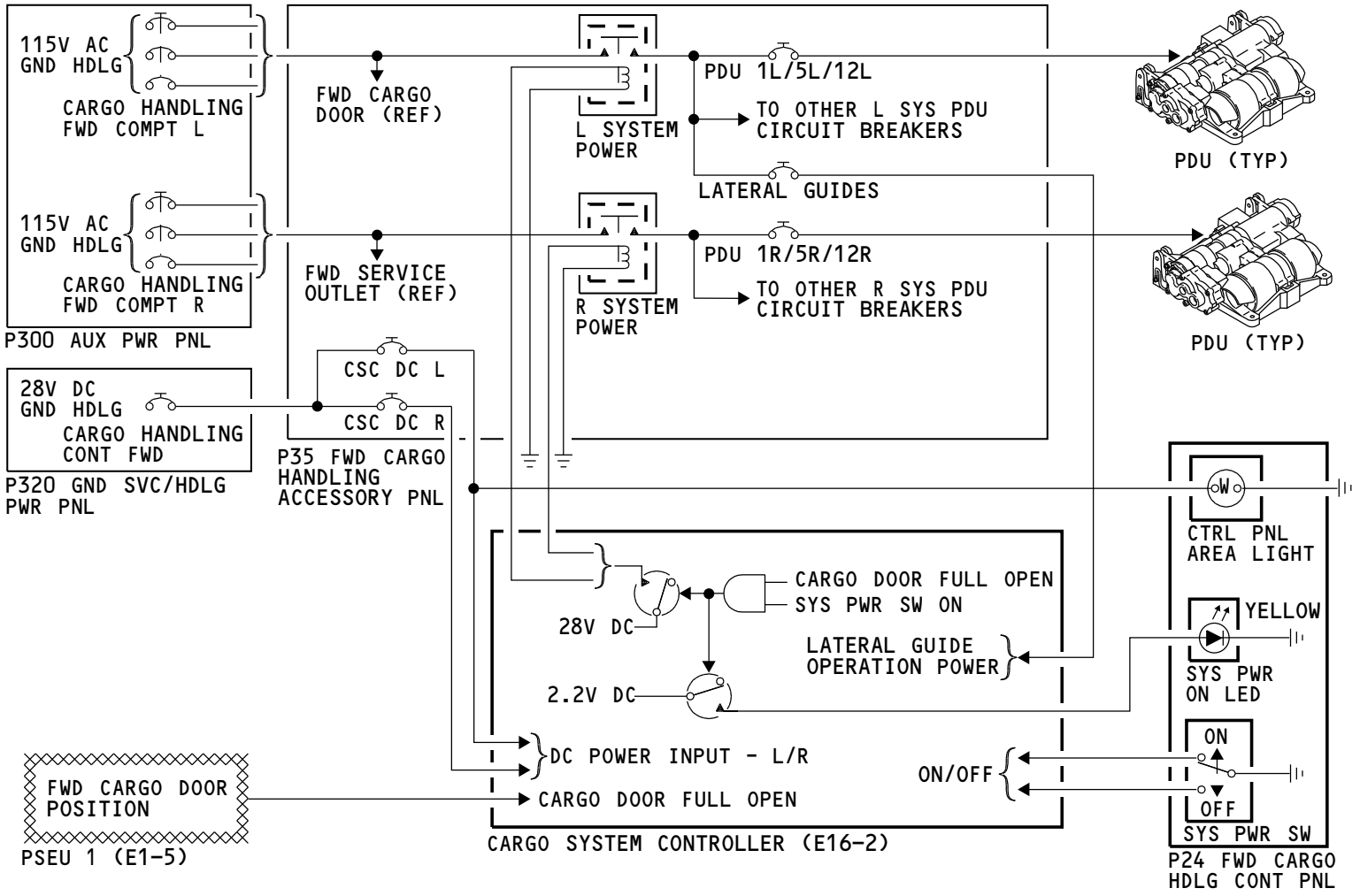
The cargo handling system gets power from the ground handling bus. It uses three phase 115v ac for operation and 28v dc for control.

Operation power loads go to two circuits: left system power and right system power. The CSC uses the left and right system relays to control system power.

System Power

The ground handling bus gives power directly to the cargo control panel area light. The light is on when the bus has power.

The CSC turns on system power if you open the cargo door to full open and set the cargo handling system power switch to the ON position. When power is on the system, the CSC turns on the system power ON LED.



M40637 S000616997_V1

CARGO HANDLING SYSTEM - FUNCTIONAL DESCRIPTION - POWER

CARGO HANDLING SYSTEM - FUNCTIONAL DESCRIPTION - LATERAL GUIDE

General

For control, the lateral guides have two major groups, forward and aft. Each major group has two minor groups, left and right. Guides in each major group have a number. The numbers increase from right to left.

These are the minor groups and the guides in them:

- Forward right: FWD 1 and FWD 2
- Forward left: FWD 2 and FWD 3
- Aft right: AFT 1 and AFT 2
- Aft left: AFT 3 and AFT 4.

Only the guides in a single major group operate at a time. Within a major group, the left and right minor groups of guides may operate independently or at the same time. The lateral guides have two positions, up and down.

CSC Control

Power switching circuits in the CSC get 115v ac single phase voltage from the ground handling bus. The switching circuits control the voltage and monitor for current flow to the lateral guides. The default value for CSC logic is to command the guides to up. The down command is based on switch inputs.

The power switching circuits give voltage to move the guides up or down. Limit switches in the guides stop the current flow and apply a brake when the guide moves to the desired position. If a guide does not stop the current within three seconds after a up or down command is given, the power switching circuit removes the voltage. If no current draw is sensed within seventy-five milliseconds after a command is given, the voltage is removed.

The CSC uses inputs from these switches to set the position of the lateral guides:

- Cargo control joystick
- PDU forward/aft switch
- PDU left/both/right switch
- Pallet/container switch.

Guides UP Position

All guides go to up when not commanded to down.

Forward Right Guides 1 and 2 Down Position

Forward guides 1 and 2 go to the down position when all of these events occur:

- Joystick to FWD or AFT
- System set to PDU RIGHT or to PDU BOTH
- System set to PDU FWD.

Forward Left Guides 2 and 3 Down Position

Forward guides 2 and 3 go to the down position when all of these events occur:

- Joystick to FWD or AFT
- System set to PDU LEFT or to PDU BOTH
- System set to PDU FWD.

Aft Right Guides 1 and 2 Down Position

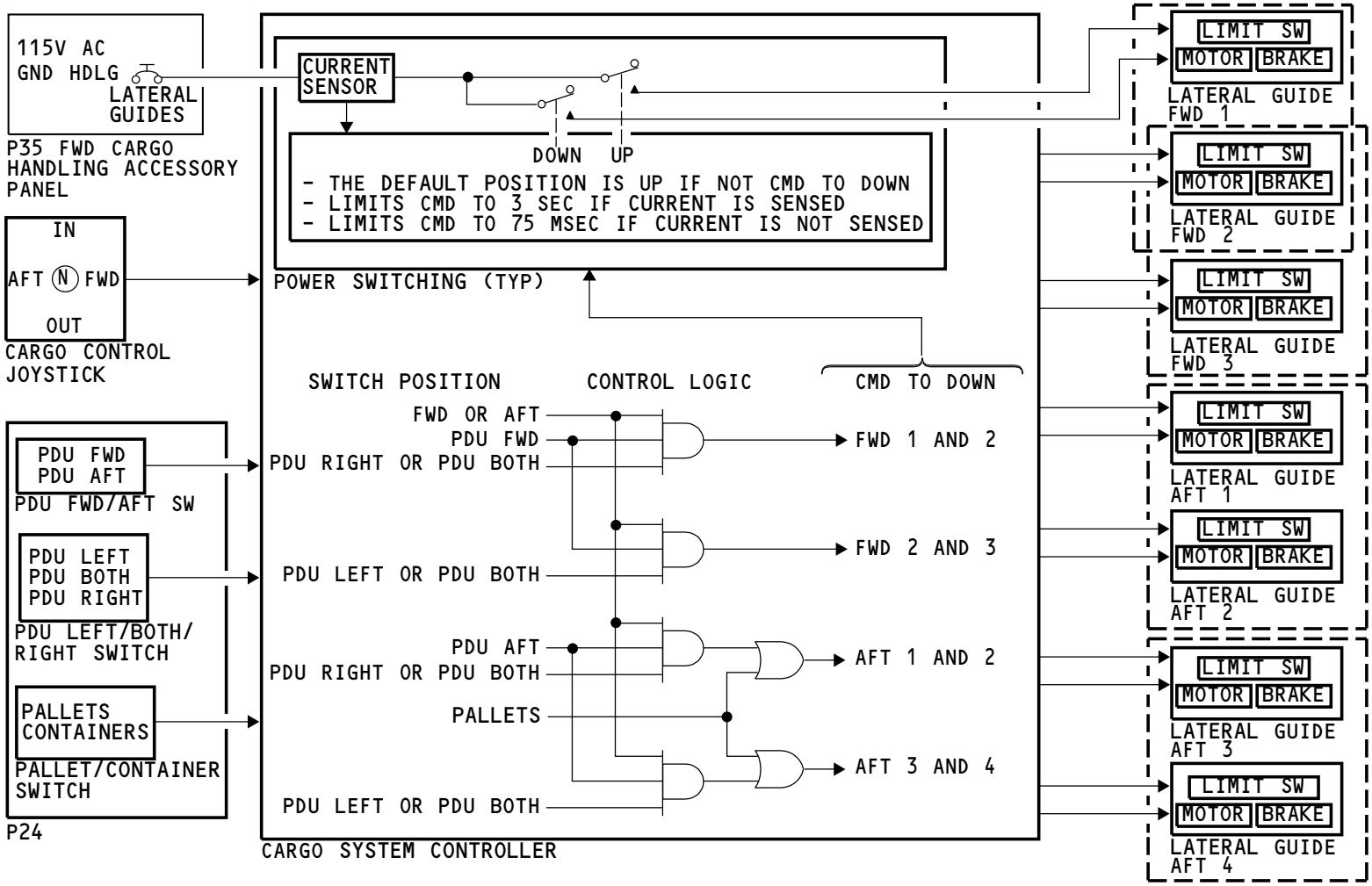
Aft guides 1 and 2 go to the down position when the system is set to PALLETS or when all of these events occur:

- Joystick to FWD or AFT
- System set to PDU RIGHT or to PDU BOTH
- System set to PDU AFT.

Aft Left Guides 3 and 4 Down Position

Aft guides 3 and 4 go to the down position when the system is set to PALLETS or when all of these events occur:

- Joystick to FWD or AFT
- System set to PDU LEFT or to PDU BOTH
- System set to PDU AFT.



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CARGO HANDLING SYSTEM - FUNCTIONAL DESCRIPTION - LATERAL GUIDE

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CARGO HANDLING SYSTEM - FUNCTIONAL DESCRIPTION - PDU

General

For control purposes, the powered drive units (PDUs) are in two major groups, longitudinal and lateral. The longitudinal group has two minor groups, left and right. All PDUs are also grouped by location in the compartment (bays). These are PDUs by group and location for the forward cargo handling system. The aft system is almost the same.

PDU Groups and Location		
Area	**Major Group**	**PDUs by Row**
Forward Bays	Longitudinal	1L/R, 2L/R
Ball Panel	Longitudinal	3L/R, 5L/R, 7L/R
	Lateral	4L/C/R, 6L/C/R
Aft Bays	Longitudinal	8L/R through 21L/R

Only the PDUs in a single major group operate at a given time. Within the longitudinal group, the left and right minor groups may operate independently or at the same time. You can operate all PDUs row by row. The PDUs have three conditions:

- Erect/drive
- Erect/brake
- Down.

All PDUs get 115v ac, three-phase voltage from the ground handling bus. They use this ac voltage for the erection coil, motor, brake and phase reversing relays.

The CSC uses inputs from these switches to set the position of the PDUs:

- Secondary joystick
- Cargo control joystick
- PDU forward/aft switch
- PDU left/both/right switch
- Pallet/container switch
- Bay off switches.

CSC Control

Control circuits within the CSC, use phase reversing relays in the PDUs to control when and how voltage is given to the PDU motor. The circuits also control the erection coils and brake for the PDUs in the ball panel area. PDUs forward and aft of the ball panels have their erection coils and brake active when system power is on and the PDU is not in the drive condition. CSC control circuits command PDUs to erect/drive one row at a time with a small delay between rows. This reduces inrush current demands.

The bay off switches stop the drive command for rows of PDUs. This prevents PDUs from scrubbing under ULDs that are in position. The PDU rows affected by the bay off switches are different for containers and pallets. These charts show the functions of the bay off switches for the forward cargo handling system. The aft system is almost the same.

Bay Off Switches (CONTAINER Mode)			
Action	**Sw**	**Bay(s) Effected**	**PDU Rows Active**
Toggle On	D	D	8, 9
Toggle On	E	D, E	8, 9, 10
Toggle On	F	D, E, F	8, 9, 10, 11, 12
Toggle On	G	D, E, F, G	8, 9, 10, 11, 12, 13, 14
Toggle On	H	D, E, F, G, H	8, 9, 10, 11, 12, 13, 14, 15
Toggle On	I	D, E, F, G, H, I	8, 9, 10, 11, 12, 13, 14, 15, 16, 17
Toggle On	J	D, E, F, G, H, I, J	8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18
Toggle On	K	D, E, F, G, H, I, J, K	8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19

CARGO HANDLING SYSTEM - FUNCTIONAL DESCRIPTION - PDU

(Continued)

Bay Off Switches (CONTAINER Mode)			
Action	**Sw**	**Bay(s) Effected**	**PDU Rows Active**
Toggle On	L	D, E, F, G, H, I, J, K, L	8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21
Action	Sw	Bay(s) Effected	PDU Rows Not Active
Toggle Off	D	D, E, F, G, H, I, J, K, L	8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21
Toggle Off	E	E, F, G, H, I, J, K, L	10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21
Toggle Off	F	F, G, H, I, J, K, L	11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21
Toggle Off	G	G, H, I, J, K, L	13, 14, 15, 16, 17, 18, 19, 20, 21
Toggle Off	H	H, I, J, K, L	14, 15, 16, 17, 18, 19, 20, 21
Toggle Off	I	I, J, K, L	16, 17, 18, 19, 20, 21
Toggle Off	J	J, K, L	18, 19, 20, 21
Toggle Off	K	K, L	19, 20, 21
Toggle Off	L	L	20, 21

Bay Off Switches (PALLET Mode)			
Action	**Sw**	**Bay(s) Effected**	**PDU Rows Active**
Toggle On	D	D	8, 9

Bay Off Switches (PALLET Mode)			
Action	**Sw**	**Bay(s) Effected**	**PDU Rows Active**
Toggle On	E	D, E, F	8, 9, 10, 11, 12
Toggle On	F	D, E, F	8, 9, 10, 11, 12
Toggle On	G	D, E, F, G	8, 9, 10, 11, 12, 13, 14
Toggle On	H	D, E, F, G, H, I	8, 9, 10, 11, 12, 13, 14, 15, 16
Toggle On	I	D, E, F, G, H, I	8, 9, 10, 11, 12, 13, 14, 15, 16
Toggle On	J	D, E, F, G, H, I, J, K	8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19
Toggle On	K	D, E, F, G, H, I, J, K	8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19
Toggle On	L	D, E, F, G, H, I, J, K, L	8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21
Action	Sw	Bay(s) Effected	PDU Rows Not Active
Toggle Off	D	D, E, F, G, H, I, J, K, L	8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21
Toggle Off	E	E, F, G, H, I, J, K, L	10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21
Toggle Off	F	E, F, G, H, I, J, K, L	10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21

(Continued)

Bay Off Switches (PALLET Mode)			
Action	**Sw**	**Bay(s) Effected**	**PDU Rows Active**
Toggle Off	G	G, H, I, J, K, L	13, 14, 15, 16, 17, 18, 19, 20, 21
Toggle Off	H	H, I, J, K, L	15, 16, 17, 18, 19, 20, 21
Toggle Off	I	H, I, J, K, L	15, 16, 17, 18, 19, 20, 21
Toggle Off	J	J, K, L	17, 18, 19, 20, 21
Toggle Off	K	K, L	20, 21
Toggle Off	L	K, L	20, 21

The PDU erect command does not operate (ball panel area only) the longitudinal PDUs when the cargo control joystick is moved to IN or to OUT. Lateral PDUs erect command stops when the cargo control joystick is moved to FWD or AFT. The erect command for all PDUs stops when there is no system ac power.

Longitudinal PDUs - Ball Panel

The CSC uses almost the same logic to control longitudinal PDUs in the ball panel area as it uses for the PDUs in the forward and aft bays. The PDU forward/aft switch and the secondary joystick do not control the longitudinal PDUs in the ball panel area. The CSC also controls the erect/brake and down conditions for these PDUs. The PDUs go to the down condition when the cargo control joystick is set to IN or OUT.

Longitudinal PDUs - Ball Panel/Forward Bays

Longitudinal PDUs in the forward cargo bays stay in the erect/brake condition when system ac power is on and the PDUs are not commanded to the erect/drive condition.

PDUs in the ball panel and forward bays go to the erect/drive condition when all of these events occur:

- System set to PDU FWD
- Cargo control joystick to FWD or AFT or secondary joystick to FWD or AFT (secondary joystick affects only PDUs fwd or aft of ball panels)
- Forward lateral guides in the down position.

The position of the PDU left/both/right switch and the container/pallet switch controls which minor group of longitudinal PDUs go to the erect/drive condition when the cargo control joystick is set to FWD or AFT. If BOTH or PALLETS is set, then all PDUs in the area go to erect/drive condition. If CONTAINERS and LEFT or RIGHT is set, then only the PDUs in the area on the related side go to the erect/drive condition.

Longitudinal PDUs - Ball Panel/AFT Bays

Control for the longitudinal PDUs in the ball panel and aft bays is the same as the ones in the forward bays except for the following.

PDUs in the ball panel and aft bays go to the erect/drive condition when all of these events occur:

- System set to Bay ON for at least one bay
- System set to PDU AFT
- Cargo control joystick to FWD or AFT or secondary joystick to FWD or AFT (secondary joystick affects only PDUs fwd or aft of ball panels)
- Aft lateral guides in the down position
- Aft lateral guides in the down position.

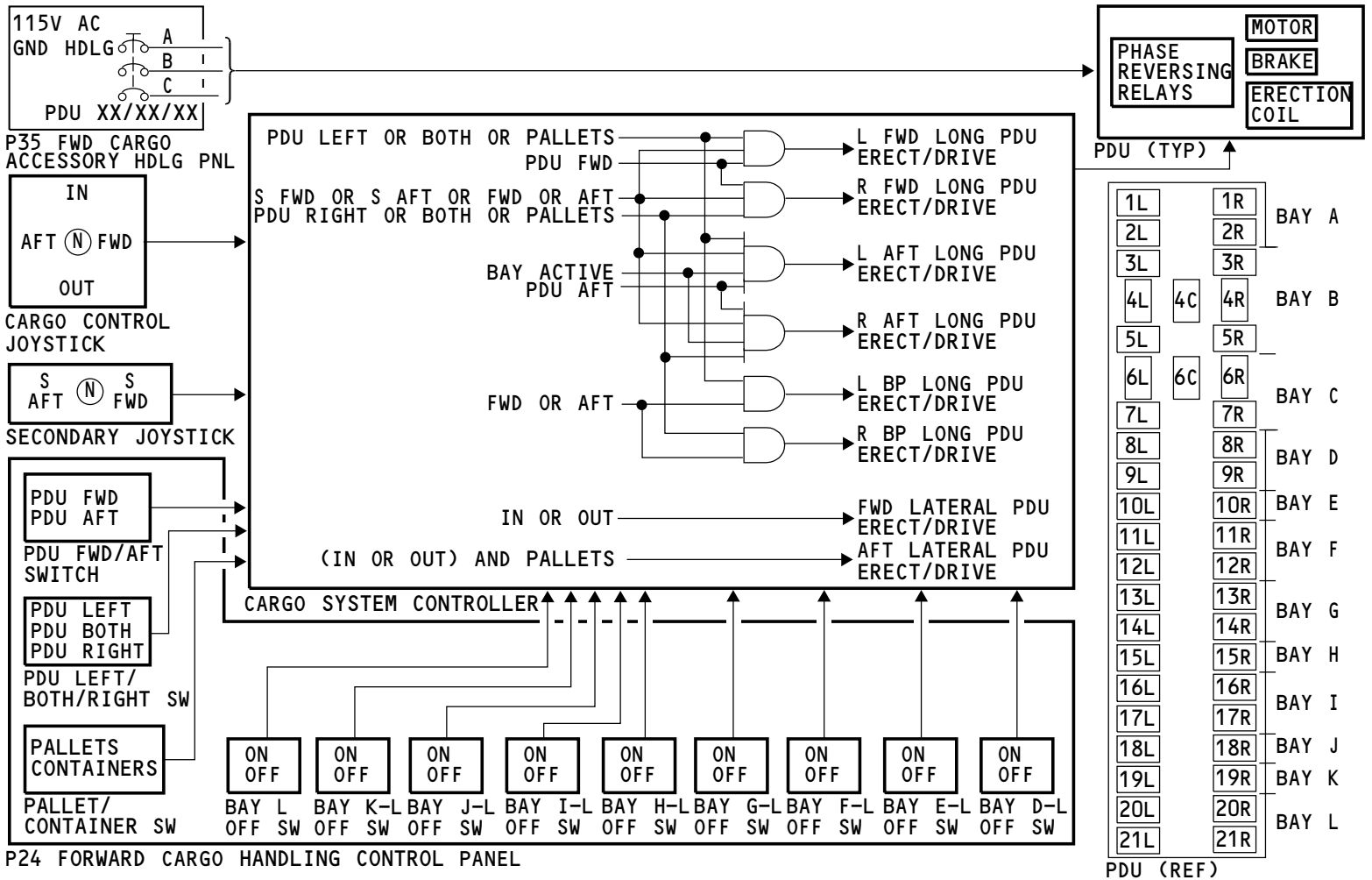
Lateral PDUs

All lateral PDUs go to the erect/drive condition when all of these events occur:

- System set to PALLETS
- Cargo control joystick to IN or OUT.

The forward set of lateral PDUs go to the erect/drive condition when all of these events occur:

- System set to CONTAINERS
- Cargo control joystick to IN or OUT.



NOTE: TYPICAL FWD SYS SHOWN, AFT SIMILAR

M40643 S000617003_V1

CARGO HANDLING SYSTEM - FUNCTIONAL DESCRIPTION - PDU

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EMERGENCY - INTRODUCTION

General Description

The airplane has this emergency equipment:

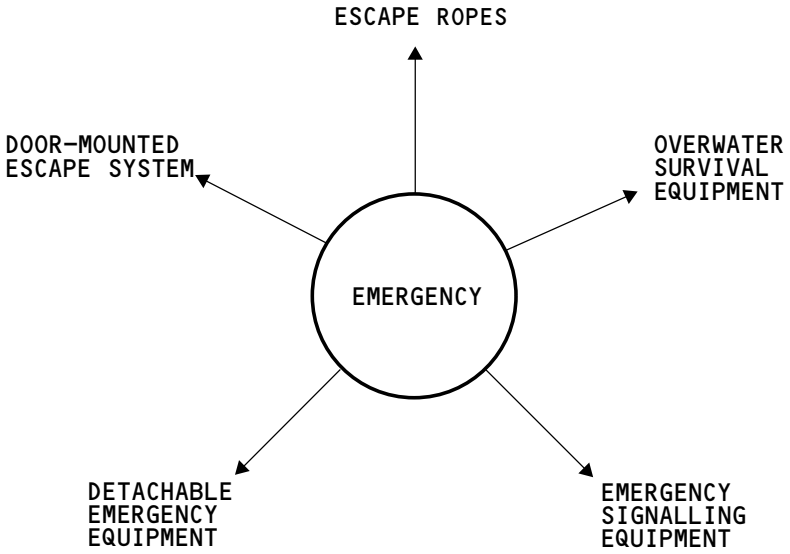
- Escape ropes
- Overwater survival equipment
- Emergency signaling equipment
- Detachable emergency equipment
- Door-mounted escape system.

The door-mounted escape system and escape ropes help passengers and crew get out of the airplane in an emergency. See the door-mounted escape system section for more information about the door-mounted escape system (SECTION 25-66).

Life vests are the overwater survival equipment.

Emergency signalling equipment includes emergency locator transmitters and the emergency evacuation signal system.

Detachable emergency equipment includes fire-fighting equipment, medical equipment, megaphones, and flashlights.



M40654 S000617014_V1

EMERGENCY - INTRODUCTION

EMERGENCY - ESCAPE ROPES

Purpose

The escape ropes permit the flight crew to make their way safely to the ground through the number 2 windows.

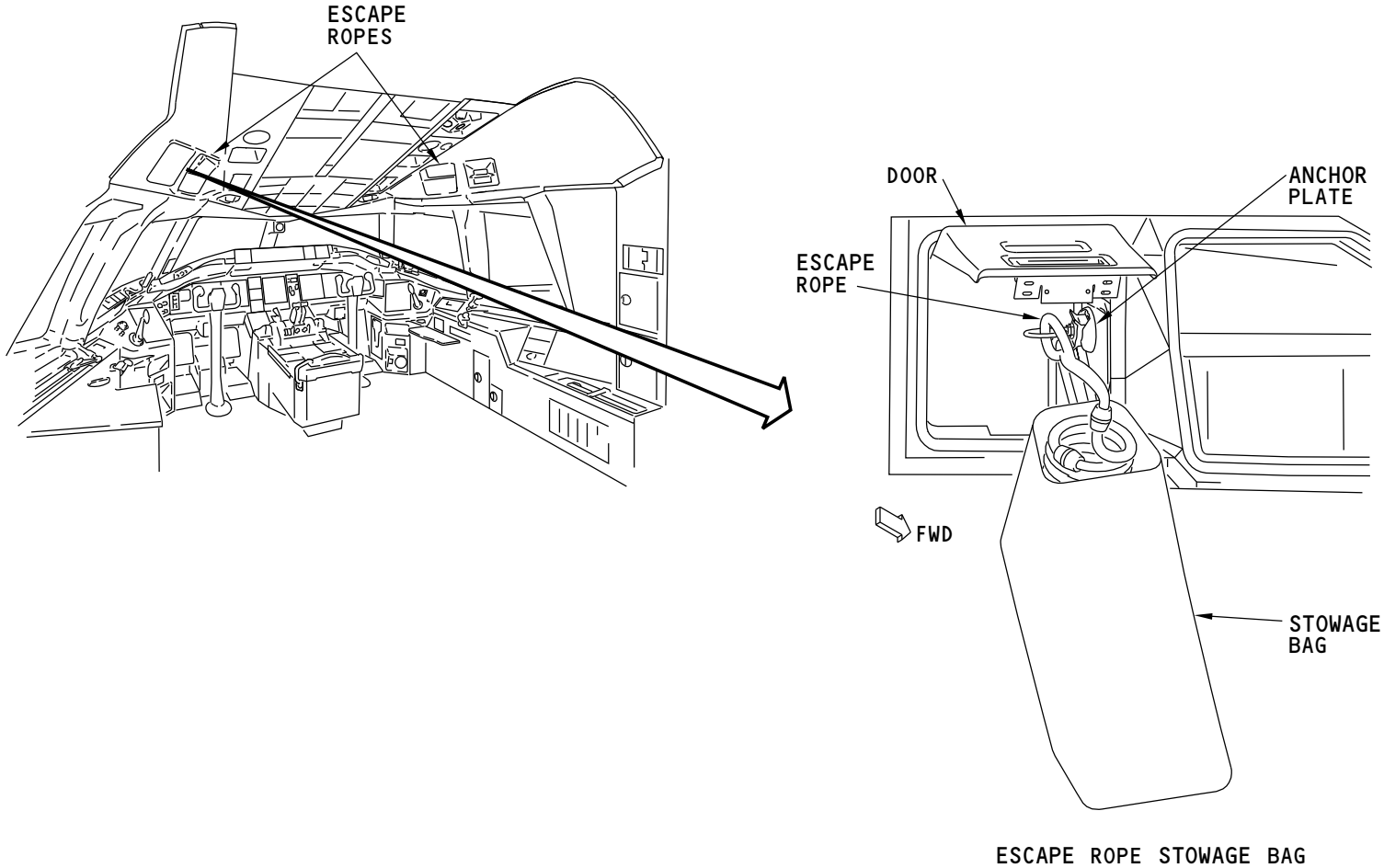
Physical Description

One end of the escape rope attaches to the airplane structure. The other end is coiled and stored in a stowage bag.

Location

The rope and stowage bag are behind doors in the flight deck lining above the number 2 windows.

WARNING DO NOT CLOSE OR ATTACH THE BAG. IF THE BAG IS CLOSED OR ATTACHED, THE BAG AND THE ROPE WILL NOT FALL FROM THE POCKET IN AN EMERGENCY. INJURY TO PERSONS CAN RESULT.



ESCAPE ROPE STOWAGE BAG

M40655 S000617015_V1

EMERGENCY - ESCAPE ROPES

EMERGENCY - OVERWATER SURVIVAL EQUIPMENT - LIFE VESTS

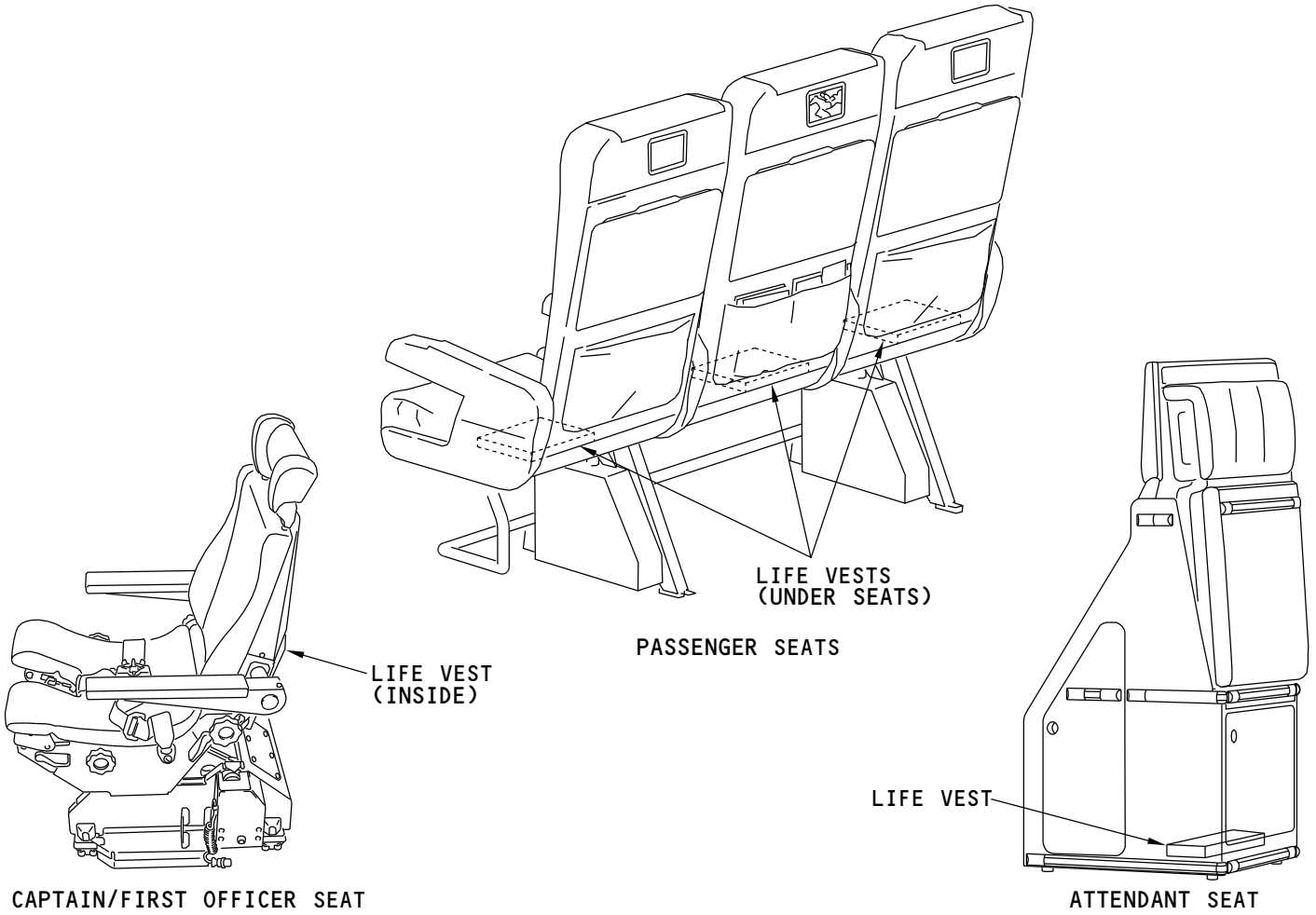
General

The airplane has life vests for each passenger and crewmember. The vests are sealed in protective packages and stored in seat pouches.

Spare life vests can be located in storage units throughout the airplane.

Training Information Point

Make sure there is a life vest at every seat in the airplane. Make sure each vest is in a sealed protective package. If the package is damaged, make sure there is no damage to the life vest.



M40656 S000617016_V1

EMERGENCY - OVERWATER SURVIVAL EQUIPMENT - LIFE VESTS

EMERGENCY - EMERGENCY LOCATOR TRANSMITTER

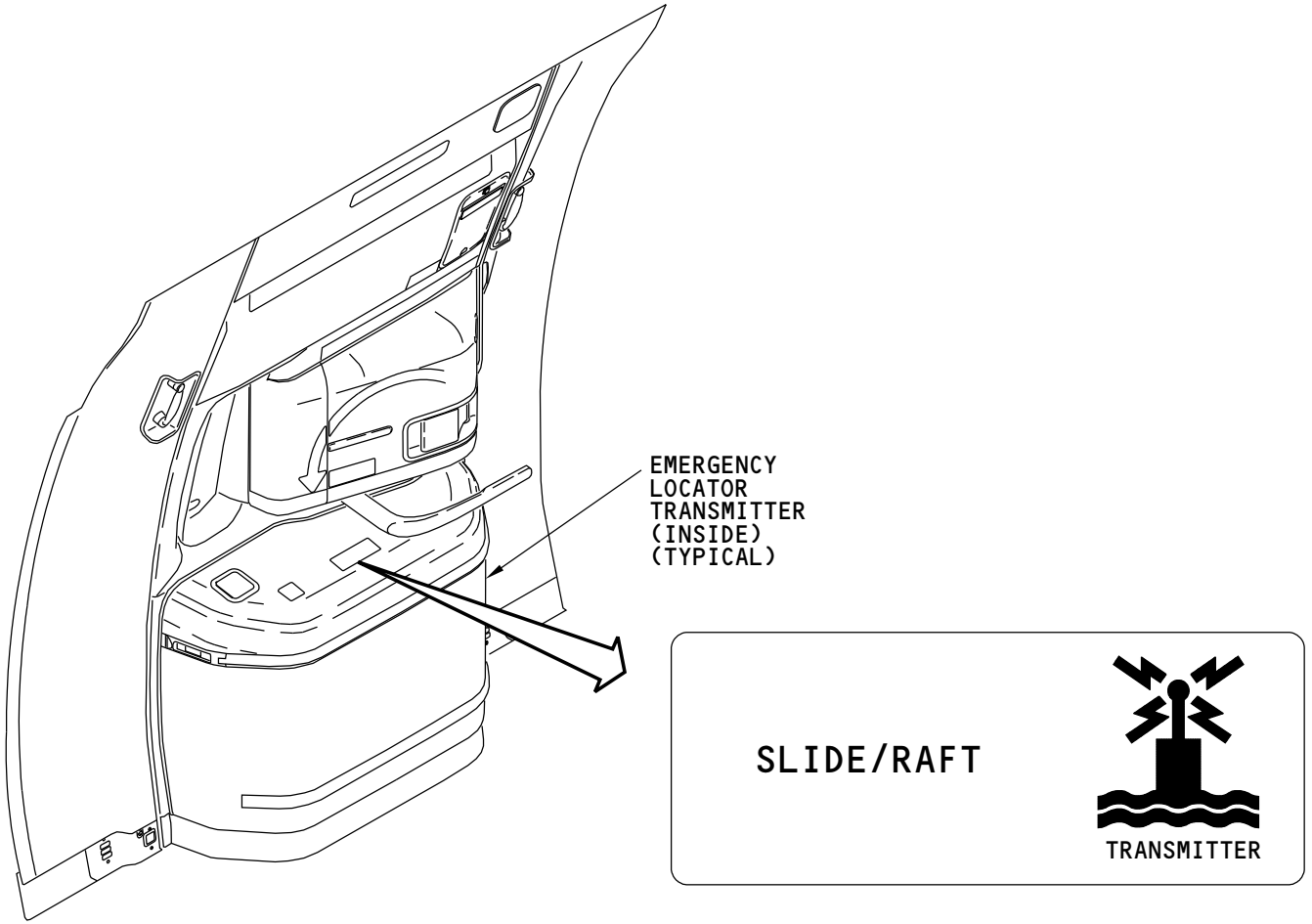
General

Emergency locator transmitters help rescue crews find airplanes which have landed away from an airport. The transmitters send a radio signal to satellites, other airplanes, or air traffic control facilities. Rescue crews use information from these sources to find the airplane.

Location

There are emergency locator transmitters at one or more of the these locations:

- Attendants closet (not shown).
- Emergency storage compartments (not shown)



M40657 S000617018_V1

EMERGENCY - EMERGENCY LOCATOR TRANSMITTER

EMERGENCY - EMERGENCY EVACUATION SIGNAL SYSTEM - GENERAL DESCRIPTION

Purpose

This system lets the flight crew or cabin attendants send a signal to all stations for emergency evacuation.

General Description

The attendant stations and flight deck have these emergency evacuation signal controls and indicators:

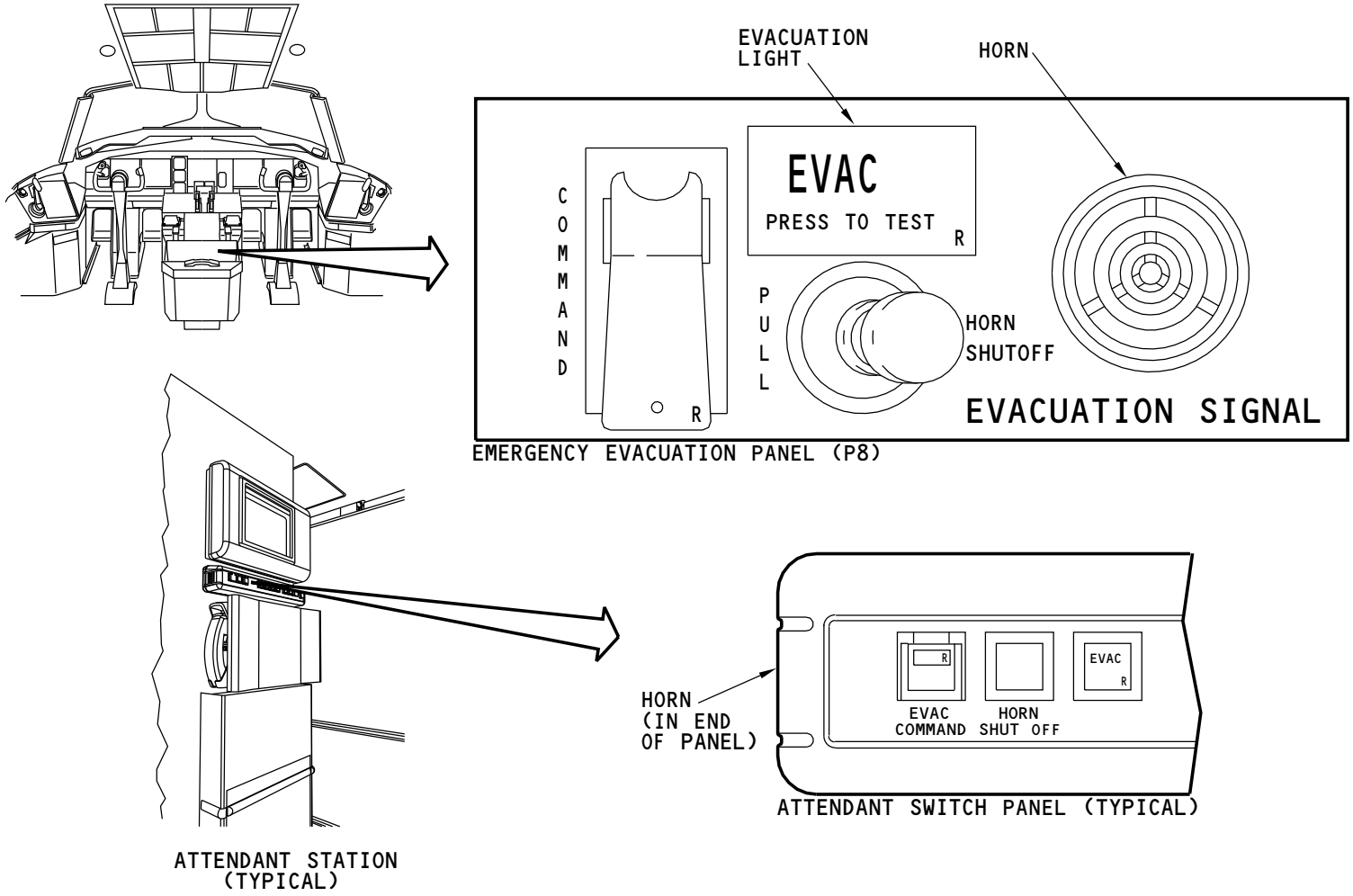
- Evacuation command switch
- Evacuation light
- Evacuation horn shutoff switch
- Evacuation signal horn.

The flight deck command switch has a guard to prevent accidental movement to ON.

To operate the system from the flight deck, lift the guard and put the command switch ON. To operate the system from an attendant panel, push the EVAC COMMAND switch.

When the system operates, the horns operate and the evacuation lights at all panels come on. Use the horn shutoff switch to cancel the horn. The horn stops only at the station where you use the horn shutoff switch.

To make the signal stop, set the applicable command switch that was used to start the signal to OFF.



M40663 S000617025_V1

EMERGENCY - EMERGENCY EVACUATION SIGNAL SYSTEM - GENERAL DESCRIPTION

EMERGENCY - EMERGENCY EVACUATION SIGNAL SYSTEM - FUNCTIONAL DESCRIPTION

General

The 28v dc hot battery bus supplies power to all the emergency evacuation panels. When you put any command switch to the ON position, a command signal (ground) goes to all the emergency evacuation panels. This signal causes the horns and EVAC lights to come on. The signal stops when you put the applicable command switch OFF.

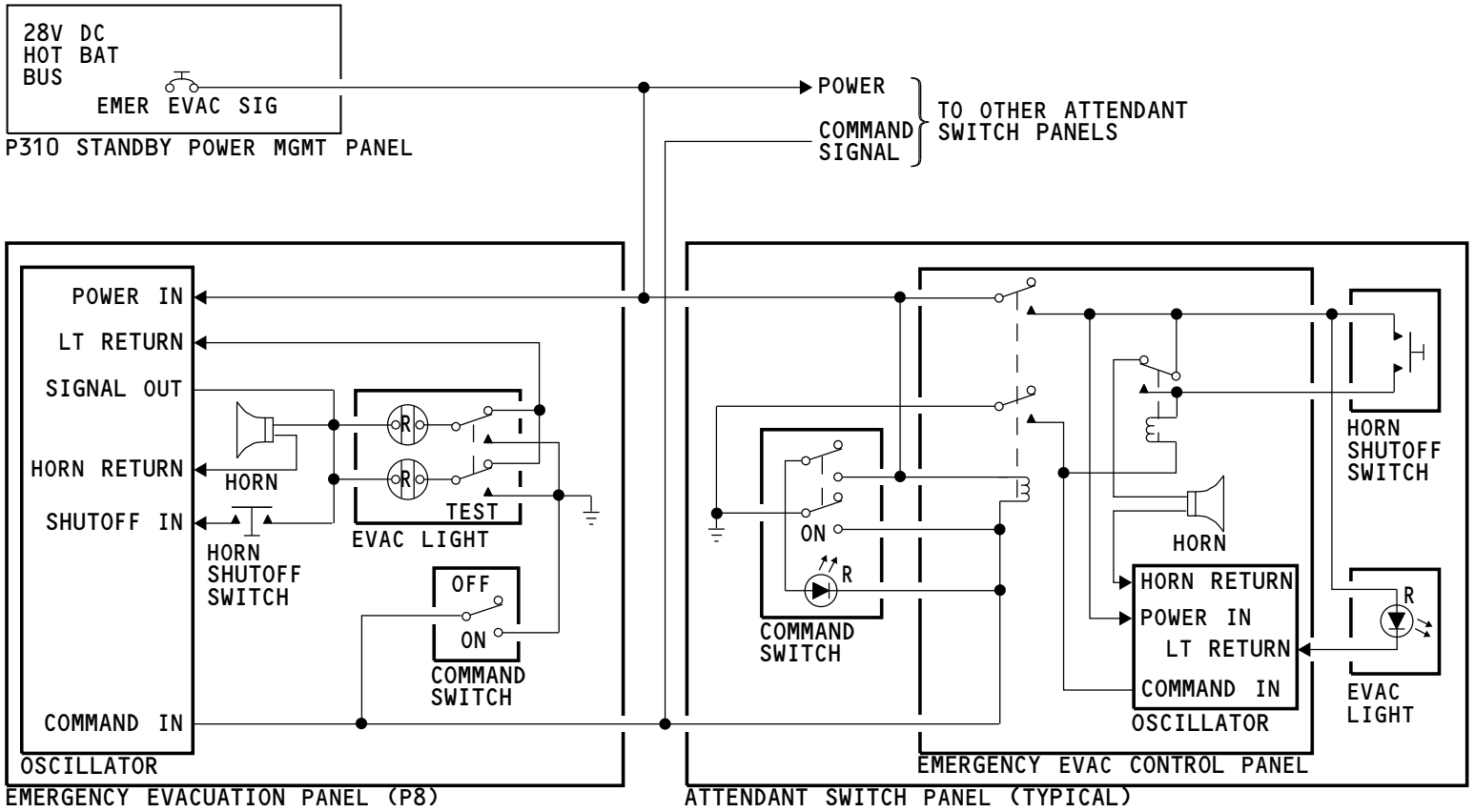
Emergency Evacuation Panel (P8)

A command signal to the oscillator causes the horn and the red EVAC light to come on. Use the horn shutoff switch to stop the horn in the flight deck.

Attendant Switch Panel

A command signal causes the relay to energize. The relay contacts supply power and ground to the oscillator. The oscillator causes the horn and the EVAC light to come on.

Push the horn shutoff switch to silence the horn at the attendant panel. The relay energizes and stays energized through its own contact. The energized relay removes power from the horn.



M40670 S000617032_V1

EMERGENCY - EMERGENCY EVACUATION SIGNAL SYSTEM - FUNCTIONAL DESCRIPTION

EMERGENCY - DETACHABLE EMERGENCY EQUIPMENT

General

Detachable emergency equipment is stowed in the flight and passenger compartments. Placards in the airplane mark the locations of these items.

These items are examples of detachable emergency equipment in the flight compartment:

- Crash axe
- Fire gloves
- Smoke goggles
- Portable fire extinguisher
- Protective breathing equipment
- First aid kit
- Life vests
- Flashlights

These items are examples of detachable emergency equipment in the passenger compartment:

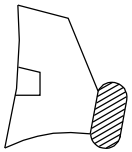
- Megaphones
- Fire gloves
- Life vests
- Flashlights
- Portable oxygen bottles
- Portable fire extinguishers
- Protective breathing equipment
- First aid kits
- Disposable oxygen masks
- Crash axe
- Automated external defibrillator
- Extension seat belts
- Medical kit (provision)

CRASH AXE

FIRE GLOVES

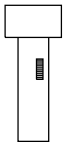
SMOKE GOGGLES

HALON (BCF) EXTINGUISHER



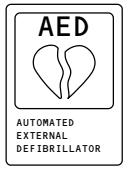
PROTECTIVE BREATHING EQUIPMENT

FIRST AID KIT



FLASHLIGHT

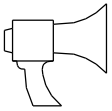
FLIGHT DECK DETACHABLE EMERGENCY EQUIPMENT



AUTOMATED EXTERNAL DEFIBRILLATOR

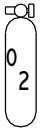
FIRE GLOVES

DISPOSABLE OXYGEN MASK

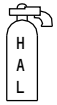


MEGAPHONE

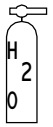
FLASHLIGHT



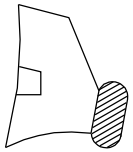
PORTABLE OXYGEN BOTTLE



HALON (BCF) EXTINGUISHER



WATER EXTINGUISHER



PROTECTIVE BREATHING EQUIPMENT

FIRST AID KIT

PASSENGER COMPARTMENT DETACHABLE EMERGENCY EQUIPMENT

M40676 S000617038_V4

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OFF-WING ESCAPE SYSTEM - GENERAL DESCRIPTION

Purpose

The off-wing escape system lets passengers and crew get off the wing after they go out of the airplane through the number three passenger entry (over-wing) door.

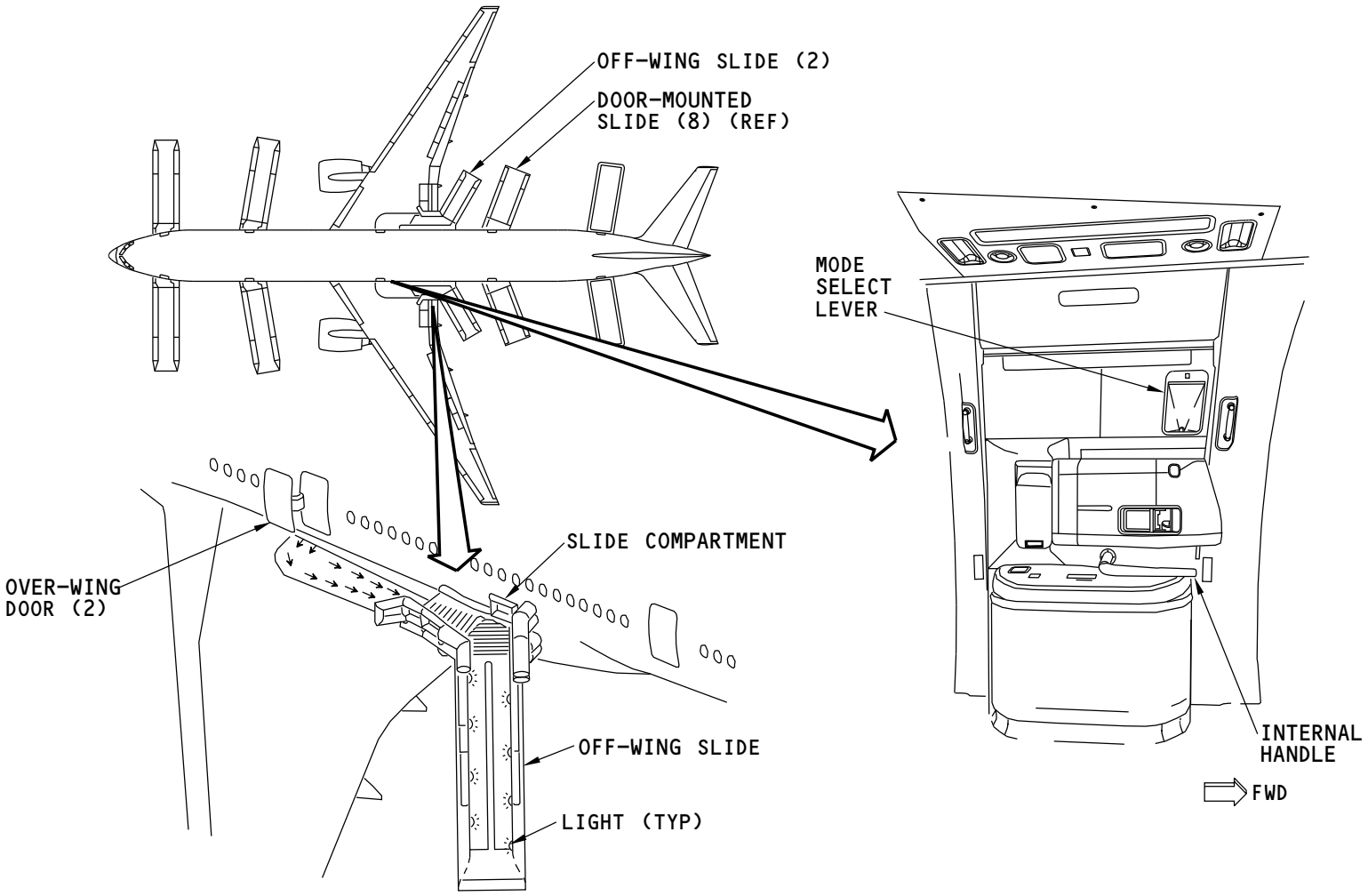
General Description

There is an off-wing slide for each wing. The slide is stowed in a compartment aft of the wing, in the wing-to-body fairing. You use the mode select lever on the over-wing door to arm the emergency power assist system (EPAS) and the slide. See the passenger entry door system section for more information about the EPAS (SECTION 52-11).

The slide deploys when these conditions exist:

- The EPAS is armed
- The over-wing door is opened with the internal handle.

Lights on the slide let the passengers and crew see the slide.



M40677 S000617044_V1

OFF-WING ESCAPE SYSTEM - GENERAL DESCRIPTION

OFF-WING ESCAPE SYSTEM - COMPONENT LOCATION

Components Above the Over-wing Door

The backup battery is on the overdoor panel above the over-wing door.

The backup switch is outboard of the panel above the over-wing door. A cable that goes through the door cutout connects the switch to the handle (not shown).

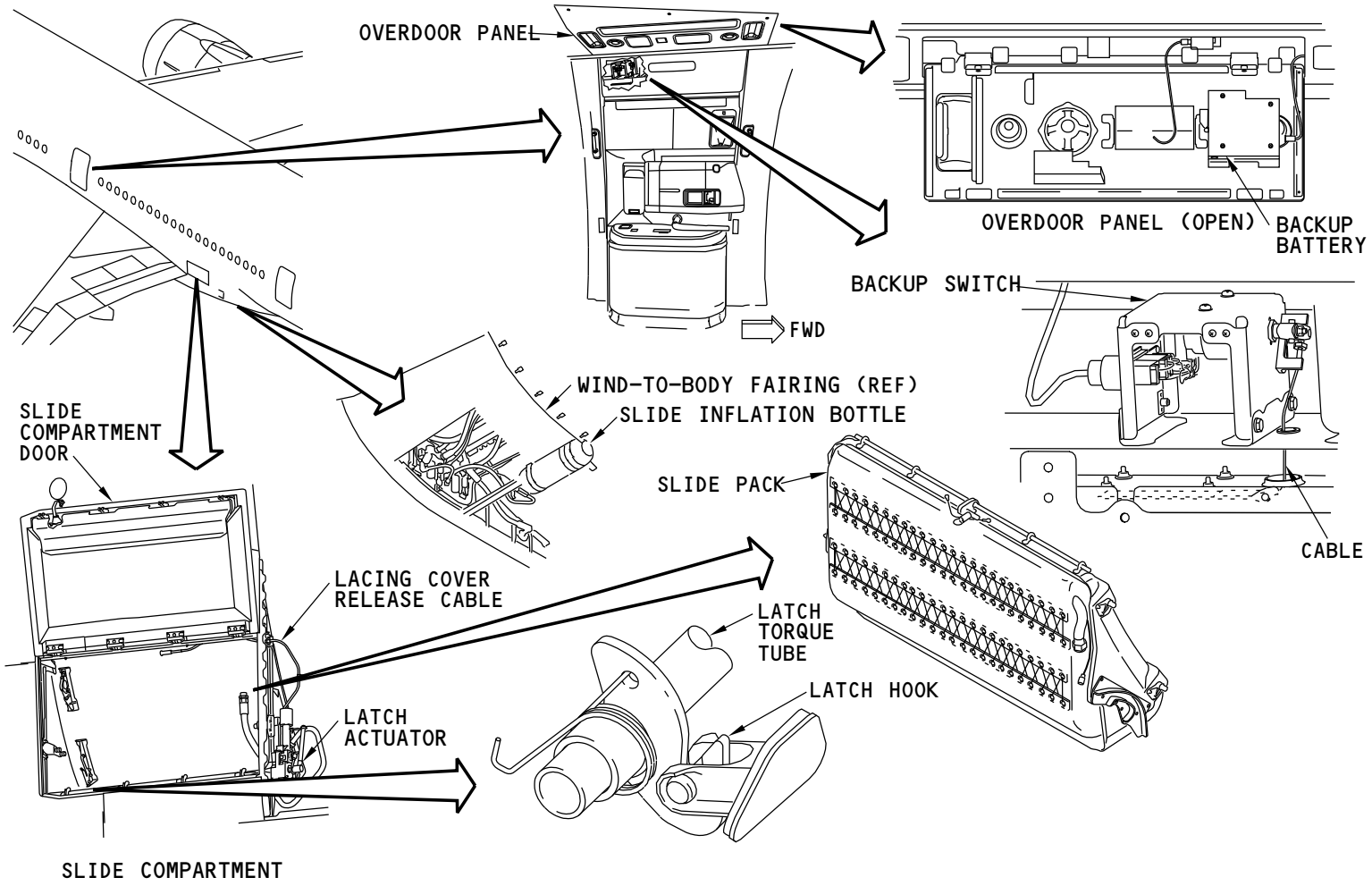
Components at the Off-wing Slide Compartment

These components are at the off-wing slide compartment:

- Slide pack
- Latch torque tube
- Latch actuator
- Lacing cover release cable
- Slide compartment door.

Components in the Wing-to-body Fairing

There is a slide inflation bottle for each slide in the wing-to-body fairing.



M40678 S000617045_V1

OFF-WING ESCAPE SYSTEM - COMPONENT LOCATION

OFF-WING ESCAPE SYSTEM - BACKUP SWITCH AND BATTERY

Purpose

The backup switch and backup battery give a secondary procedure to operate the off-wing slide.

Location

The backup battery is on the overdoor panel.

The backup switch is outboard of the panel above the door. The switch handle is in the upper, aft corner of the over-wing door cutout.

General Description

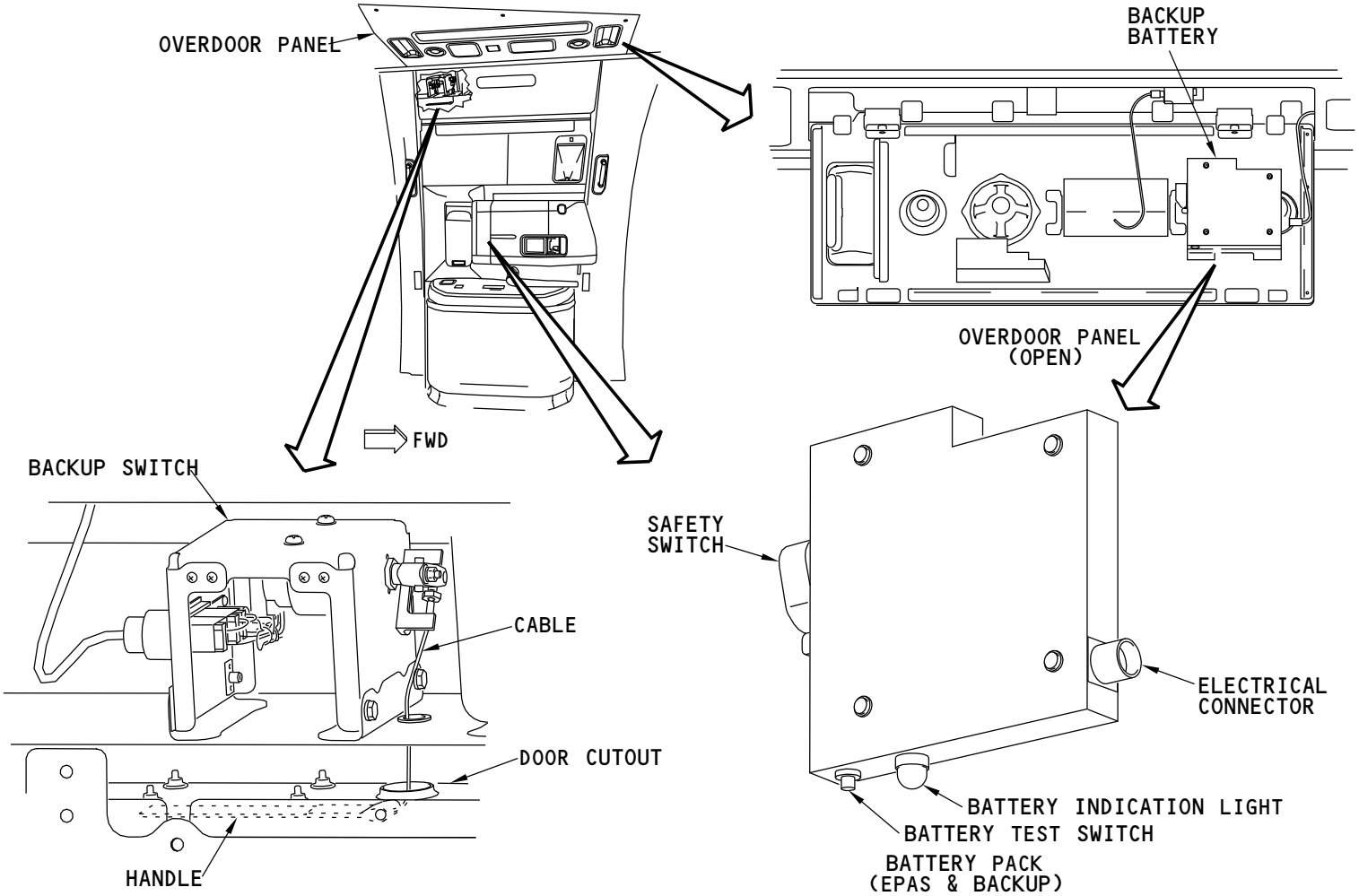
The backup battery and over-wing door EPAS battery are the same. They are not the same as the EPAS batterys on doors 1, 2, 4, and 5. All of the batteries have a test switch and battery indicator light. The test switch and indicator light on the over-wing door EPAS battery and backup battery do not function.

See the passenger entry door system section for more information about the EPAS battery and reservoir (SECTION 52-11).

See the spoiler and speedbrake control section for more information about the spoiler auxiliary retract device (SARD) (SECTION 27-61).

A cable connects the backup switch handle to the backup switch. The backup switch connects the backup battery to these squib circuits:

- Inflation bottle squib
- Spoiler auxiliary retract device (SARD) squib.



M40679 S000617046_V1

OFF-WING ESCAPE SYSTEM - BACKUP SWITCH AND BATTERY

OFF-WING ESCAPE SYSTEM - INFLATION BOTTLE

Purpose

The inflation bottle contains the nitrogen gas that the aspirators (not shown) use to inflate the off-wing slide.

Location

There is an inflation bottle in the wing-to-body fairing for each off-wing slide.

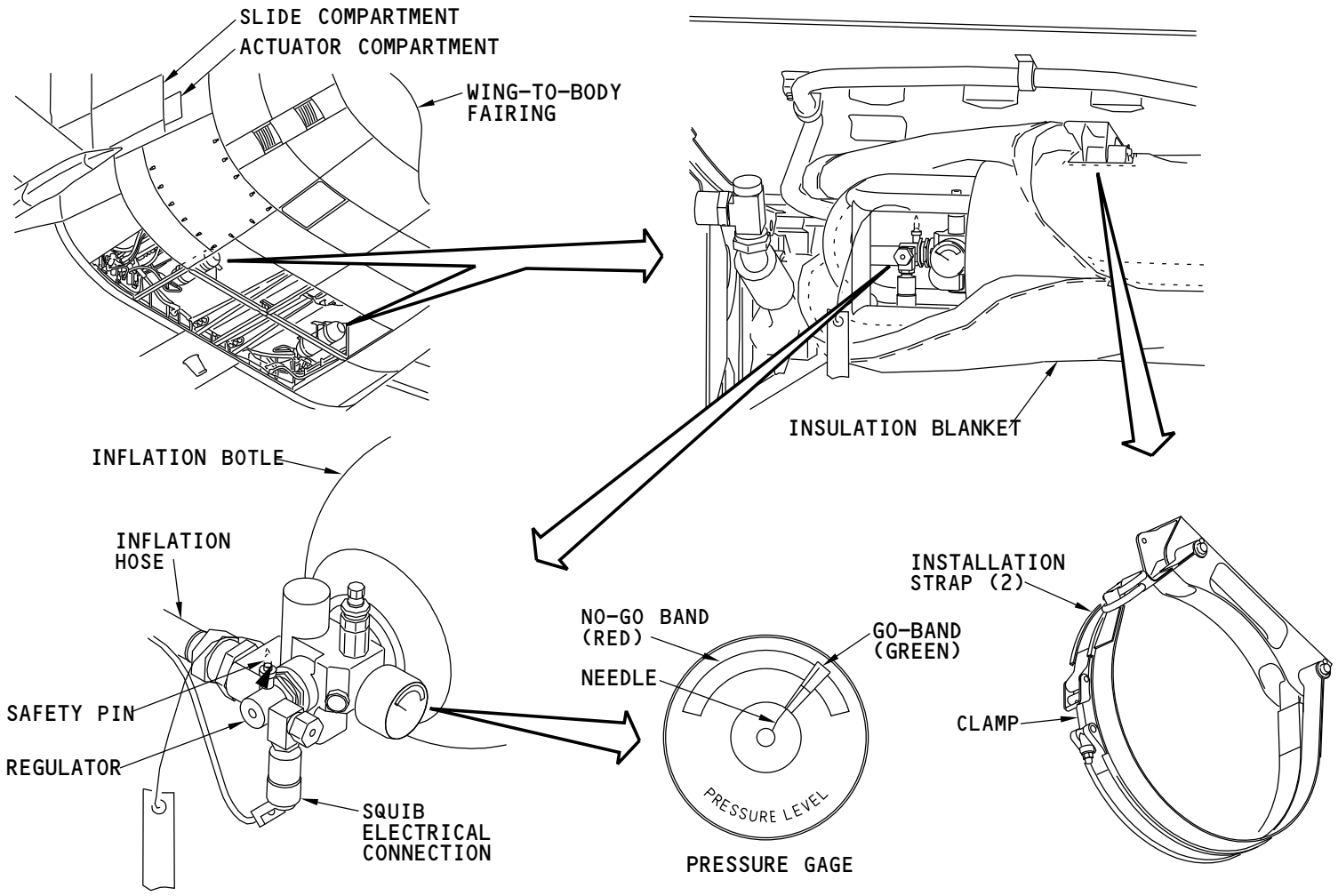
General Description

Each bottle has two installation straps. Each bottle has an insulation blanket. The regulator on each bottle has these components:

- Inflation hose connection
- Squib connection
- Installation point for a safety pin
- Pressure gage.

A green go-band shows that the bottle has sufficient pressure to inflate the slide.

A 16 foot (4.88 meters) inflation hose connects the bottle to the latch actuator.



M40680 S000617047_V1

OFF-WING ESCAPE SYSTEM - INFLATION BOTTLE

OFF-WING ESCAPE SYSTEM - LATCH ACTUATOR

Purpose

The latch actuator uses gas pressure from the inflation bottle to unlatch the slide compartment door and release the slide lacing cover.

Location

The latch actuator is inboard of an access panel, aft of the off-wing slide compartment.

General Description

Gas from the inflation bottle goes to the latch actuator. The latch actuator does these functions:

- Turns the latch torque tube to release the slide compartment door
- Pulls on the lacing cover release cable to release the slide lacing cover
- Sends the gas through the inflation hose to operate the aspirators (not shown) that inflate the slide.

The actuator mode select lever lets you block the flow of gas from the inflation bottle to the slide.

The actuator handle lets you open the slide compartment door.

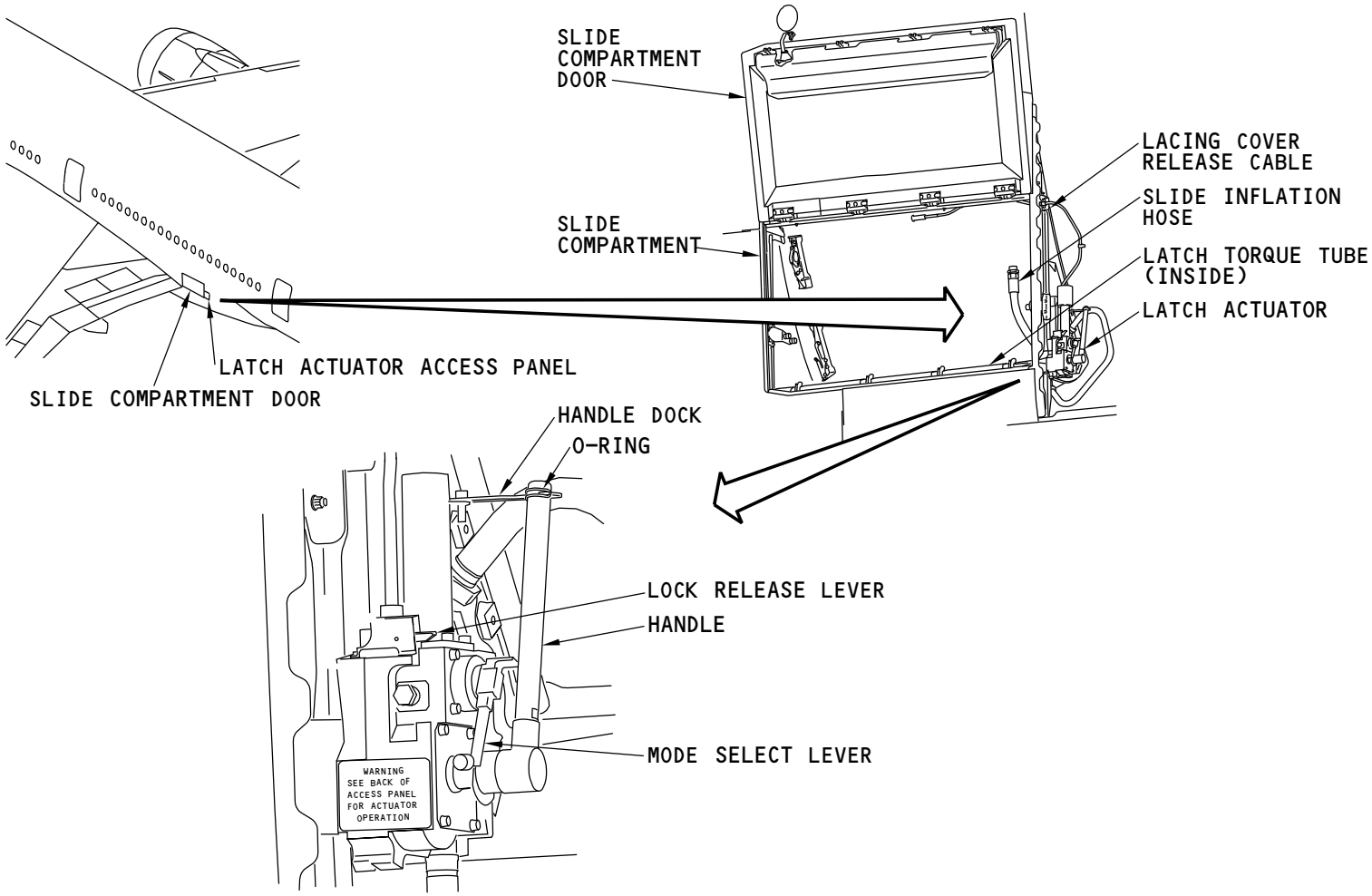
Training Information Point

You can use the latch actuator to do a manual operation of the slide compartment door. There are instructions on the latch actuator access door.

These actuator components let you do the operation:

- You use the O-ring of the handle dock to release the actuator handle
- The mode select lever in the up position will not let inflation gas get to the slide
- The actuator handle in the outboard position releases the slide compartment door.

You cannot close the access panel with the mode select lever up or the actuator handle outboard.



M40681 S000617048_V1

OFF-WING ESCAPE SYSTEM - LATCH ACTUATOR

OFF-WING ESCAPE SYSTEM - SLIDE COMPARTMENT DOOR, LATCH TORQUE TUBE, LACING COVER RELEASE CABLE

Purpose

The slide compartment door closes the slide compartment.

The latch torque tube has latch hooks that hold the slide compartment door closed.

The lacing cover release cable connects the latch actuator to the lacing cover release mechanism.

Location

These components are in the wing-to-body fairing, aft and above the wing trailing edge.

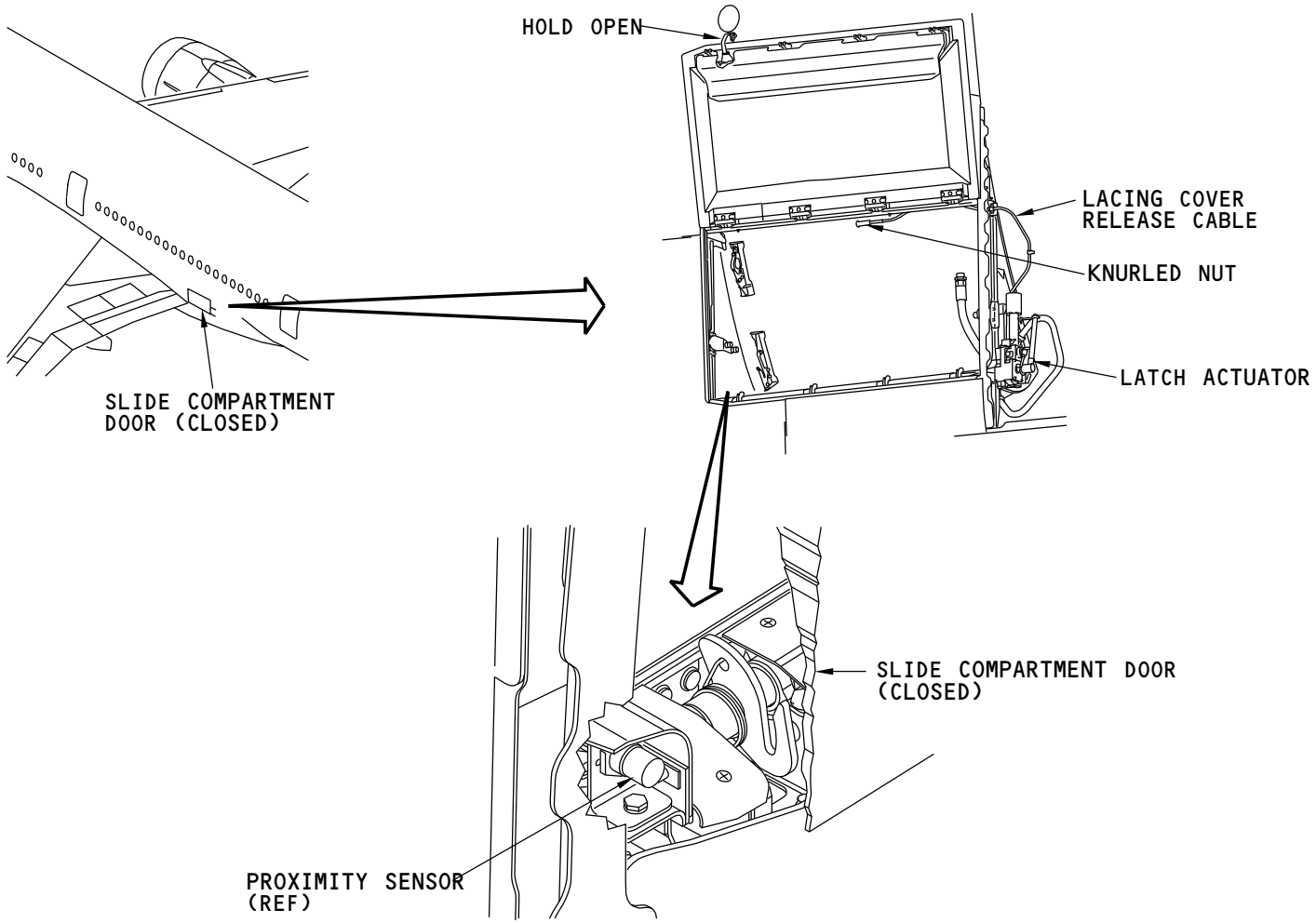
General Description

The slide compartment door has hinges at the top. The latch torque tube has hooks. The hooks hold the door closed. A spring holds the latch torque tube in the door closed position.

The latch actuator turns the latch torque tube against the spring force to unlatch the door.

A proximity sensor in the forward lower corner of the slide compartment is part of the door warning system. See the door warning system section for more information about the off-wing slide compartment door proximity sensor (SECTION 52-71).

The lacing cover release cable goes from the latch actuator to the top of the slide compartment. Internal threads on the knurled nut at the end of the cable connects to a release mechanism on the slide pack (not shown).



M40682 S000617049_V1

OFF-WING ESCAPE SYSTEM - SLIDE COMPARTMENT DOOR, LATCH TORQUE TUBE, LACING COVER RELEASE CABLE

OFF-WING ESCAPE SYSTEM - SLIDE PACK

Purpose

The slide pack contains the escape slide. The slide pack attaches the slide to the airplane.

Location

The slide pack is in a compartment, aft and above the wing trailing edge.

General Description

There are three fittings on each end of the slide pack that work with fittings in the slide compartment, as follows:

- The outboard compartment fitting has a channel that guide the rollers on the pack fitting as the pack moves into the compartment
- The lower compartment fitting holds the lower pack fitting
- The upper compartment fitting has a hinge with a captive bolt that holds the upper pack fitting after you turn the pack up to its normal position.

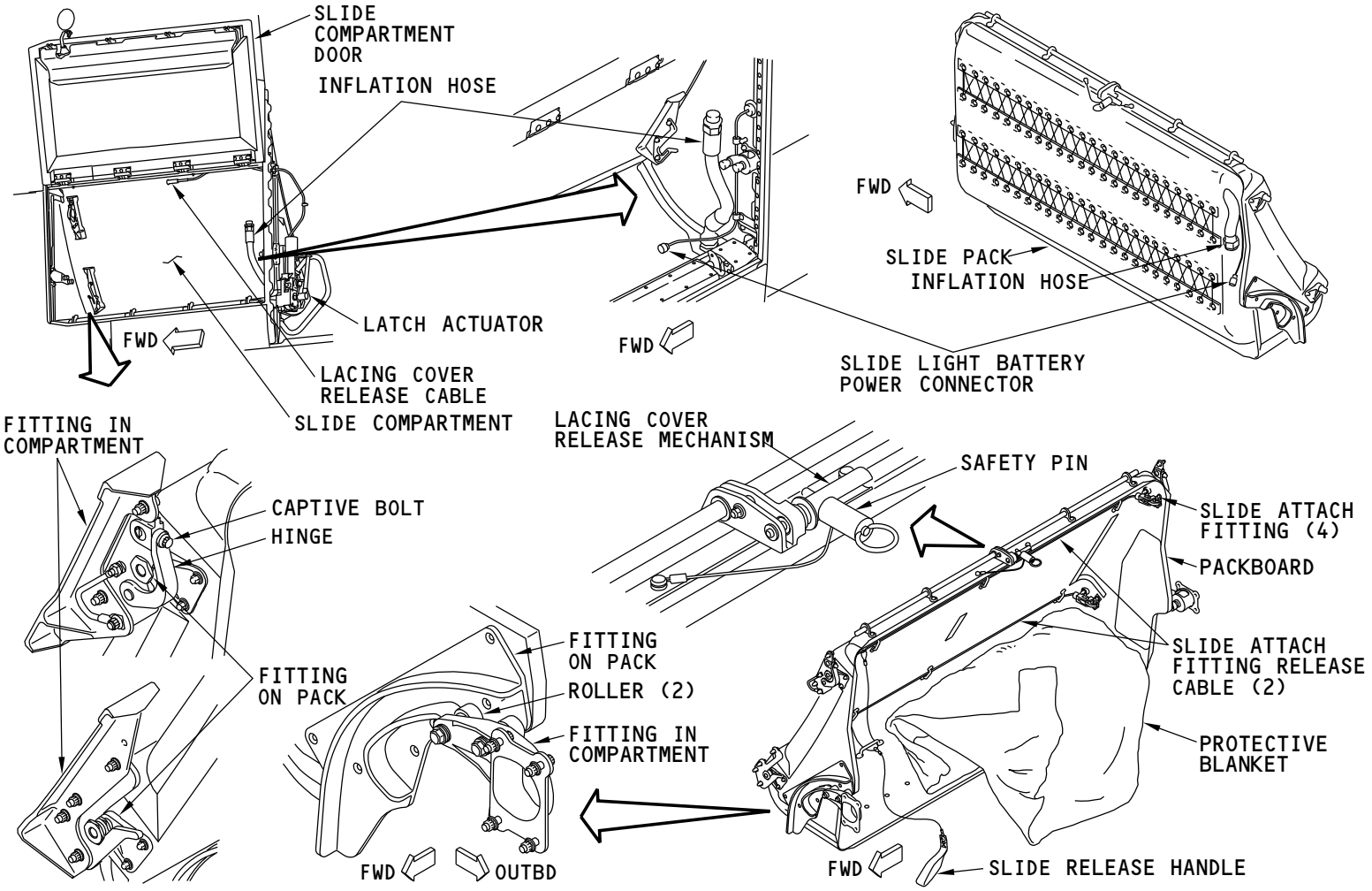
These connections for the slide are in the slide compartment:

- Inflation hose from the latch actuator
- Electrical connector for airplane power to the slide light battery
- Lacing cover release cable.

The lacing cover release cable connects to the lacing cover release mechanism. A safety pin holds the release mechanism when you move the pack in and out of the airplane.

A slide attach fitting in each corner of the slide packboard works with a ring (not shown) on each corner of the slide. The attach fittings open to release the slide from the packboard when you pull the slide release handle.

A protective blanket goes between the slide and the packboard to protect the slide from the release cables.



M40683 S000617050_V1

OFF-WING ESCAPE SYSTEM - SLIDE PACK

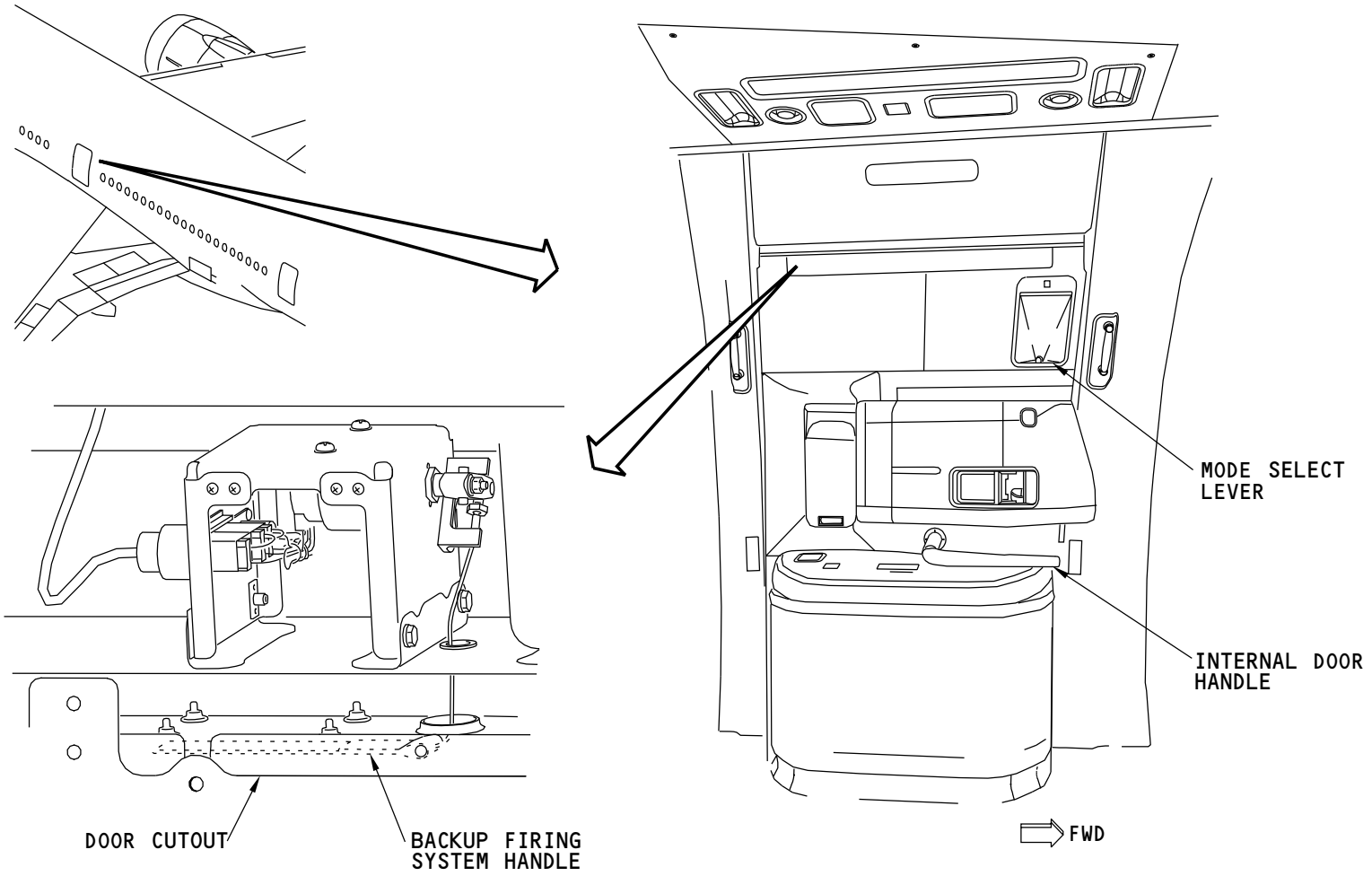
OFF-WING ESCAPE SYSTEM - OPERATION

Normal Operation

Move the over-wing door mode select lever to auto. Open the door with the internal handle.

Backup Operation

Open the over-wing door. Pull the backup firing system handle.



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OFF-WING ESCAPE SYSTEM - OPERATION

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OFF-WING ESCAPE SYSTEM - ELECTRICAL FUNCTIONAL DESCRIPTION

General

This information is about the electrical circuit for the off-wing escape system at door three left. The circuit for door three right (not shown) is similar.

The circuit has these sources of power

- Left main bus
- EPAS battery pack
- Over-wing door backup battery.

The Left main bus supplies power for usual operation and trickle charge of the battery packs. Trickle charge maintains the battery packs at full charge. Trickle charge will require a long time to charge a low battery.

The EPAS battery pack supplies electrical power for the off-wing slide usual operation. The battery gets power from the same source as the emergency lights power supplies. See the emergency lighting power functional description for more information about the power source (SECTION 33-50).

The over-wing passenger door backup battery pack supplies backup power. It has a dedicated power source.

Functional Description - Normal

The mode select switch on the mode select handle and the door open switch on the door handle mechanism control the operation of the off-wing slide. The mode select handle in the auto position sets the mode select switch to auto. This arms the system.

When you move the internal handle of the over-wing door to the open position, the door open switch goes to the door open position. This grounds the isolation relay causing these squibs to fire:

- The EPAS squib
- The spoiler auxiliary retract device (SARD) squib
- The slide deploy squib.

See the passenger entry door system section for more information about the EPAS battery and reservoir (SECTION 52-11).

See the spoiler and speedbrake control section for more information about the spoiler auxiliary retract device (SARD) (SECTION 27-61).

Functional Description - Backup

Any of these conditions will make it necessary to use the backup system:

- Mode select switch not armed
- Door open switch not in the open position
- EPAS battery pack failure.

Do these steps to use the backup system:

- Move the over-wing door open to give access to the backup battery power switch handle
- Pull the handle to close the contacts in the switch.

The backup battery power switch fires these squibs:

- The spoiler auxiliary retract device (SARD) squib
- The slide deploy squib.

Use of the backup system does not cause the EPAS squib to fire.

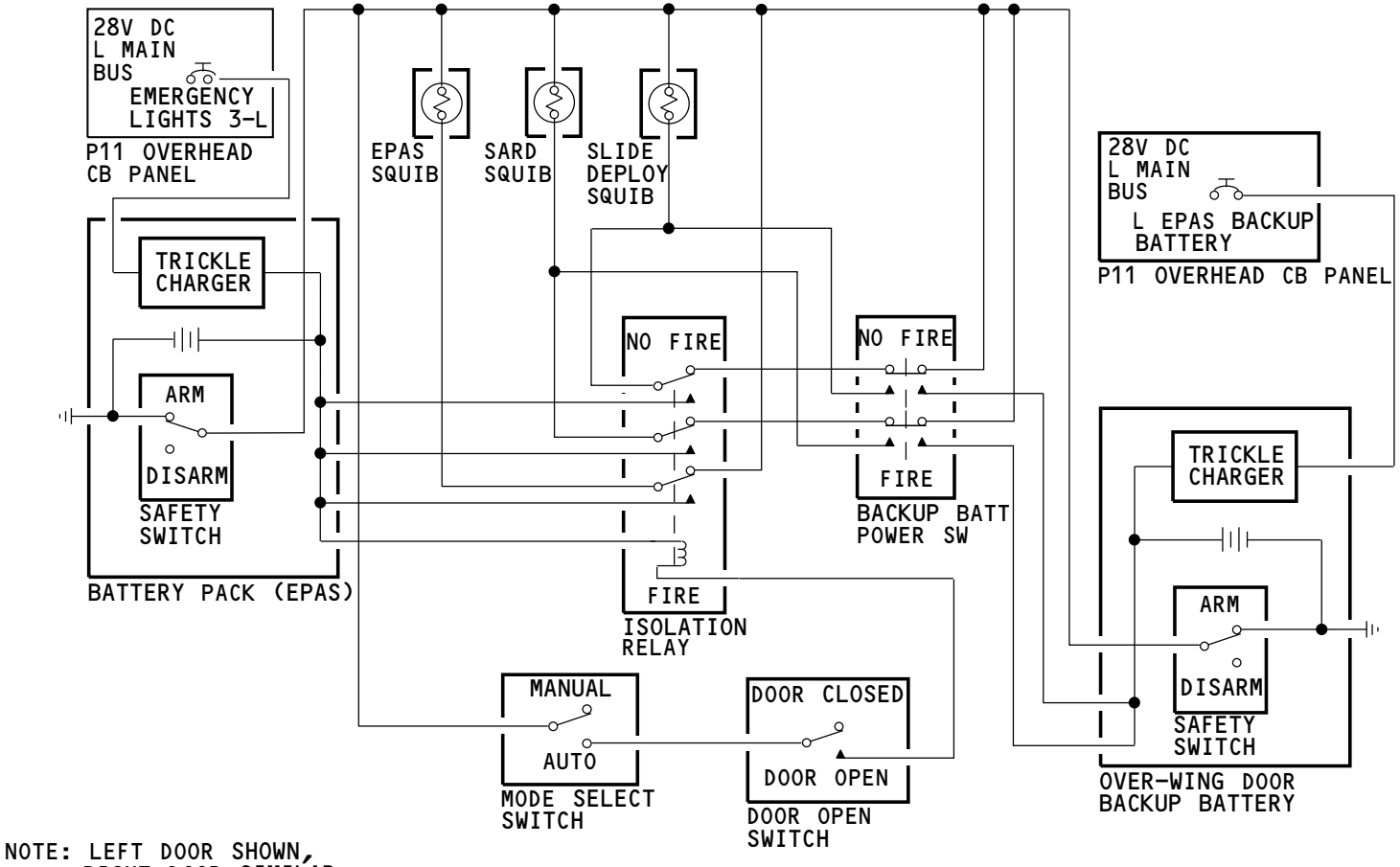
Training Information Point

The safety switches on the EPAS and backup batteries are for maintenance. They disconnect the batteries from the squib circuits.

You must be careful when you do emergency lights tests. In this test, you begin to open the door with the mode select switch in the armed position. For doors 1, 2, 4, and 5, it is necessary to disarm only the EPAS battery. For door 3, you must disarm the EPAS battery and the backup battery.

OFF-WING ESCAPE SYSTEM - ELECTRICAL FUNCTIONAL DESCRIPTION

WARNING YOU MUST DISARM THE BACKUP BATTERY AND THE EPAS BATTERY. IF YOU DO NOT OBEY THIS INSTRUCTION, THE ESCAPE SLIDE WILL DEPLOY WHEN YOU TURN THE INTERIOR HANDLE TO THE OPEN POSITION, AND DAMAGE TO EQUIPMENT OR INJURY TO PERSONS CAN OCCUR.



NOTE: LEFT DOOR SHOWN,
RIGHT DOOR SIMILAR.

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OFF-WING ESCAPE SYSTEM - ELECTRICAL FUNCTIONAL DESCRIPTION

Normal Squib Function

For normal operation, all squibs fire. This causes these actions:

- The EPAS pushes the over-wing door to the full open position
- The spoiler auxiliary retract device (SARD) makes sure that the inboard spoiler is down
- The slide inflation bottle inflates the off-wing slide.

See the passenger entry door system section for more information about the EPAS (SECTION 52-11).

See the spoiler and speedbrake control section for more information about the spoiler auxiliary retract device (SARD) (SECTION 27-61).

Backup Squib Function

For the backup operation, only the SARD and inflation bottle squibs fire. This causes these actions:

- The spoiler auxiliary retract device (SARD) makes sure that the inboard spoiler is down
- The slide inflation bottle inflates the off-wing slide.

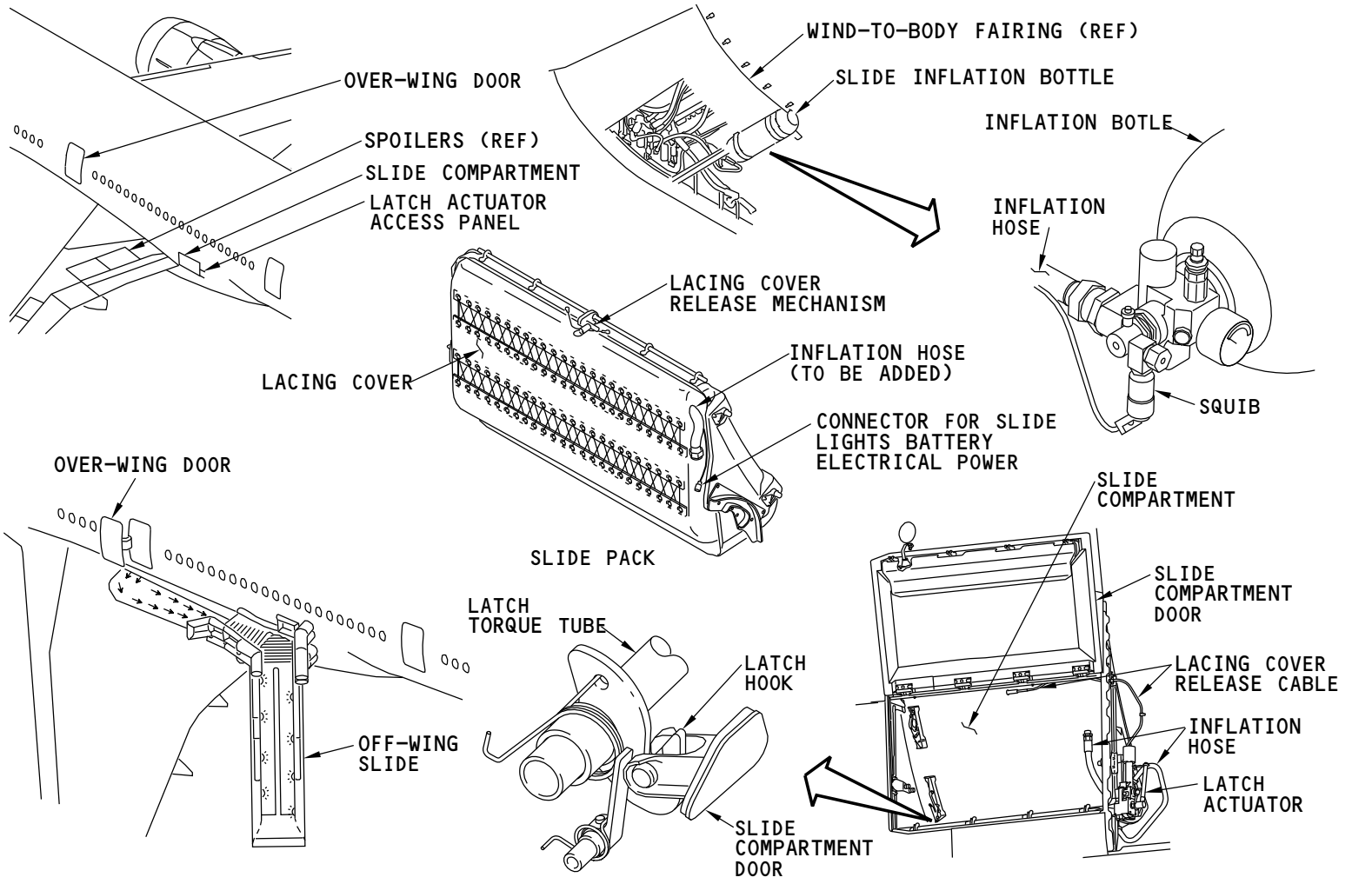
The EPAS squib does not fire.

Slide Deployment

Gas from the slide inflation bottle goes through the inflation hose to the latch actuator. The latch actuator does these functions:

- Turns the latch torque tube to release the slide compartment door
- Pulls the lacing cover release cable to release the slide pack cover
- Lets the gas go through a hose to the slide aspirators to inflate the slide.

The aspirators use the gas flow from the inflation bottle to cause ambient air flow into the slide. The inflation bottle gas also goes into the slide.



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OFF-WING ESCAPE SYSTEM - MECHANICAL FUNCTIONAL DESCRIPTION

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DOOR-MOUNTED ESCAPE SYSTEM - GENERAL DESCRIPTION

Purpose

The door-mounted escape system helps passengers and crew get out of the airplane in an emergency. If the airplane lands in water, the slide/rafts disconnect from the airplane and used as life rafts.

General Description

Passenger entry doors one, two, four, and five each have an escape slide pack. The escape slide pack attaches to the inside of the door and contains the folded slide/raft. A bustle (door lower liner) attaches to the door and is a cover for the slide pack.

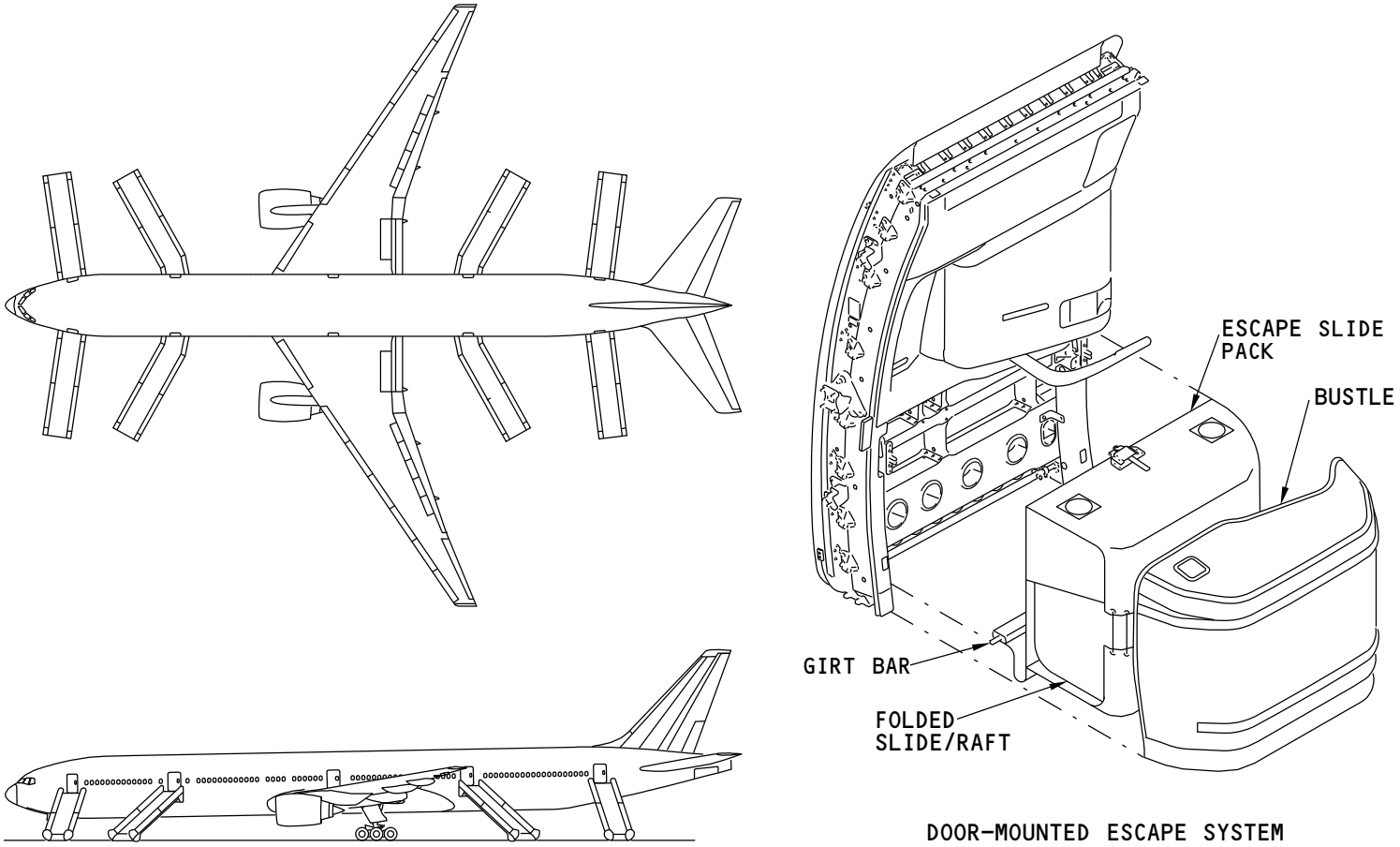
When you arm a door, the girt bar latches in the floor fittings (not shown). The girt bar and floor fittings attach one end of the slide/raft to the airplane floor. When you open the door, the bottom of the escape slide pack opens. The folded slide/raft falls through the door opening. The slide/raft unfolds and inflates automatically. The average time for door opening and slide/raft inflation is seven seconds.

The slide/rafts operate correctly in wind as much as 25 knots. The slide/rafts are safe to use with different door heights caused by the failure of one or more landing gear. The slide/raft has two lanes. Two people can use the slide at the same time.

The capacity of the life rafts is sufficient to hold all the passengers and crew, even if one raft is lost.

This equipment (not shown) can be included with each raft:

- Sea anchor
- Mooring line
- Hook knife
- Lighting systems
- Manual inflation pump
- Heaving ring and line
- Survival kit
- Raft canopy
- Emergency locator transmitter (if installed).



DOOR-MOUNTED ESCAPE SYSTEM

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DOOR-MOUNTED ESCAPE SYSTEM - GENERAL DESCRIPTION

DOOR-MOUNTED ESCAPE SYSTEM - ESCAPE SLIDE PACK - INTRODUCTION

General

The escape slide pack has two primary parts: the packboard and the slide/raft.

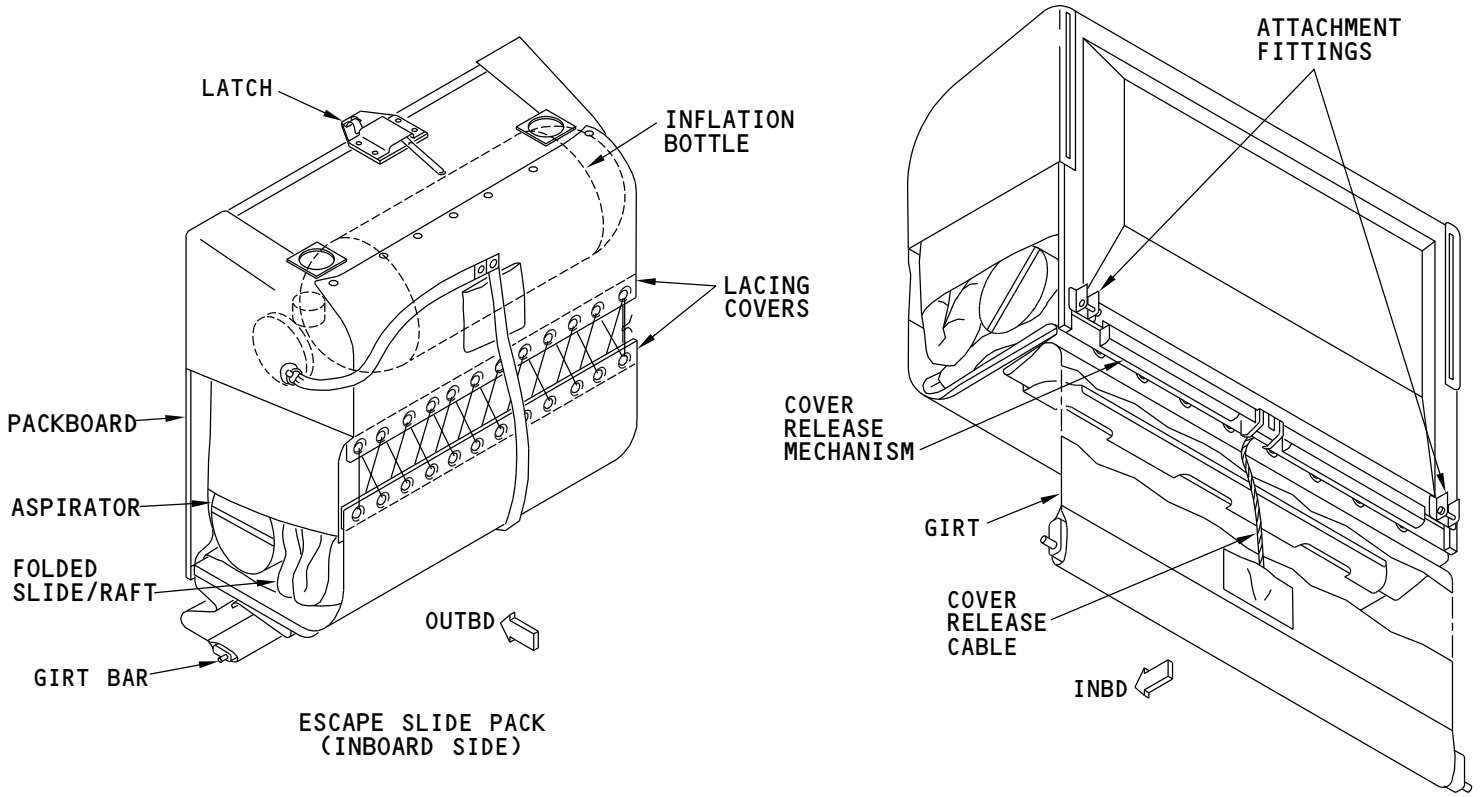
Packboard

The packboard is a composite tray (Kevlar honeycomb) which attaches to the door with two fittings and a latch. Fabric lacing covers hold the folded slide/raft in the packboard until released by the cover release mechanism. When the release mechanism opens, the folded slide/raft falls out of the packboard.

Slide/Raft

The slide/raft is an inflatable structure made of coated Nylon fabric. Upper and lower air chambers support the slide/raft floor. An inflation cylinder and two aspirators inflate the air chambers. A manual handle (not shown) operates the inflation mechanism if the slide/raft fails to inflate automatically. Relief valves (not shown) keep internal pressure to a limit.

The girt and girt bar attach the slide/raft to the airplane doorway. The girt is part of the escape slide. Speed-lacing attaches the girt to the girt bar. After ditching, remove the speed-lacing to release the inflated slide/raft from the airplane.



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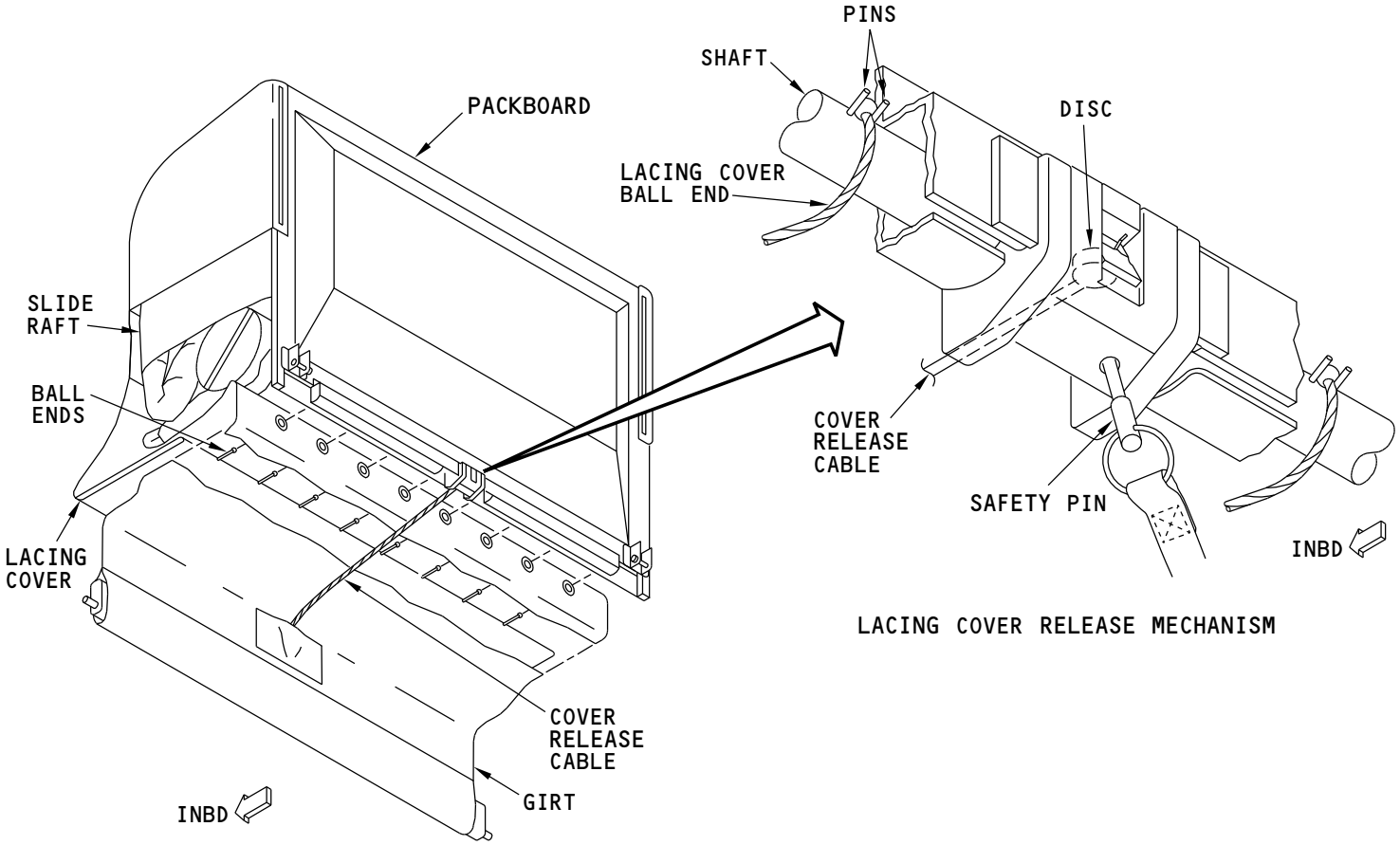
DOOR-MOUNTED ESCAPE SYSTEM - ESCAPE SLIDE PACK - INTRODUCTION

Cover Release

Tension on the girt pulls on the cover release cable. The cable disengages the disc from the release mechanism. The shaft rotates and causes the pins to release the lacing cover ball ends. With the bottom of the lacing cover released from the packboard, the folded slide/raft falls away from the packboard.

Training Information Point

A lanyard attaches a safety pin to the lacing cover. Install the pin to lock the release mechanism during removal or installation of the escape slide pack. When you return the airplane to its usual condition, be sure to remove the pin from the release mechanism. The inboard side of the lacing cover has a stowage pouch for the pin.



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DOOR-MOUNTED ESCAPE SYSTEM - ESCAPE SLIDE PACK - PACKBOARD FUNCTIONAL DESCRIPTION

Slide/Raft Inflation

The inflation cylinder holds a mixture of carbon dioxide and nitrogen at 3000 psig. A gage shows how much pressure is in the cylinder. A pressure relief valve protects the cylinder from excessive pressure. The relief valve opens at 4500 psig. A fusible plug protects the inflation cylinder from high temperatures. The plug opens at 174F (79C).

Tension on the inflation cable rotates the inflation valve to the open position. The pressure regulator (internal) reduces the pressure to 550 psig. Gas flows through the hoses, check valves, aspirator nozzles, then into the slide raft air chambers.

The gas flow through the aspirator nozzle creates a venturi effect in the aspirator. The flapper valve opens and ambient air flows through the aspirator to help inflate the slide/raft.

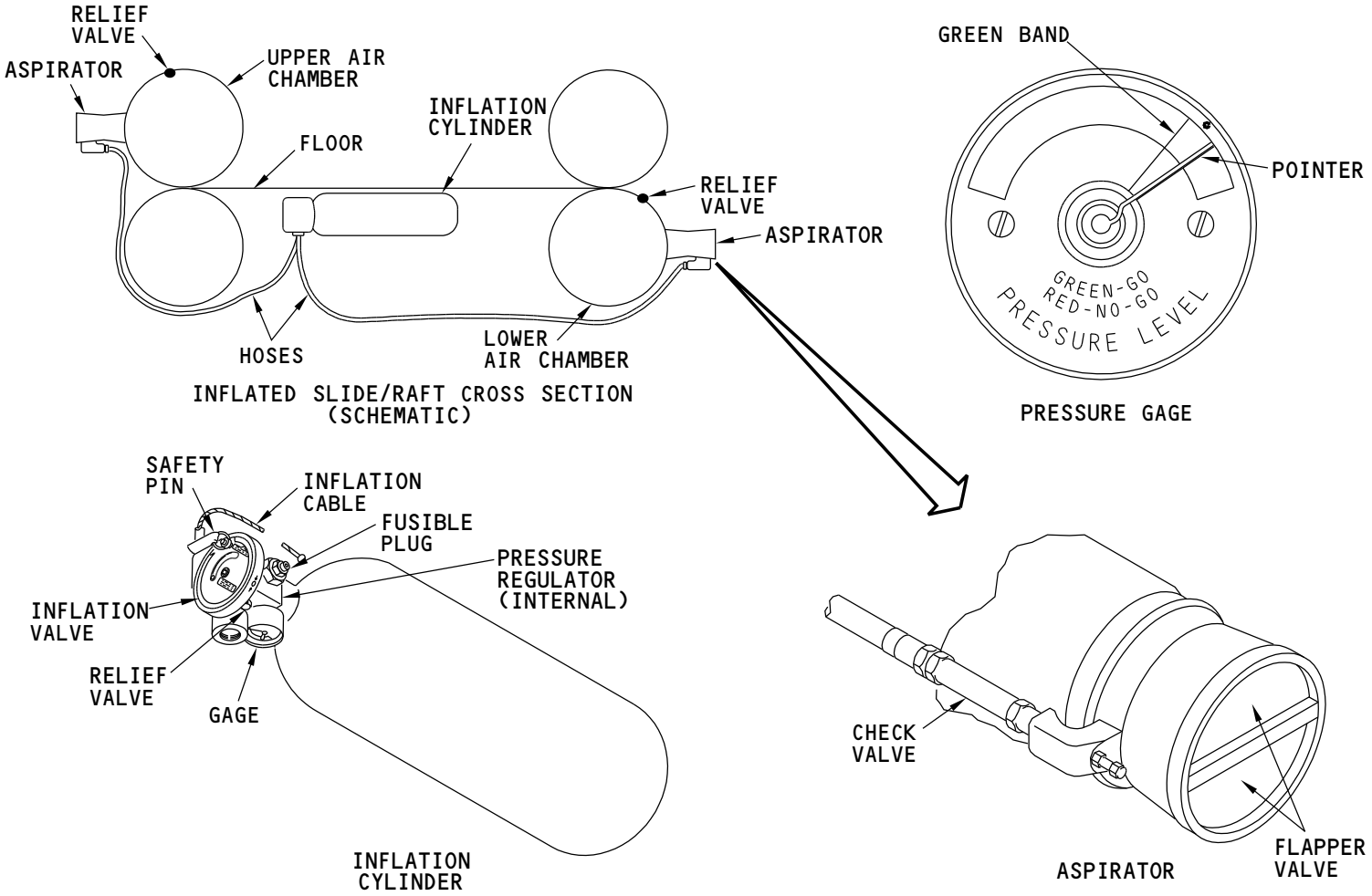
When pressure inside the slide/raft reaches a specified value, the flapper valves close. Gas continues to flow from the cylinder into the slide raft. When the slide/raft is at the correct operating pressure (2.6 psig), relief valves open to prevent overpressurization.

Training Information Point

Hold the aspirator flapper valves open to deflate the slide/raft after an inflation test.

You must install the safety pin to lock the inflation valve during removal or installation of the escape slide pack. When you return the airplane to its usual condition, be sure to remove the pin from the valve. The slide pack lacing cover has a stowage pouch for the pin.

The pressure gage makes allowance for temperature changes. The pointer moves with pressure changes. The green band moves with temperature changes. If the pointer is within the green band, the cylinder pressure is correct for the cylinder temperature.



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DOOR-MOUNTED ESCAPE SYSTEM - ESCAPE SLIDE PACK - SLIDE/RAFT FUNCTIONAL DESCRIPTION

DOOR-MOUNTED ESCAPE SYSTEM - BUSTLE

Purpose

The bustle is the door lower liner. It is a cover for the slide/raft and makes the installation look good.

Physical Description

The bustle is a crushed core shell covered on both sides with graphite composite. Tedlar laminate covers the inboard side. A window in the bustle lets you see the slide pack pressure gauge. Rubstrips protect the bustle from galley service carts.

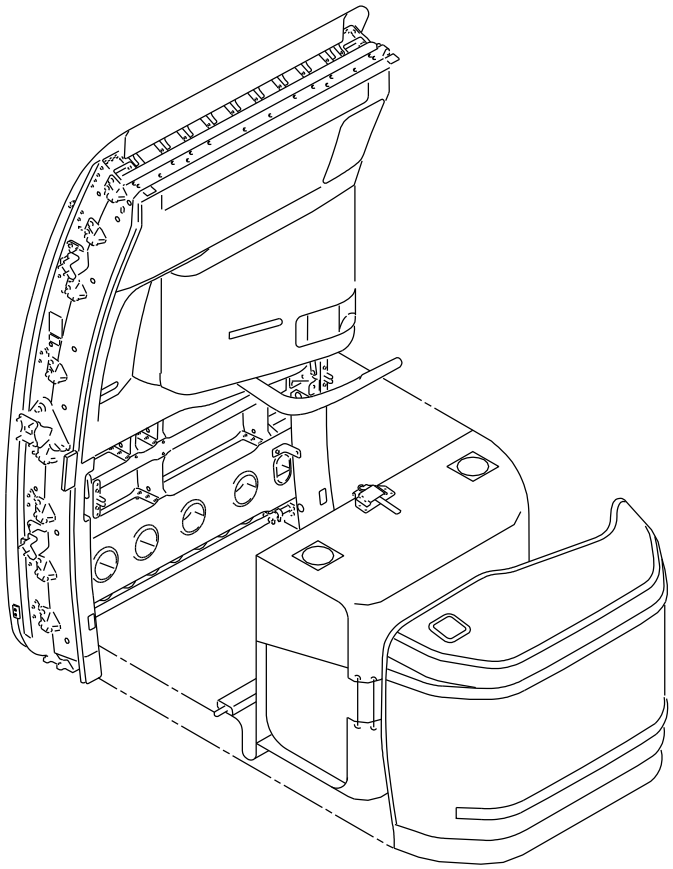
Two latches hold the top of the bustle to the door. The latches have a hinge which allows the bottom of the bustle to move inboard. Alignment fittings hold the bottom of the bustle in position against the door.

Functional Description

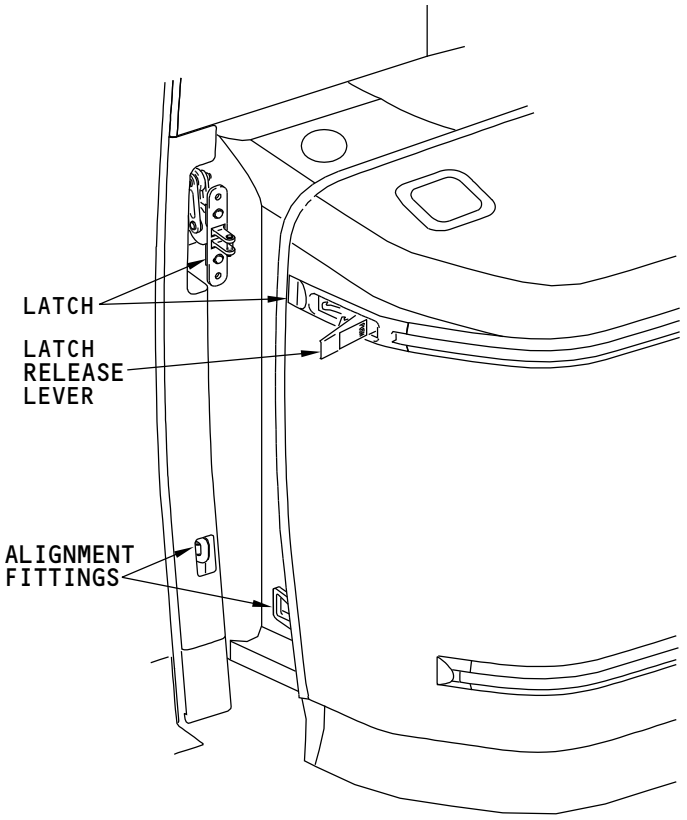
When the door opens in the armed mode, the escape slide girt puts pressure on the bottom edge of the bustle. The alignment fittings at the bottom of the bustle click open. This permits the door to continue opening while the escape slide drops.

Training Information Point

Release the alignment fittings and latches to remove the bustle from the door. Pull the bottom of the bustle inboard to release the alignment fittings. Open the levers to release the latches at the top of the bustle.



DOOR–MOUNTED ESCAPE SYSTEM



BUSTLE

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DOOR-MOUNTED ESCAPE SYSTEM - BUSTLE

Door Handle Moved to the Open Position

When you put the door mode selector in the armed position, the girt bar locks in the floor fittings. When you move the door handle to the open position, the door unlatches. The emergency power assist system (EPAS) starts to open the door. See the passenger entry doors section for more information on the EPAS (SECTION 52-11).

Tension on the Cover Release Cable

When the door opens far enough to put tension on the cover release cable, this sequence occurs:

- Tension at the girt clicks the bustle open
- The door continues to move open
- The cover release cable pulls free of the release mechanism, so it can open
- The lower lacing cover releases from the packboard
- The escape slide pack falls from the packboard.

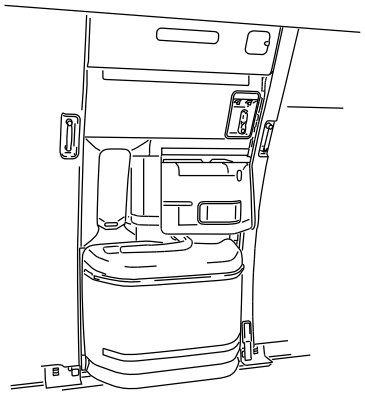
Tension on the Slide Inflation Cable

When the escape slide pack falls from the packboard, the weight of the pack applies tension to the slide inflation cable. This sequence occurs:

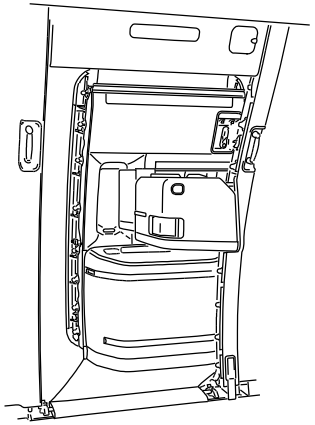
- Tension on the inflation cable opens the inflation cylinder valve
- The inflation cylinder uses air from the aspirators to inflate the slide.

Manual Inflation

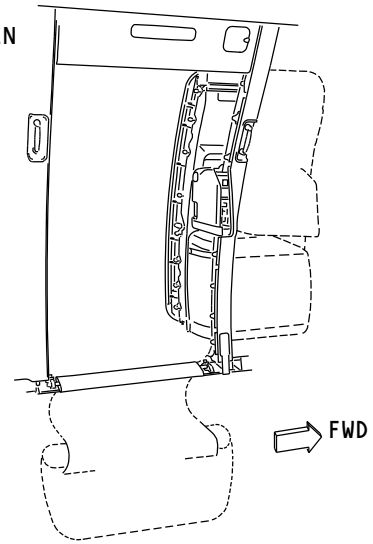
Sometimes the slide pack hits the ground or water before it falls far enough to apply tension to the inflation cable. If that happens the slide does not inflate automatically. A handle on the girt end of the inflation cable lets you open the inflation valve manually. Pull the handle to inflate the slide.



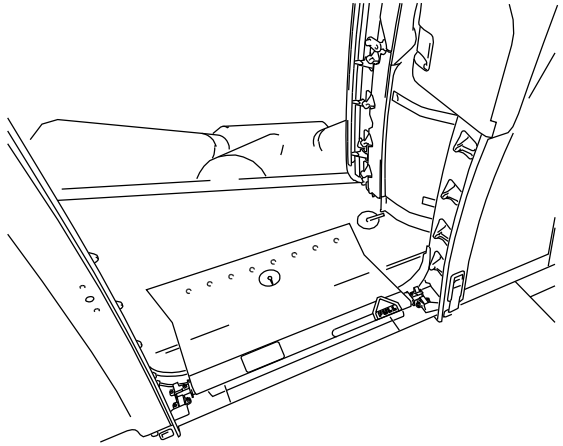
DOOR HANDLE MOVED TO OPEN



TENSION ON COVER RELEASE CABLE



TENSION ON SLIDE INFLATION CABLE



INFLATED SLIDE/RAFT

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DOOR-MOUNTED ESCAPE SYSTEM - FUNCTIONAL DESCRIPTION - DEPLOYMENT

DOOR-MOUNTED ESCAPE SYSTEM - FUNCTIONAL DESCRIPTION - SEPARATION

General

During ditching, when passengers and crew are aboard the rafts, the rafts must move away from the airplane.

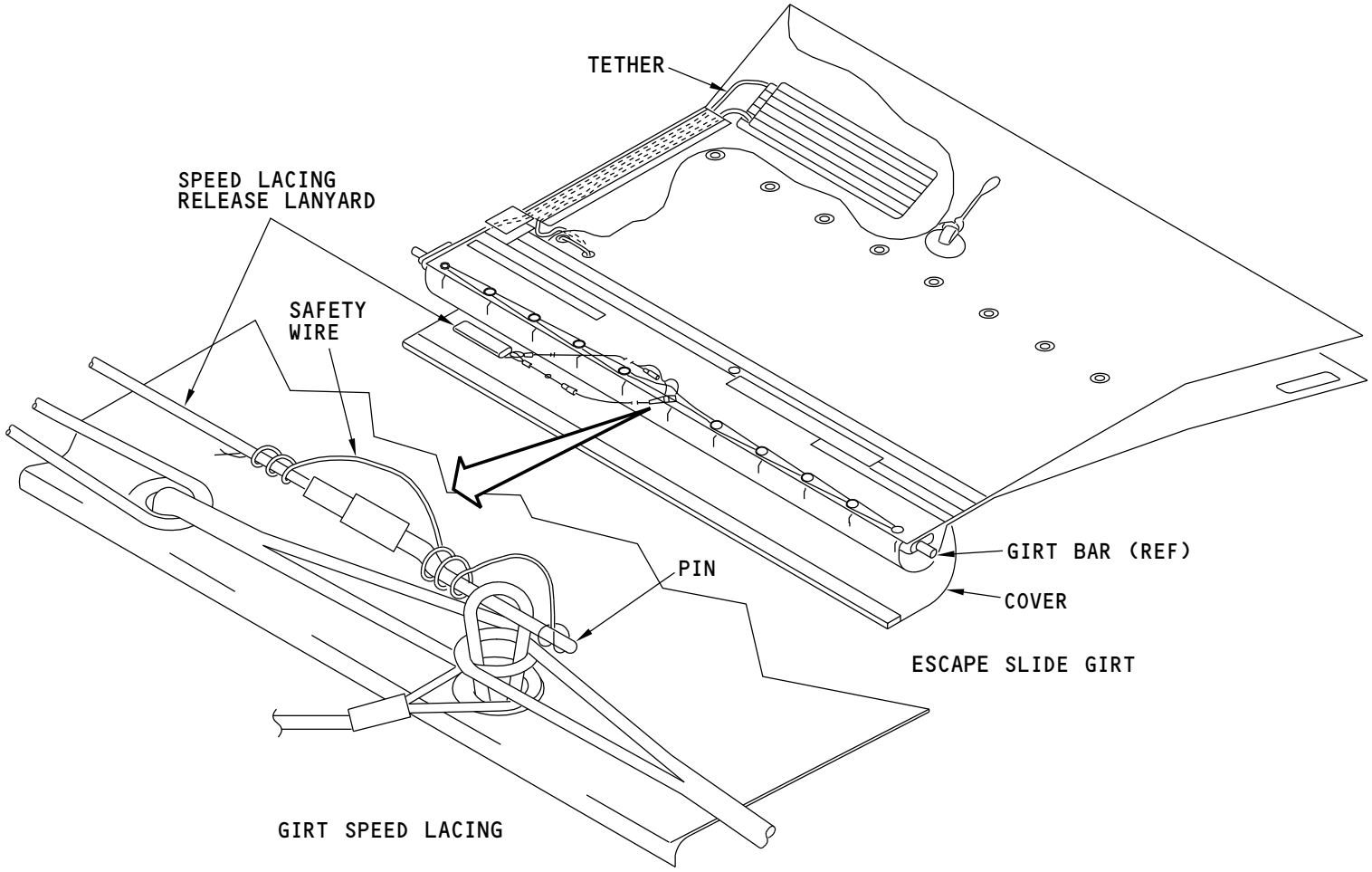
The slide raft girt attaches to the girt bar with speed lacing. Open the cover at the girt and pull the lanyard. This removes the pin and releases the speed lacing so the slide/raft can move away from the airplane. The girt bar stays attached to the airplane.

A tether stowed in the girt keeps the raft attached loosely to the airplane. A hook knife is in the raft to cut the tether when necessary.

Training Information Point

After an inflation test, remove the slide/raft from the airplane this way:

- Support the girt end of the slide/raft
- Remove the girt bar from the floor fittings
- Lower the girt end of the slide/raft to the floor.



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DOOR-MOUNTED ESCAPE SYSTEM - FUNCTIONAL DESCRIPTION - SEPARATION