



## AIRCRAFT MAINTENANCE MANUAL – SYSTEM DESCRIPTION SECTION

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**53-00-00-001**

### FUSELAGE, GENERAL

#### Introduction

The fuselage forms the primary structure of the aircraft. The fuselage contains the pressurized flight deck, passenger areas and baggage compartments.

#### General Description

Refer to Figures 1 and 2.

The fuselage is a semi-monocoque structure with skin reinforced by circumferential frames and longitudinal stringers. The primary structures in the fuselage are the stringers, frames and aircraft skin. The fuselage structure is made of high strength aluminum alloys (2024 and 7075).

The fuselage contains all of the pressurized area. The pressurized area of the fuselage extends from the forward pressure bulkhead at station X -111.00 to the aft pressure bulkhead at station X 836.452. The pressurized area includes the flight compartment, passenger compartment and baggage compartments.

The fuselage has these components:

- Nose Fuselage (53-10-00)
- Forward Center Fuselage (53-20-00)
- Middle Center Fuselage (53-30-00)

- Aft Center Fuselage (53-40-00)
- Aft/Tail Fuselage (53-50-00)

#### Nose fuselage section

The Nose fuselage section is attached to the forward section of the main fuselage structure. The nose section includes the flight compartment, nose wheel well, forward pressure bulkhead and forward equipment compartment. This part of the fuselage section extends from station X -178.00 to station X -18.250 where it joins the forward center fuselage.

#### Forward fuselage section

The forward fuselage section is part of the main fuselage structure. The forward center fuselage contains the passenger airstair door, forward baggage compartment, lavatory and the forward passenger area of the aircraft. This part of the fuselage extends from the nose fuselage section joint at station X-19.775 to the middle center fuselage section at station X234.475).

#### Middle Fuselage Section

This part of the center fuselage forms the majority of the passenger area of the aircraft. The middle fuselage contains the mounting brackets for the tension bolts to attach the wing box to the aircraft structure. This part of the fuselage extends from the forward center fuselage section at station X234.475 to the aft center fuselage section at station X566.025.



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### Aft Fuselage Section

The aft fuselage section connects the aircraft structure to the empennage section. The aft center fuselage contains the aft galley, aft baggage compartment and the rear pressure bulkhead. This part of the fuselage extends from the middle center fuselage section at station X564.500 to the aft fuselage section at station X836.452.

### Tail Fuselage Section

The vertical stabilizer and dorsal fin are a part of the aft/tail fuselage section. The lower part of the three stabilizer spars extend down to make the mainframe of the rear fuselage. The aft/tail fuselage section is the part of the aircraft behind the rear pressure bulkhead at station X836.452 (X829.548 without the tail cone).

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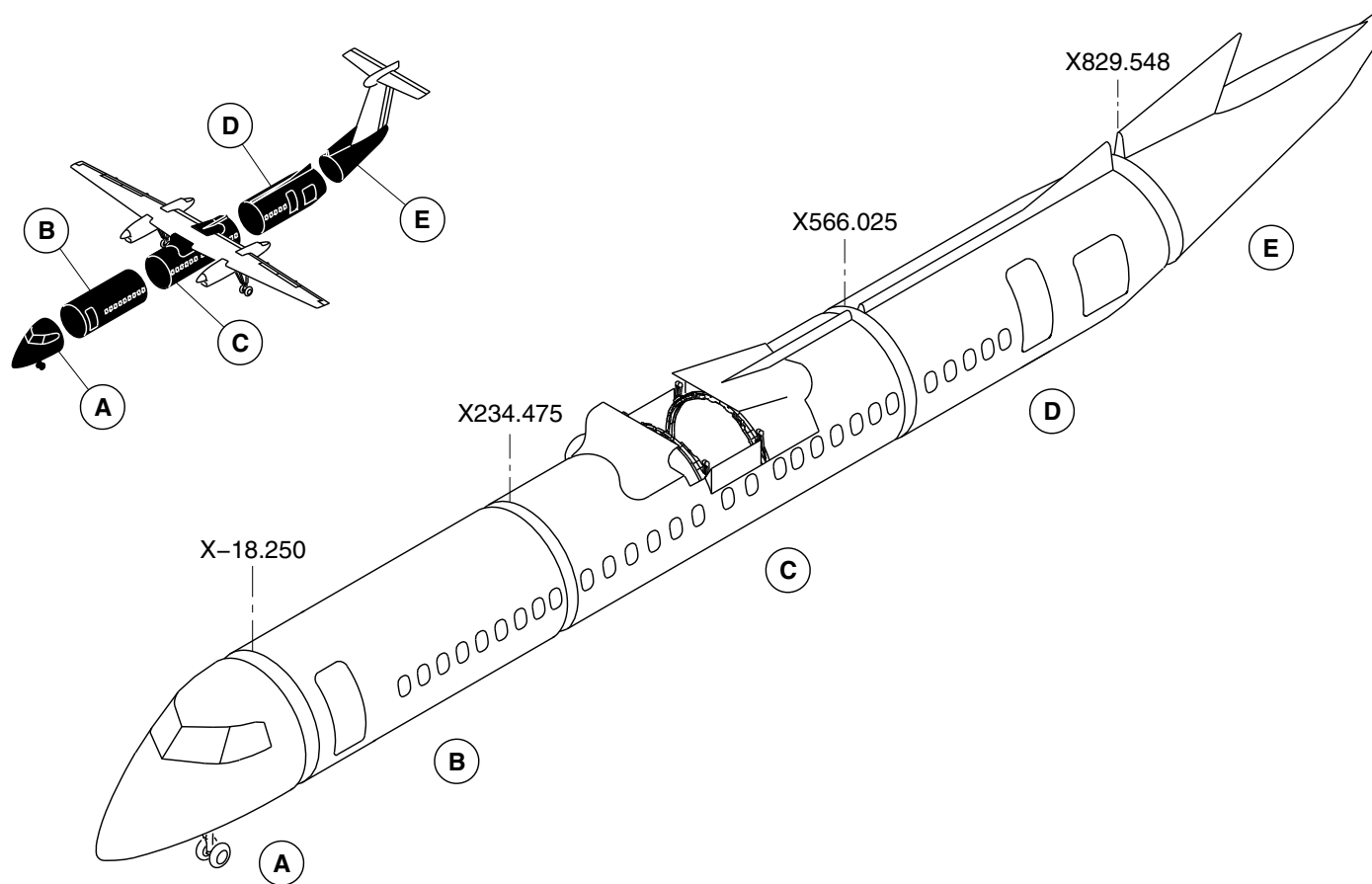
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Fuselage Locator  
Figure 1

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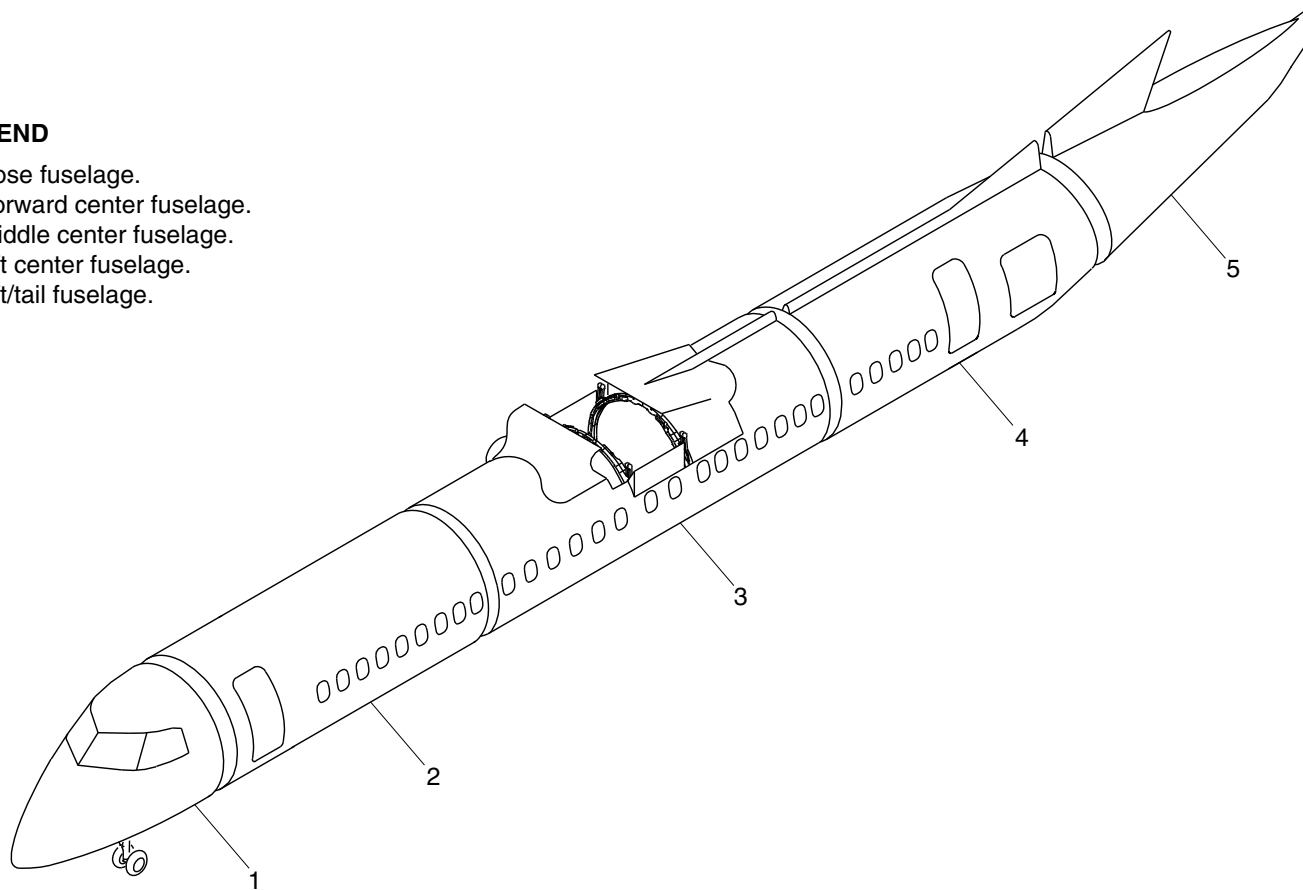


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## AIRCRAFT MAINTENANCE MANUAL – SYSTEM DESCRIPTION SECTION

### LEGEND

1. Nose fuselage.
2. Forward center fuselage.
3. Middle center fuselage.
4. Aft center fuselage.
5. Aft/tail fuselage.



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Fuselage Sections Detailed  
Figure 2

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### **NOSE FUSELAGE**

#### **Introduction**

The Nose fuselage section is attached to the forward section of the main fuselage structure. The nose section includes the flight compartment, nose wheel well, forward pressure bulkhead and forward equipment compartment.

#### **General Description**

The fuselage is a semi-monocoque structure with skin reinforced by circumferential frames and longitudinal stringers. The primary structures in the fuselage are the stringers, frames and aircraft skin. The fuselage structure is made of high strength aluminum alloys (2024 and 7075).

A protective coating along the bottom of the fuselage is applied for protection from unpaved runways. One layer of F22 epoxy-polyamide enamel and two layers of corrosion preventive compound (F13) are applied to get an erosion resistant protective coating.

The nose section of the fuselage has these components:

- Nose Fuselage Access Panels (53-10-00)
- Nose Fuselage Fairings (53-12-00)
- Nose Fuselage Floor (53-13-00)

#### **Detailed Description**

[Refer to Figure 1.](#)

The nose section includes the flight compartment. It is separated from the passenger cabin by a bulkhead which contains a lockable door. A removable hatch type of emergency exit is provided in the flight compartment roof, that can be opened for ventilation purposes when the aircraft is on the ground. The windshield panels are of laminated glass construction stressed to take pressure from the inside. The windshields are designed to withstand birdstrikes. The side window panels are constructed of stretched acrylic laminates.

The nose section extends from station X-178.00 to X-18.250 where it joins the forward center fuselage.

[Refer to Figure 2.](#)

The forward pressure bulkhead is located just ahead of the windshields at station X-111.00. The area forward of the bulkhead encloses the unpressurized equipment compartment and supports the weather radar unit and the nose cone. The nose landing gear and nosewheel well are located below the equipment compartment.

#### **Nose Access Panels**

[Refer to Figure 3.](#)

[Refer to Figure 4.](#)

[Refer to Figure 5.](#)

There is an vent panel (112BR) on the bottom of the nose fuselage. The panel located forward of the forward pressure bulkhead to allow ventilation of the oxygen system and the forward outflow valve. The vent panel gives access to the forward outflow valve. On aircraft with



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ModSum 4–422700 incorporated, an additional panel (112CR) is located on the right side of the nose fuselage. This panel gives access to the ground power receptacle. There are four service panels (121AL, 121BL, 122BR, 122AR) on the left and right side of the nose fuselage. The panels give access to the inner side of the nose fuselage for maintenance purposes.

### **Nose Fuselage Fairings**

Refer to Figure 6.

The radome on the front of the aircraft is held in by four attachment points which are torqued to a maximum of 125 lb/in (21.9 kN/m) of force. The radome is sealed with DHMS S3.01/B2.

### **Nose Fuselage Floor**

Refer to Figure 7.

The Floor area of the flight compartment is covered with a foam backed vinyl–coated floor covering. There are eight floor panels (121AZ, 121BZ, 121CZ, 121DZ, 122AZ, 122BZ, 122CZ, 122DZ) located in the cockpit of nose fuselage. The panels give access to the inner side of the nose fuselage for maintenance purposes. Access panel 122DZ provide access to the nose landing gear emergency release and MLG alternate extension hand pump.

The panels 121AZ and 122AZ give access to the brake rods and rudder input shafts. The panels 121BZ and 122BZ give access to the control column, control column chain and electrical wiring. The panel 121CZ gives access to the electrical wiring. The panel 121DZ gives the access to the aileron–gust–lock cables, aileron–gust–lock quadrant, aileron cables, aileron quadrant, aileron servo, aileron servo cables, roll disconnect spring and lever assembly, roll

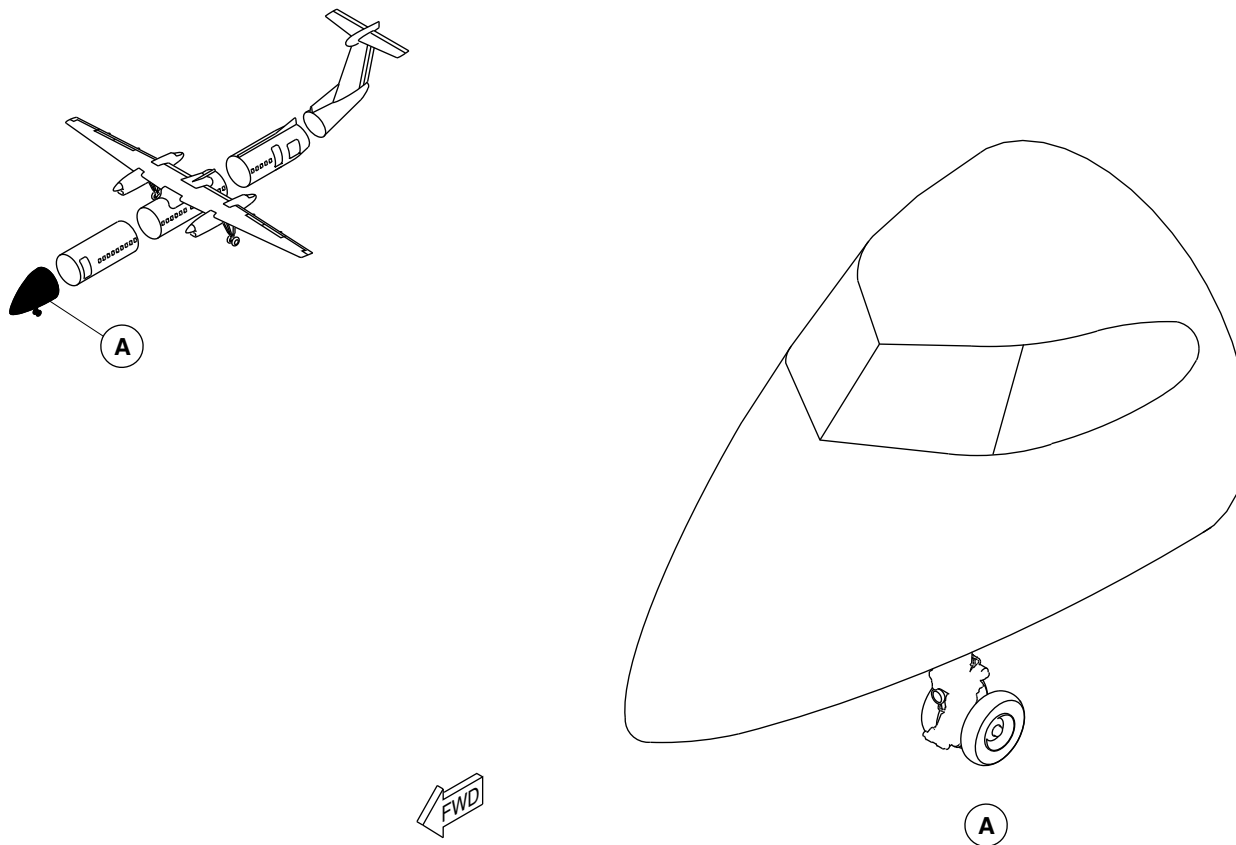
disconnect cables, rudder restrictor, rudder cables, rudder quadrants, spoiler cables, spoiler quadrant, elevator cables, elevator quadrants, pitch–disconnect–clutch mechanism, pitch disconnect cable, control columns, control–column–torque tube, NLG–alternate–extension cable, brake control cable, parking–brake–control cable, stick pusher activator, stick pusher quadrant, DME antenna, TCAS antenna, antenna cables, engine intake heater adapters thermostats, hydraulic lines and electrical wiring.

The panel 122CZ gives access to the inspection panel. The panel 122DZ gives access to the NLG–alternate–extension assembly, MLG–alternate–extension hand–pump assembly, NLG–alternate–extension handle and Landing–gear–downlock lights.



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NOSE FUSELAGE LOCATOR  
Figure 1

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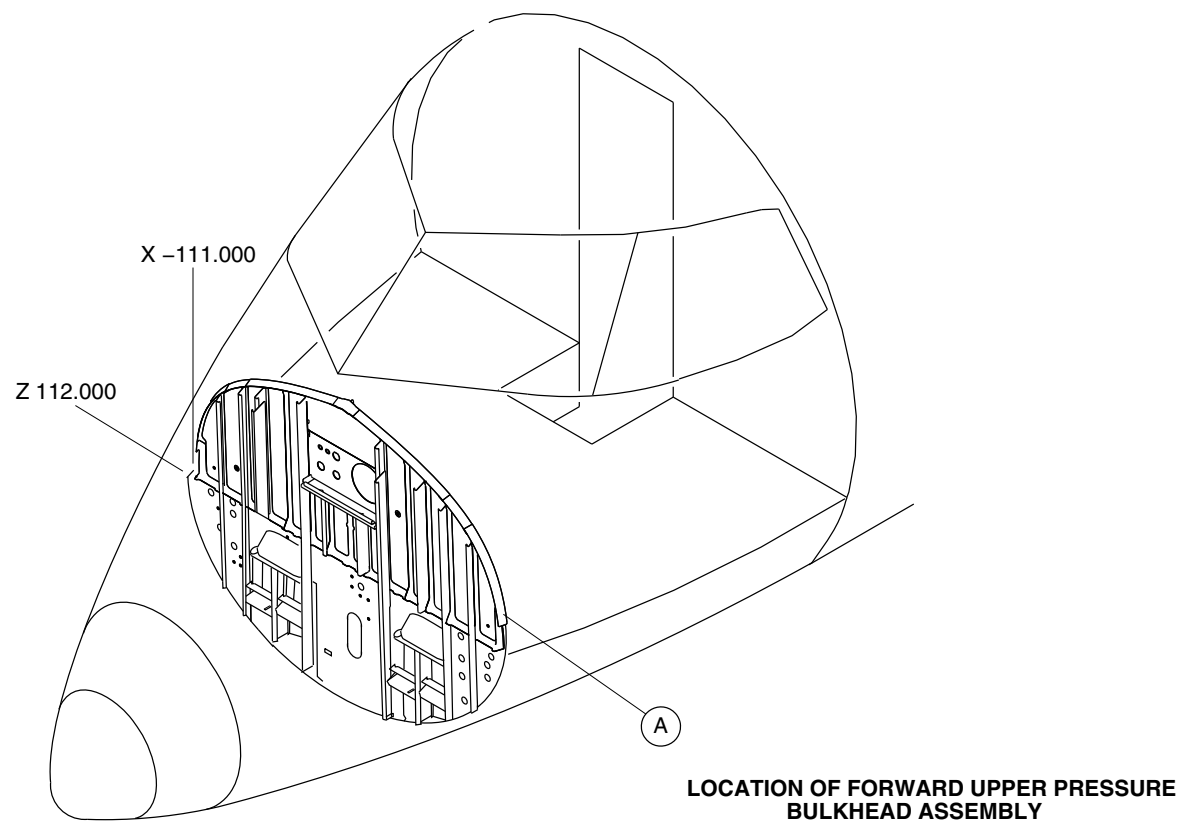
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NOSE FUSELAGE PRESSURE BULKHEAD  
Figure 2

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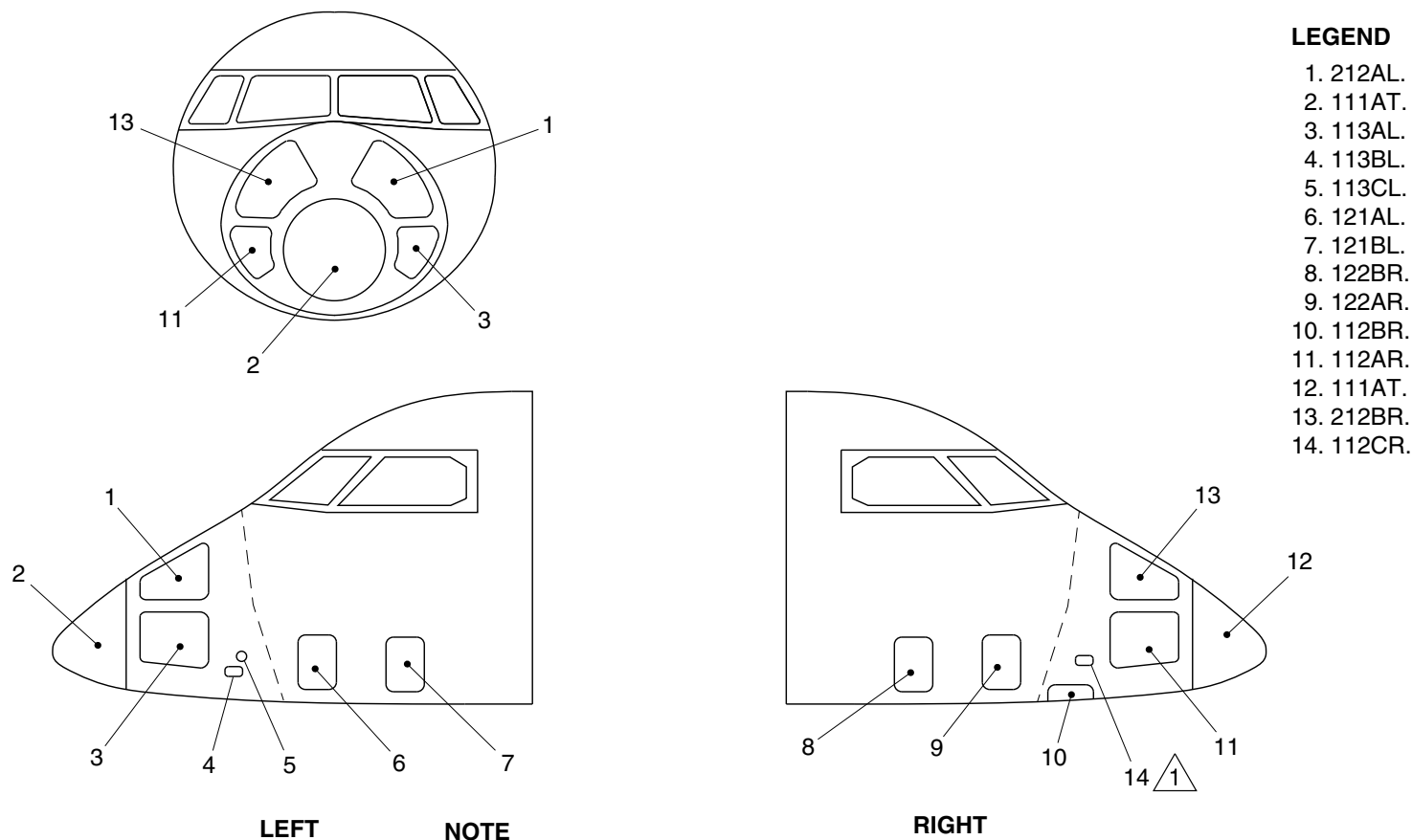
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## LEGEND

1. 212AL.
2. 111AT.
3. 113AL.
4. 113BL.
5. 113CL.
6. 121AL.
7. 121BL.
8. 122BR.
9. 122AR.
10. 112BR.
11. 112AR.
12. 111AT.
13. 212BR.
14. 112CR.

LEFT

NOTE



Applicable only on aircraft with ModSum  
4-422700 incorporated.

RIGHT

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Nose Access Panels  
Figure 3

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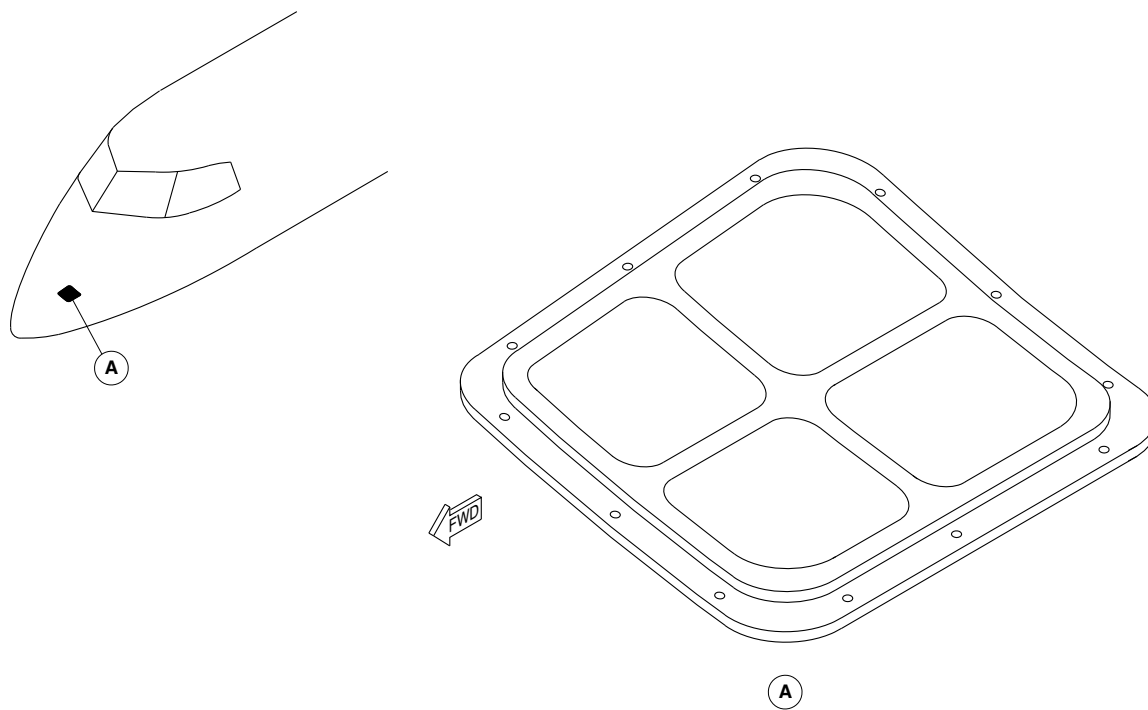
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NOSE VENT PANEL  
Figure 4

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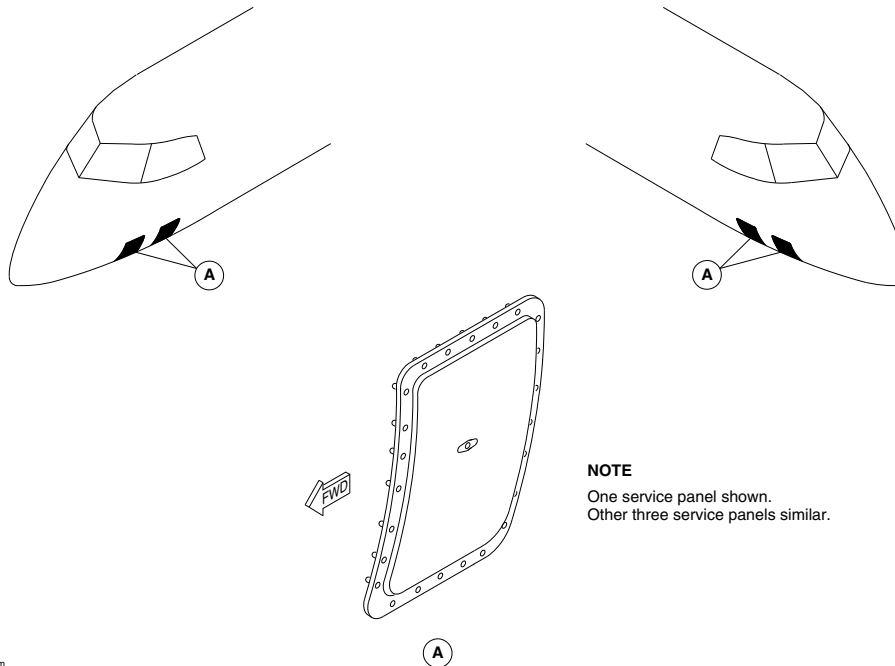
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### NOTE

One service panel shown.  
Other three service panels similar.

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NOSE SERVICE PANELS  
Figure 5

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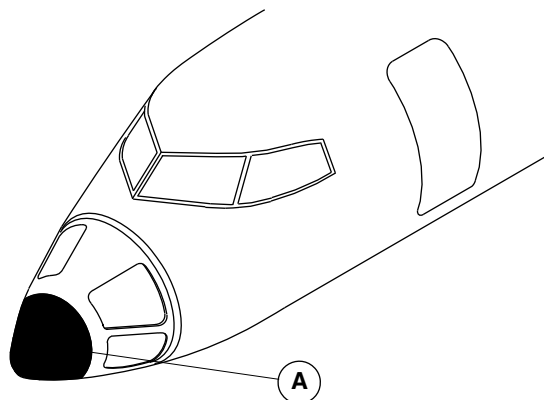
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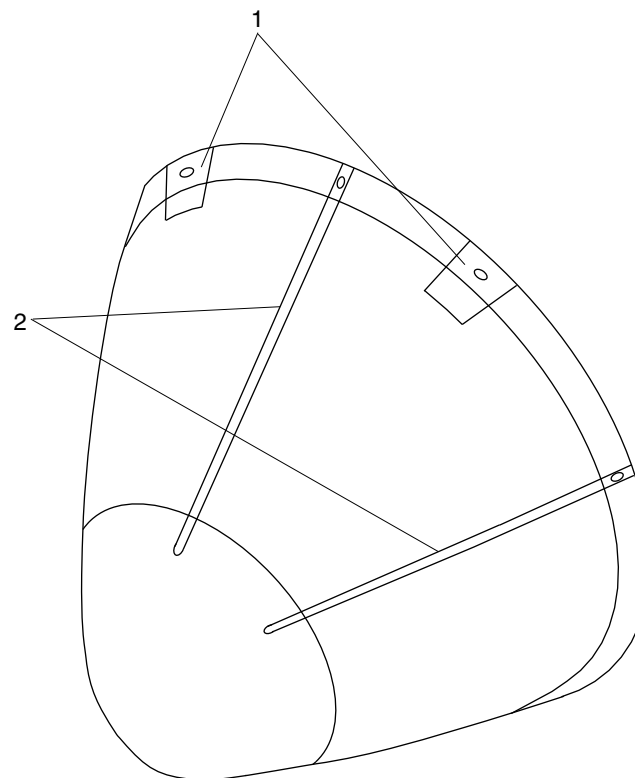
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### LEGEND

- 1. Latches.
- 2. Lightning Diverter Strips.



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FAIRINGS — NOSE RADOME  
Figure 6

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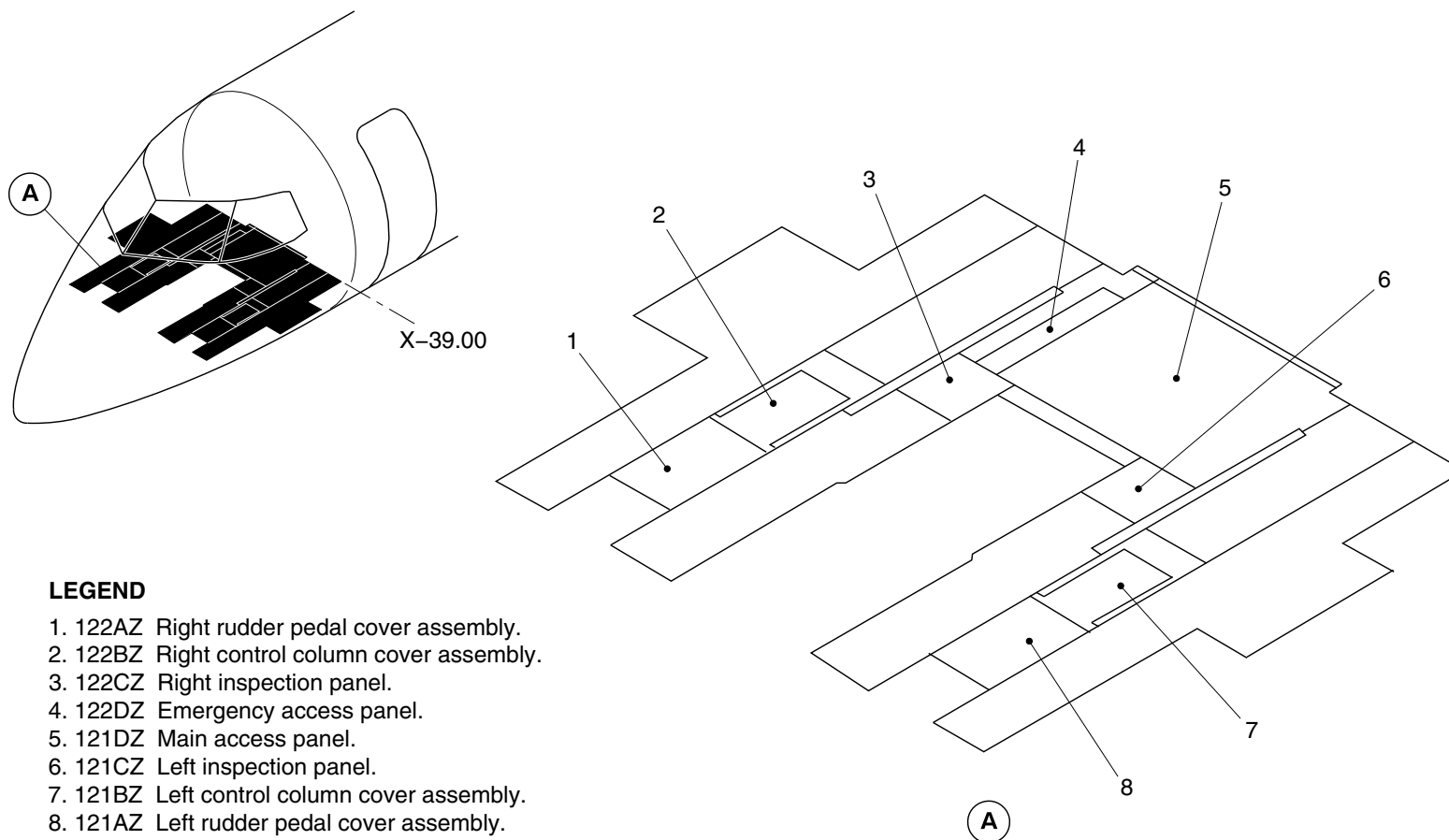
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### LEGEND

1. 122AZ Right rudder pedal cover assembly.
2. 122BZ Right control column cover assembly.
3. 122CZ Right inspection panel.
4. 122DZ Emergency access panel.
5. 121DZ Main access panel.
6. 121CZ Left inspection panel.
7. 121BZ Left control column cover assembly.
8. 121AZ Left rudder pedal cover assembly.

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Floor Access Panels – Flight Compartment  
Figure 7

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### FORWARD CENTER FUSELAGE

#### Introduction

The forward center fuselage is a part of the main fuselage which forms the primary structure of the aircraft.

#### General Description

The fuselage is a semi-monocoque structure with skin reinforced by circumferential frames and longitudinal stringers. The primary structures in the fuselage are the stringers, frames and aircraft skin. The fuselage structure is made of high strength aluminum alloys (2024 and 7075).

A protective coating along the bottom of the fuselage is applied for protection from unpaved runways. One layer of F22 epoxy-polyamide enamel and two layers of corrosion preventive compound (F13) are applied to get an erosion resistant protective coating.

The forward center fuselage has these components:

- Forward Center Fuselage Access Panels (53-21-00)
- Forward Center Fuselage Floor (53-23-00)

#### Detailed Description

[Refer to Figure 1.](#)

The forward center fuselage extends from the nose fuselage section joint (Sta. X-19.775) to the middle center fuselage section (Sta. X234.475). This part of the center fuselage forms the forward baggage compartment and the forward passenger area of the aircraft. It contains the airstair door and a flight attendant seat. The flight attendant seat is attached to the aft wall of the forward wardrobe compartment. The forward center fuselage is largely of a constant circular cross section of 106 in. (2692 mm) outer diameter with a flat bottom of a larger radius. Extensive use is made of flush riveting on stringers and window reinforcements to the skin.

[Refer to Figure 2.](#)

An under-galley drainage trough and fluid deflector collector system is installed from Sta. X49.500 to Sta. X388.000. On aircraft with ModSum 4-113777 OR SB 84-25-143 incorporated, an improved drain line routing is installed forward of Sta. X32.400. The two hoses from the drain trays are connected to the lavatory drain mast through a Y-fitting. Fluid spills around the galley are drained by under-floor drain channels to the bottom of the aircraft and then removed by automatic drain valves. The threaded drain plugs are installed in the lower side of the airstair door cutout. The accumulated water in the threshold of the airstair door surround is removed by loosening the plugs. For more details on drain plugs refer to AMM Part 2, TASK 53-20-23-400-801.

On aircraft with Modsum 4-113828 OR SB 84-25-153 incorporated, the drain line routing is extended to Sta. X-32.000. There are six hoses attached to the drain trays between Sta. X388.000 and Sta. X32.000, and there is a new drain fitting at Sta. X-26.000.

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### Forward Center Fuselage

Refer to Figure 3.

Refer to Figure 4.

The use of riveting of stringers and window reinforcements to the skin uses minimum weight to permit a smooth riveted external surface. This also stops crack propagation.

### Forward Center Fuselage Access Panels

Refer to Figure 5.

There is an access panel (134AR) on the right side of the forward center fuselage. The panel located forward of the forward baggage door gives access to the forward lavatory toilet servicing panel.

### Forward Center Fuselage "Cut Through" Panels

Refer to Figure 6.

The sixth window aft of the forward passenger door (or the forth window aft of the Type 11/111 emergency exit on the right side) are the recommended first choice cut-through areas. Note: any window is suitable in extreme circumstances.

"Cut-through" areas require portable metal cutting equipment. It is recommended that major effort is used to gain access to doors and hatches due to the type of structure and possible injury to personnel within.

### Forward Center Fuselage Floor

Refer to Figure 7.

Refer to Figure 8.

Refer to Figure 9.

The forward center fuselage forms the horizontal base of the passenger and attendant area. It is largely of a constant flat bottom cross section of 80 in. (2032 mm).

Floor loads are held by the seat rails and frames. The floor structure makes the airframe stable if there is a wheels-up landing.

Floor coverings in the passenger compartment use an anti-static filament in the carpet weave. Floor coverings in and ahead of the airstair door entrance way is a foam backed vinyl. Floor panels in the entrance way are sealed with vinyl tape and caulking to prevent moisture from going below the floor level.

There are two types of floor panels installed in the passenger compartment. Type 1 or Type 2 panels may be installed, dependent on the cabin interior noise and vibration levels, the required stress resistance and the location.

#### COMP 27 Type 1

Floor panels used under the seats are made of unidirectional carbon/phenolic faces and aramid honeycomb core. These panels withstand stress of 37.5 lb/ft<sup>2</sup> (1.8 kN/m<sup>2</sup>).

#### COMP 27 Type 2

Floor panels used in the center aisle are sandwich construction with unidirectional carbon/phenolic faces and aramid honeycomb core. These panels withstand stress of 75 lb/ft<sup>2</sup> (3.6 kN/m<sup>2</sup>).





## AIRCRAFT MAINTENANCE MANUAL – SYSTEM DESCRIPTION SECTION

### COMP 28 Type 1

Floor panels used in the cabin entry way area are sandwich construction with unidirectional S-glass/epoxy faces and aramid honeycomb core. These panels withstand stress of 75 lb/ft<sup>2</sup> (3.6 kN/m<sup>2</sup>).

### COMP 28 Type 2

Floor panels used in the galley and lavatory areas are sandwich construction with unidirectional S-glass/epoxy faces and aramid honeycomb core. These panels absorb moisture with negligible mechanical property degradation and withstand stress of 125 lb/ft<sup>2</sup> (6.0 kN/m<sup>2</sup>).

Floor panels used in the entrance areas are sandwich construction with unidirectional fiberglass faces and aramid honeycomb core. These panels are stronger and prevent moisture absorption and withstand stress of 75 lb/ft<sup>2</sup> (3.6 kN/m<sup>2</sup>).

Floor panels used in the baggage compartment areas are sandwich construction with unidirectional fiberglass faces with a polyester overlay and aramid honeycomb core. These panels are stronger and prevent wear with negligible mechanical property degradation and withstand stress of 125 lb/ft<sup>2</sup> (6.0 kN/m<sup>2</sup>).

[Refer to Figure 10.](#)

On aircraft with Modsum 4-459222 incorporated there are two types of floor panels that are installed in the passenger compartment and aft cargo compartment. Type 1, Type 3 and Type 6 panels are used in the passenger compartment. Type 2, Type 3 and Type 4 panels are used in the aft cargo compartment.

### COMP 27 Type 3

Floor Panels used under the seats are made of unidirectional carbon/phenolic faces and the aramid honeycomb core. These panels withstand stress of 37.5 lb/ft<sup>2</sup> (1.8 kN/m<sup>2</sup>).

### COMP 27 Type 3

Floor Panels used in the center aisle between the stations X71.20 and X584.50 are sandwich construction with unidirectional carbon/phenolic faces and the aramid honeycomb core. These panels withstand stress of 75 lb/ft<sup>2</sup> (3.6 kN/m<sup>2</sup>).

### COMP 28 Type 1

Floor Panels used in the cabin entry way area and in the C1A wardrobe area are sandwich construction with unidirectional S-glass/epoxy faces and the aramid honeycomb core. These panels withstand stress of 75 lb/ft<sup>2</sup> (3.6 kN/m<sup>2</sup>).

### COMP 28 Type 3

Floor panels used in the galley and the lavatory areas are sandwich construction with unidirectional S-glass/epoxy faces and the aramid honeycomb core. These panels absorb moisture with negligible mechanical property degradation and withstand stress of 75 lb/ft<sup>2</sup> (3.6 kN/m<sup>2</sup>).

### COMP 28 Type 2, Type 3 and Type 4

Floor panels used in the aft cargo compartment areas are sandwich construction with unidirectional fiberglass faces with a polyester overlay and the aramid honeycomb core. These panels are stronger and prevent wear with negligible mechanical property degradation and withstand stress of 125 lb/ft<sup>2</sup> (6.0 kN/m<sup>2</sup>).

### COMP 28 Type 6

Floor panels used in the center aisle between the stations X-37.00 and X71.20 are sandwich construction with unidirectional



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carbon/phenolic faces and the aramid honeycomb core. These panels withstand stress of 75 lb/ft<sup>2</sup> (3.6 kN/m<sup>2</sup>).

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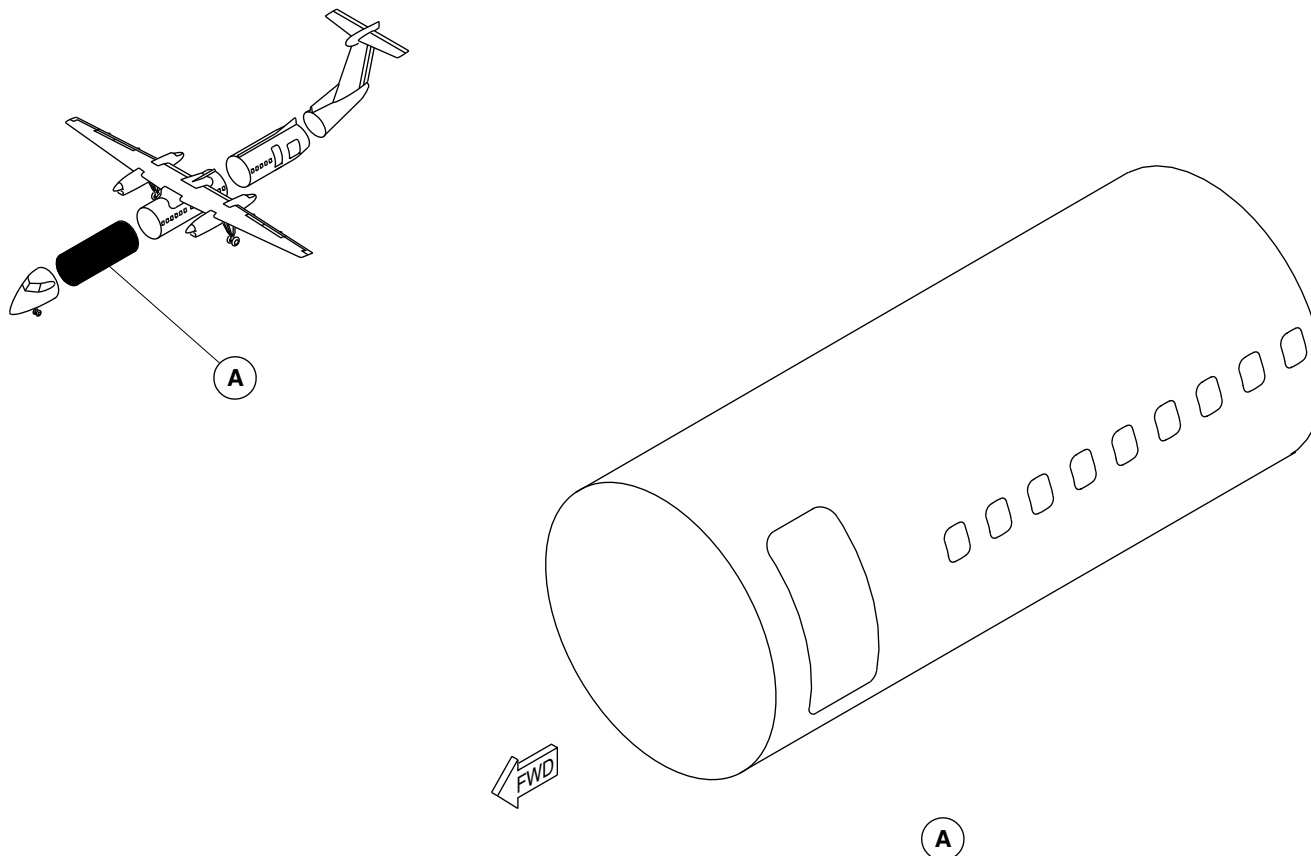
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FORWARD CENTER FUSELAGE LOCATOR  
Figure 1

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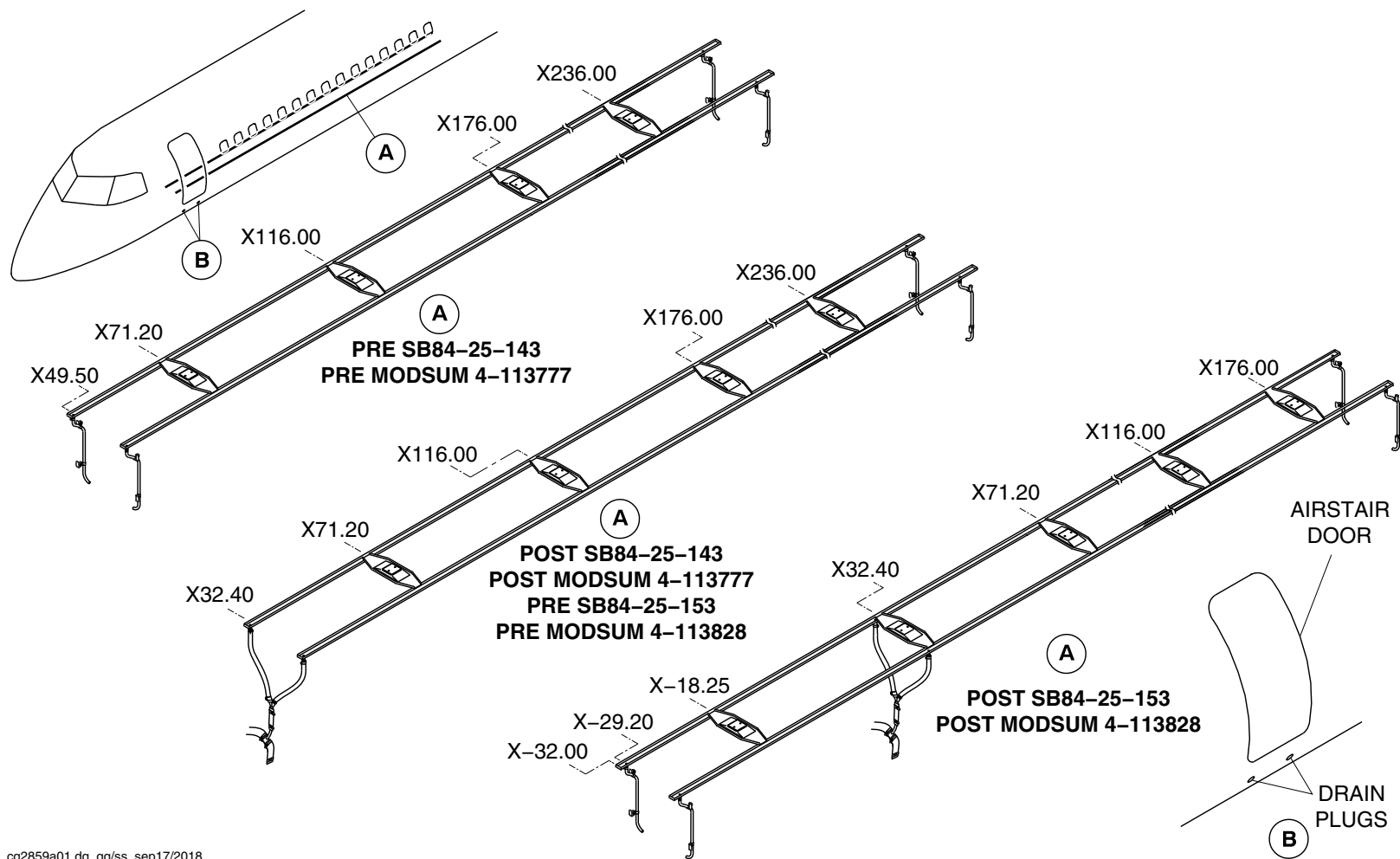
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Forward Center Fuselage / Drainage Trough Locator  
Figure 2

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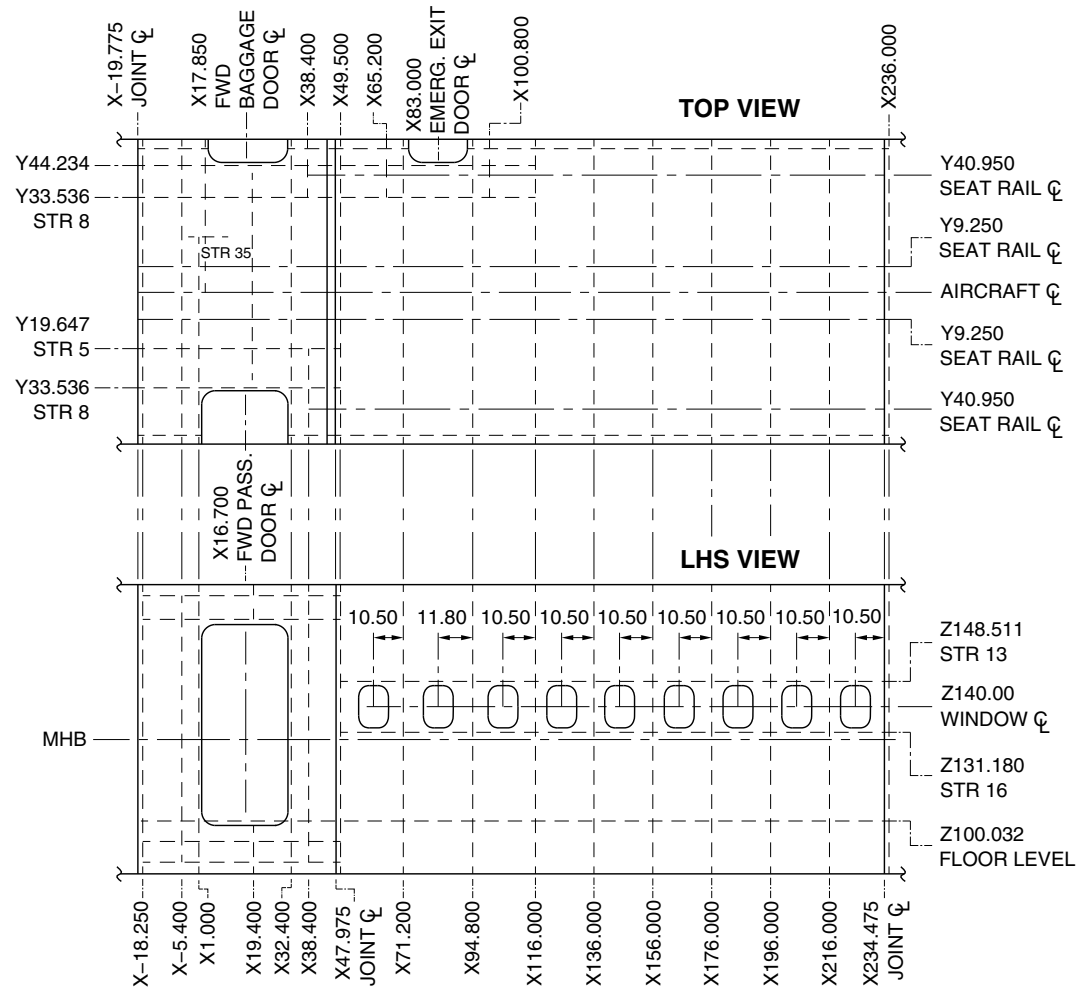
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Forward Center Fuselage Dimensions  
Figure 3

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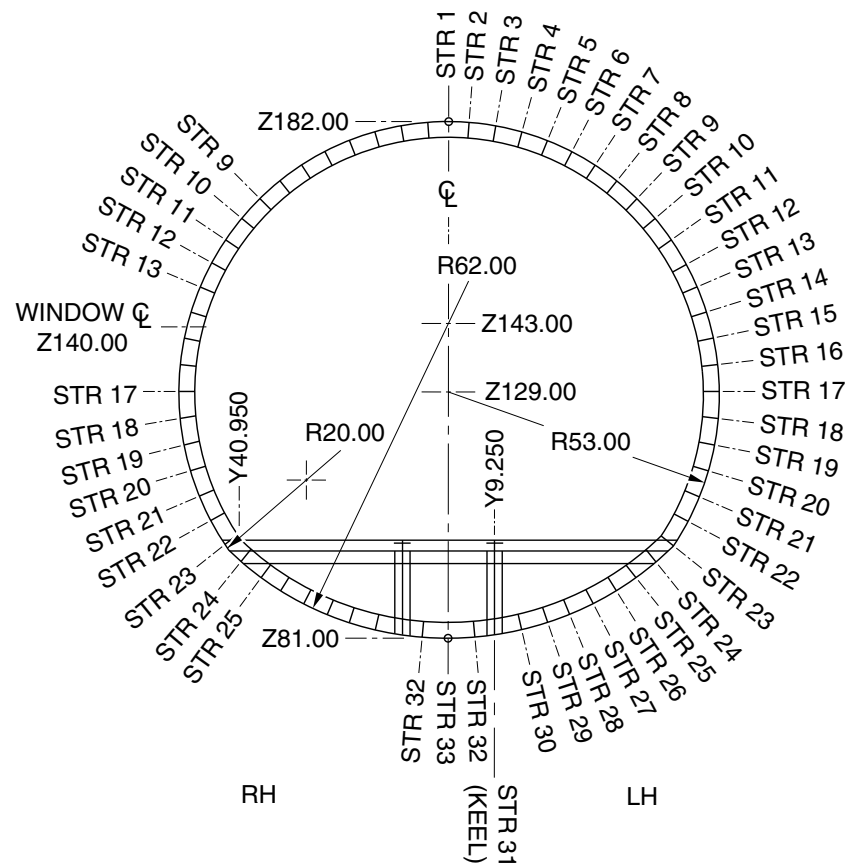
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TYPICAL SECTION THROUGH  
CENTER FUSELAGE

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Forward Center Fuselage Floor Cross Section Dimensions  
Figure 4

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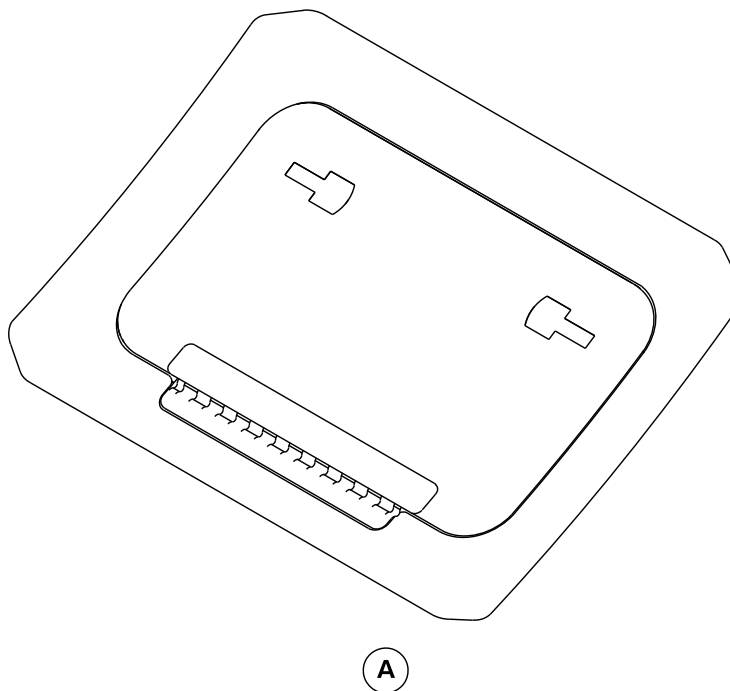
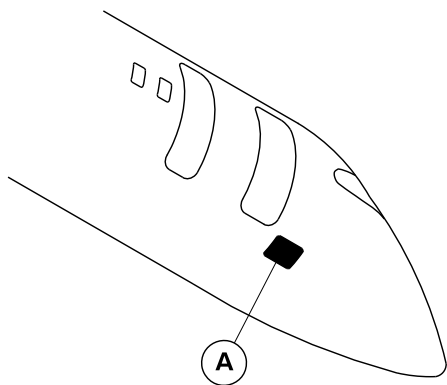
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Forward Center Fuselage Access Panels  
Figure 5

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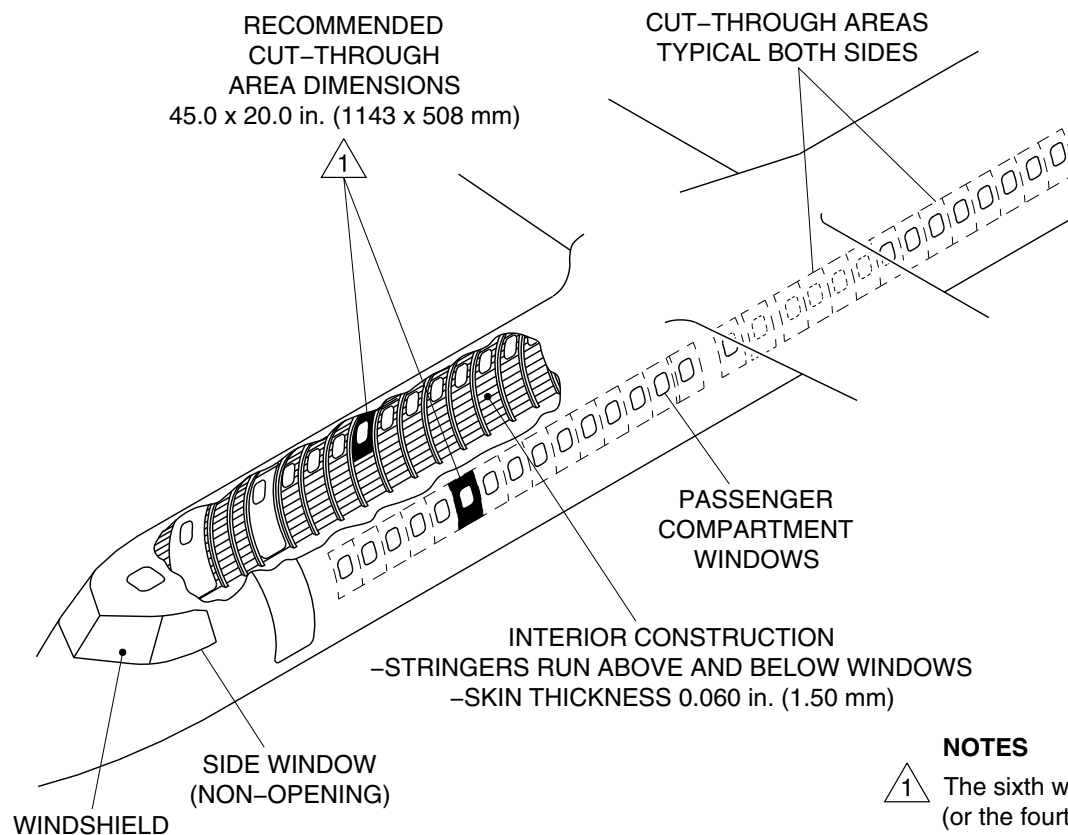
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DE HAVILLAND AIRCRAFT  
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## AIRCRAFT MAINTENANCE MANUAL – SYSTEM DESCRIPTION SECTION



### NOTES

- 1 The sixth window aft of the forward passenger door (or the fourth window aft of the type II/III emergency exit on the right side) are the recommended first choice cut-through areas.
2. Any window is suitable in extreme circumstances.

fsh86a01.dg, vn, apr07/2011

Forward Center Fuselage Cut Through Panels  
Figure 6

PSM 1-84-2A  
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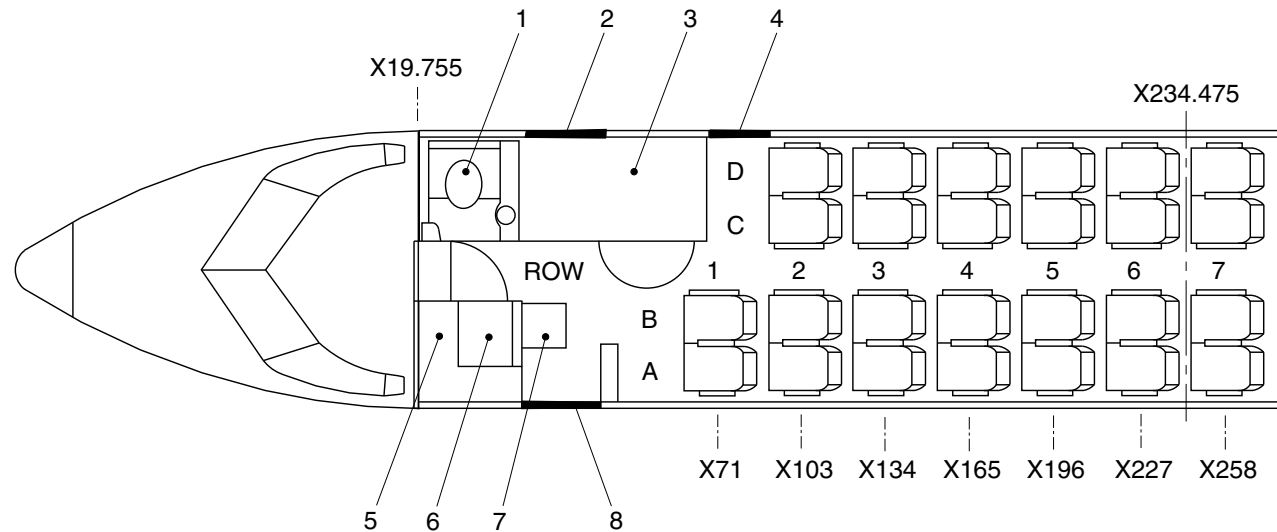
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## AIRCRAFT MAINTENANCE MANUAL – SYSTEM DESCRIPTION SECTION



**STANDARD INTERIOR CONFIGURATION**

### LEGEND

1. Lavatory.
2. Forward baggage door.
3. Forward baggage compartment.
4. Emergency door – type II / III exit.
5. Avionics rack.
6. Wardrobe.
7. No.1 cabin attendant seat.
8. Forward passenger door – type I exit.

fsh85a01.dg, vn, apr07/2011

Forward Center Fuselage Floor Layout  
Figure 7

PSM 1-84-2A  
EFFECTIVITY:  
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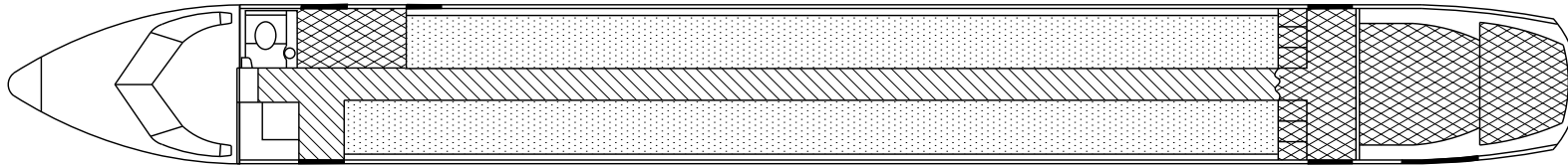
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




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## AIRCRAFT MAINTENANCE MANUAL – SYSTEM DESCRIPTION SECTION



### LEGEND

-  Floor panels stressed for 37.5 lb/ft<sup>2</sup>. (1.8 kN/m<sup>2</sup>).
-  Floor panels stressed for 75.0 lb/ft<sup>2</sup>. (3.6 kN/m<sup>2</sup>).
-  Floor panels stressed for 125.0 lb/ft<sup>2</sup>. (6.0 kN/m<sup>2</sup>).

cg4023a01.dg, vn/ak, jul24/2015

Forward Center Fuselage Floor Panel Stress Loading  
Figure 8

PSM 1-84-2A  
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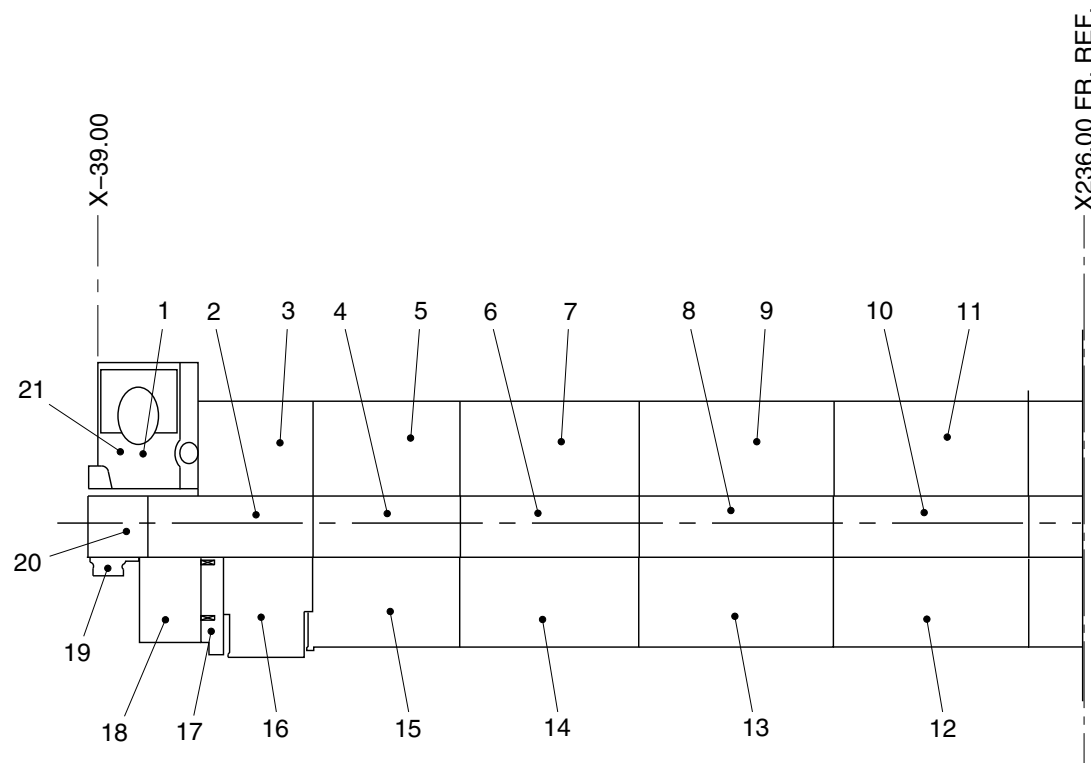
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### LEGEND

- |              |               |
|--------------|---------------|
| 1. Lavatory. | 12. 131GZ.    |
| 2. 133BZ.    | 13. 131FZ.    |
| 3. 132AZ.    | 14. 131EZ.    |
| 4. 133CZ.    | 15. 131DZ.    |
| 5. 132BZ.    | 16. 131CZ.    |
| 6. 133DZ.    | 17. 131BZ.    |
| 7. 132CZ.    | 18. Wardrobe. |
| 8. 133EZ.    | 19. 131AZ.    |
| 9. 132DZ.    | 20. 133AZ.    |
| 10. 133FZ.   | 21. 134AZ.    |
| 11. 132EZ.   |               |

fsj03a01.dg, vn, apr07/2011

Forward Center Fuselage Floor Panel Numbers and Locations  
Figure 9

PSM 1-84-2A  
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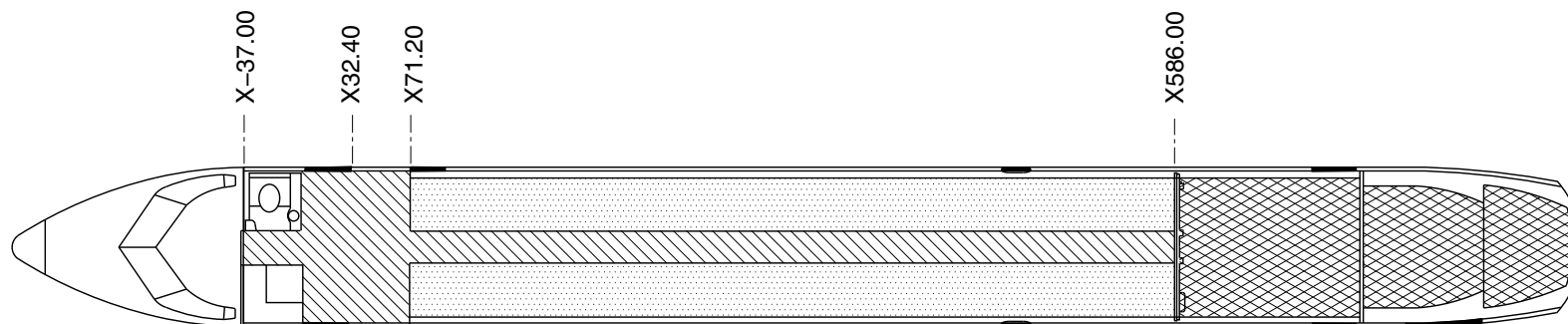
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




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## AIRCRAFT MAINTENANCE MANUAL – SYSTEM DESCRIPTION SECTION



### LEGEND

-  Floor panels stressed for 37.5 lb/ft<sup>2</sup>. (1.8 kN/m<sup>2</sup>).
-  Floor panels stressed for 75.0 lb/ft<sup>2</sup>. (3.6 kN/m<sup>2</sup>).
-  Floor panels stressed for 125.0 lb/ft<sup>2</sup>. (6.0 kN/m<sup>2</sup>).

cg3970a01.dg, ak, jul23/2015

Forward Center Fuselage Floor Panel Stress Loading  
Figure 10

PSM 1-84-2A  
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**AIRCRAFT MAINTENANCE MANUAL – SYSTEM DESCRIPTION SECTION**

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## AIRCRAFT MAINTENANCE MANUAL – SYSTEM DESCRIPTION SECTION

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**53–30–00–001**

### MIDDLE CENTER FUSELAGE

#### Introduction

The middle center fuselage is a part of the main fuselage which forms the primary structure of the aircraft.

#### General Description

The fuselage is a semi-monocoque structure with skin reinforced by circumferential frames and longitudinal stringers. The primary structures in the fuselage are the stringers, frames and aircraft skin. The fuselage structure is made of high strength aluminum alloys (2024 and 7075).

A protective coating along the bottom of the fuselage is applied for protection from unpaved runways. One layer of F22 epoxy-polyamide enamel and two layers of corrosion preventive compound (F13) are applied to get an erosion resistant protective coating.

The middle center fuselage has these components:

- Middle Center Fuselage Access Panels (53–31–00)
- Fuselage to Wing Fairing (53–32–00)
- Middle Center Fuselage Floor (53–33–00)
- Middle Center Fuselage Surfaces (53–34–00).

#### Detailed Description

[Refer to Figure 1.](#)

The middle center fuselage extends from the forward center fuselage section (Sta.X234.475) to the aft center fuselage section (Sta.X566.025). The part of the center fuselage forms the majority of the passenger area of the aircraft. It is largely of a constant circular cross section of 106 in. (2.7 m) outer diameter with a flat bottom of larger radius. Extensive use is made of flush riveting of stringers and window reinforcements to the skin.

The middle center fuselage consist of :

- Wing/Fuselage Joint, Front Strut
- Wing/Fuselage Joint, Rear Strut
- Wing/Fuselage Joint, Frame for Front Spar
- Wing/Fuselage Joint, Frame for Rear Spar.

[Refer to Figure 2.](#)

An under-galley drainage trough and fluid deflector collector system is installed from Sta. X49.500 to Sta. X388.000. Fluid spills around the galley are drained by underfloor drain channels to the bottom of the aircraft and then removed by automatic drain valves.

The wing structure is attached to fittings on the center section with tension bolts. Floor loads are held by the seat rails and frames. The floor structure make the airframe stable if there is a wheels-up landing.

The ice shields are installed on the left and right sides of the center fuselage. These are installed on the plane of the propellers to protect the fuselage pressure shell from damage due to the impact of ice thrown from the propellers.

PSM 1–84–2A

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## AIRCRAFT MAINTENANCE MANUAL – SYSTEM DESCRIPTION SECTION

On aircraft with IS4Q5350010 incorporated, an additional ice shield extension is installed on the left side of the middle center fuselage surface, aft of the main ice shield.

### **Middle Center Fuselage Access Panels**

Refer to Figures 3 and 4.

There are thirty-five access panels on the wing to fuselage fairing. There are thirteen panels on the forward fairing, five panels on each side of the center (under wing) fairing, and twelve panels on the aft fairing. The panels give access to the inner side of the fairing for maintenance purposes.

### **Fuselage to Wing Fairing**

Refer to Figures 3 and 5.

The fuselage to wing fairing includes the forward, center (under wing), and aft wing to fuselage fairings.

The forward wing to fuselage fairing is attached to the top surface of the wing and the top of the fuselage forward of Sta. 376. This fairing gives an aerodynamically smooth surface to the area where the wing joins the fuselage. The forward wing to fuselage fairing is made up of composite fairings and panels.

The center (under wing) fuselage fairing is attached to the wing lower surface and to the fuselage below the wing. The center fuselage fairing gives an aerodynamically smooth surface. The center fuselage fairing is located from Sta. 376 to 424 left and right side underwing. The center fuselage fairing is made up of fairings and panels made from composite materials.

The aft wing to fuselage fairing is attached to the top surface of the wing and the top of the fuselage. The aft wing to fuselage fairing gives an aerodynamically smooth surface. The aft wing to fuselage fairing is located aft of Sta. 424 overwing. The aft wing to fuselage fairing is made up of fairings and panels made from composite materials.

### **Center Fuselage Floor**

Refer to Figure 7.

There are two types of floor panels that may be installed in the passenger compartment. Type 1 or Type 2 panels may be installed, dependent on the cabin interior noise and vibration levels, the required stress resistance and the area in which they are fitted.

#### **COMP 27 Type 1**

Floor panels used under the seats are made of unidirectional carbon/phenolic faces and aramid honeycomb core. These panels withstand stress of 37.5 lb/ft<sup>2</sup> (1.8 kN/m<sup>2</sup>).

#### **COMP 27 Type 2**

Floor panels used in the center aisle are sandwich construction with unidirectional carbon/phenolic faces and aramid honeycomb core. These panels withstand stress of 75 lb/ft<sup>2</sup> (3.6 kN/m<sup>2</sup>).

#### **COMP 28 Type 1**

Floor panels used in the cabin entry way area are sandwich construction with unidirectional S-glass/epoxy faces and aramid



## AIRCRAFT MAINTENANCE MANUAL – SYSTEM DESCRIPTION SECTION

honeycomb core. These panels withstand stress of 75 lb/ft<sup>2</sup> (3.6 kN/m<sup>2</sup>).

[Refer to Figure 8.](#)

On aircraft with modsum 4–459222 incorporated, COMP 27 TYPE 3 floor panels are installed in the middle center passenger compartment.

### COMP 27 Type 3

Floor Panels used under the seats are made of unidirectional carbon/phenolic faces and the aramid honeycomb core. These panels withstand stress of 37.5 lb/ft<sup>2</sup> (1.8 kN/m<sup>2</sup>).

### COMP 27 Type 3

Floor Panels used in the center aisle between the stations X71.20 and X584.50 are sandwich construction with unidirectional carbon/phenolic faces and the aramid honeycomb core. These panels withstand stress of 75 lb/ft<sup>2</sup> (3.6 kN/m<sup>2</sup>).

### Middle Center Fuselage Surfaces

[Refer to Figure 6.](#)

The ice shields are installed on the left and right sides of the middle center fuselage surfaces. These shields are installed on the plane of the propellers to protect the fuselage pressure shell from damage due to ice being thrown from the propellers.

On aircraft with IS4Q5350010 incorporated, an additional ice shield extension is installed on the left side of the middle center fuselage surface, aft of the main ice shield.

### Middle Center Fuselage Drain System

[Refer to Figure 9.](#)

To prevent the accumulation of the hydraulic fluids or water in the fuselage, there are four drains located on the belly of the aircraft under the wing between the stations X401.0 and X469.5.

The LH and RH forward drain holes drain the fluids from the general wing root areas. This could be hydraulic fluid from a system leak or rain water if there is leakage through the panels. The forward drains collect fluid from a channel behind the wing root panels.

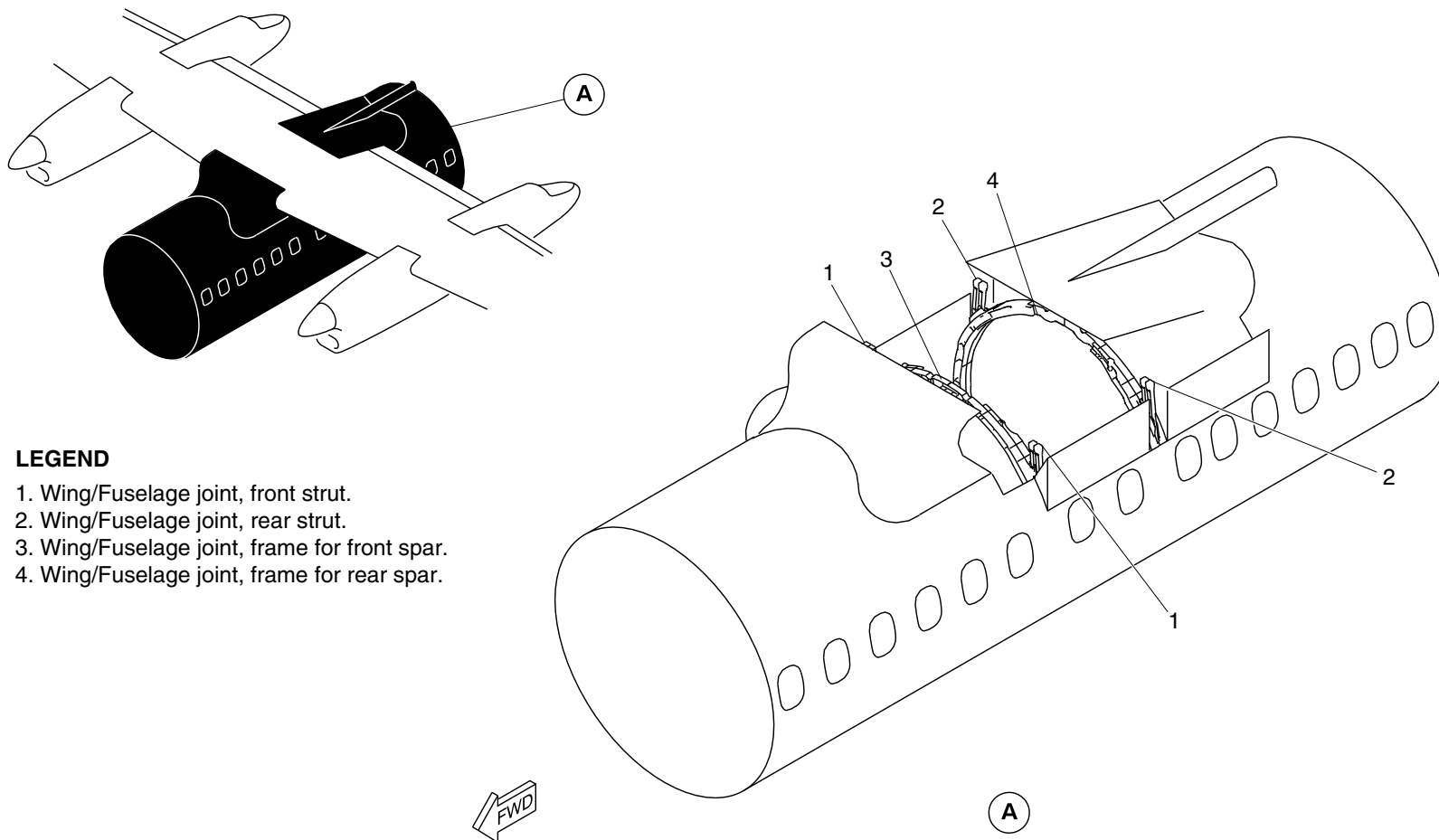
The LH aft drain collects case drain fluid from the Hydraulic Balance Relief Valve. The RH aft drain collects hydraulic fluid from the Power Transfer Unit (PTU) case drain and from the Flap Power Unit (FPU) case drain.





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## AIRCRAFT MAINTENANCE MANUAL – SYSTEM DESCRIPTION SECTION



### LEGEND

1. Wing/Fuselage joint, front strut.
2. Wing/Fuselage joint, rear strut.
3. Wing/Fuselage joint, frame for front spar.
4. Wing/Fuselage joint, frame for rear spar.

fs886a01.dg, ck, sep19/2011

Middle Center Fuselage Locator  
Figure 1

PSM 1-84-2A  
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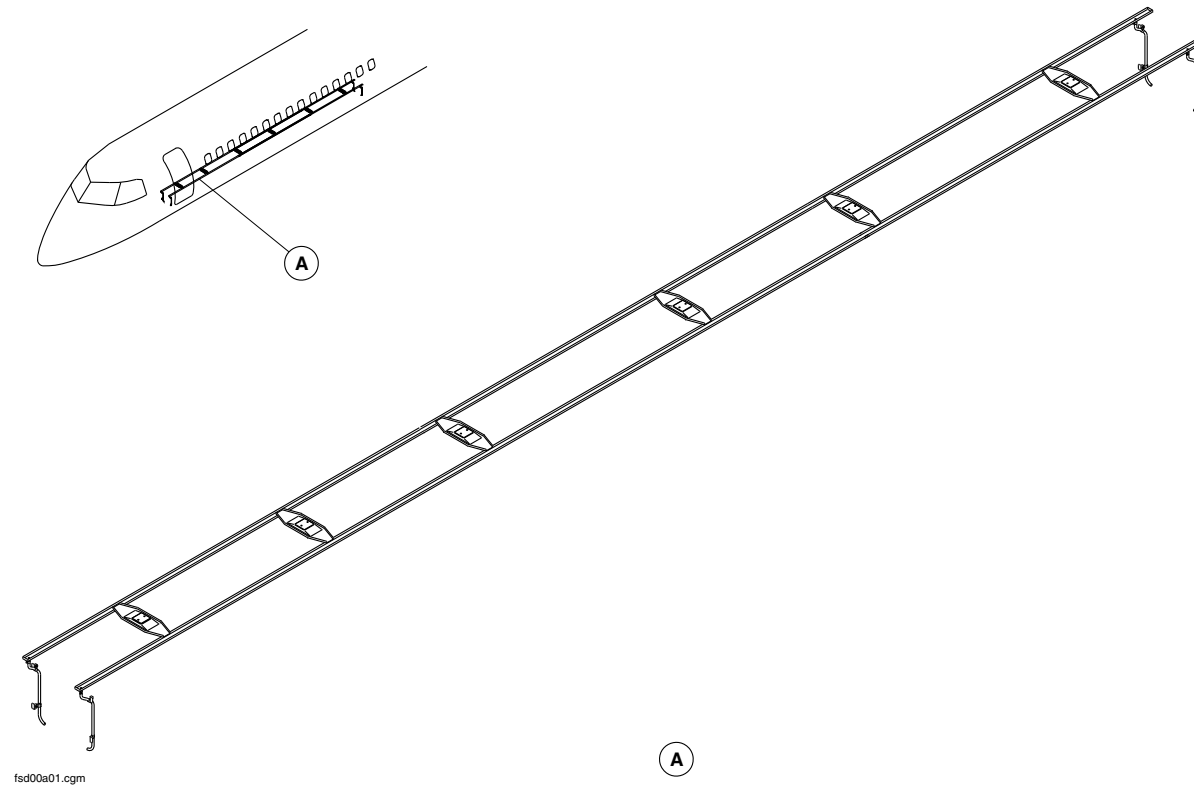
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MIDDLE CENTER FUSELAGE / DRAINAGE TROUGHS LOCATOR  
Figure 2

PSM 1-84-2A  
EFFECTIVITY:  
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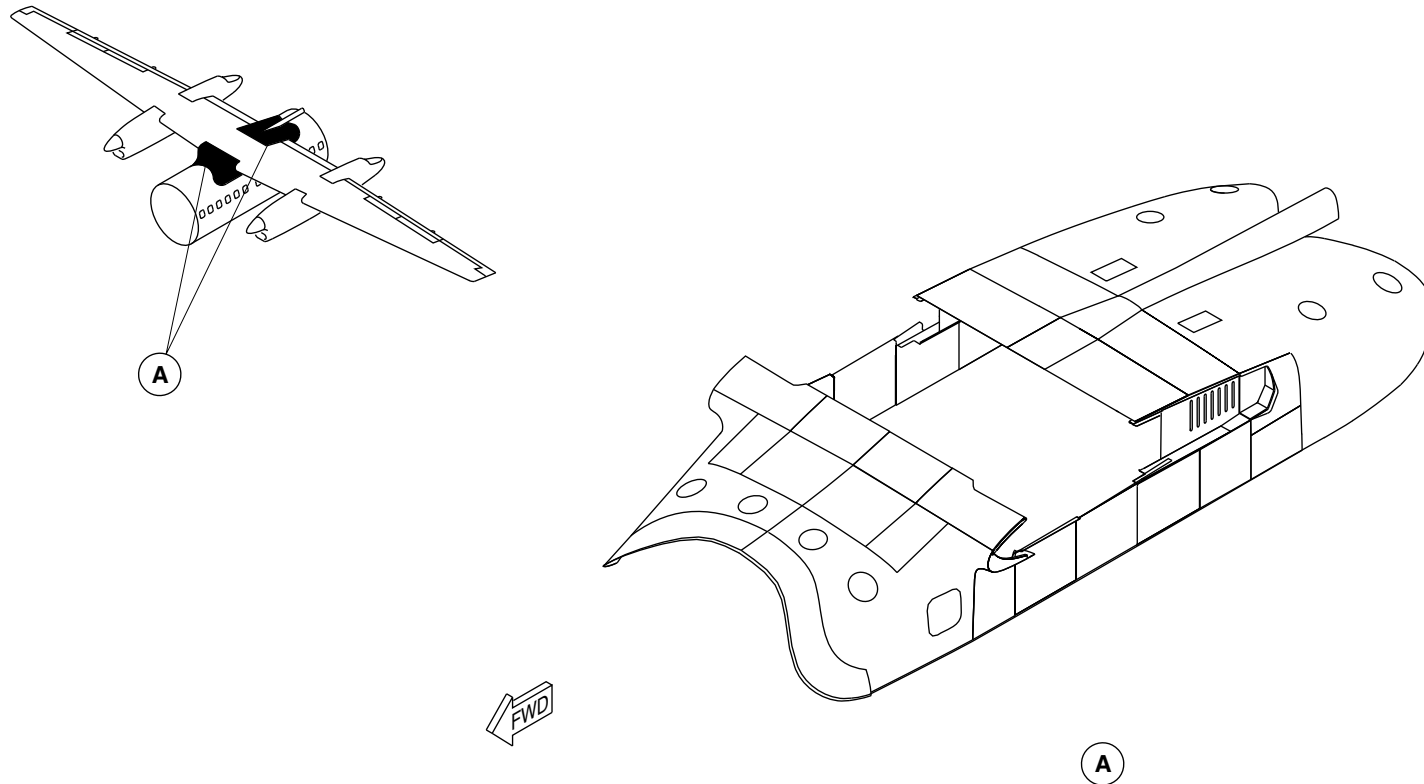
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fs872a01.cgm

FUSELAGE TO WING FAIRING LOCATOR  
Figure 3

PSM 1-84-2A  
EFFECTIVITY:  
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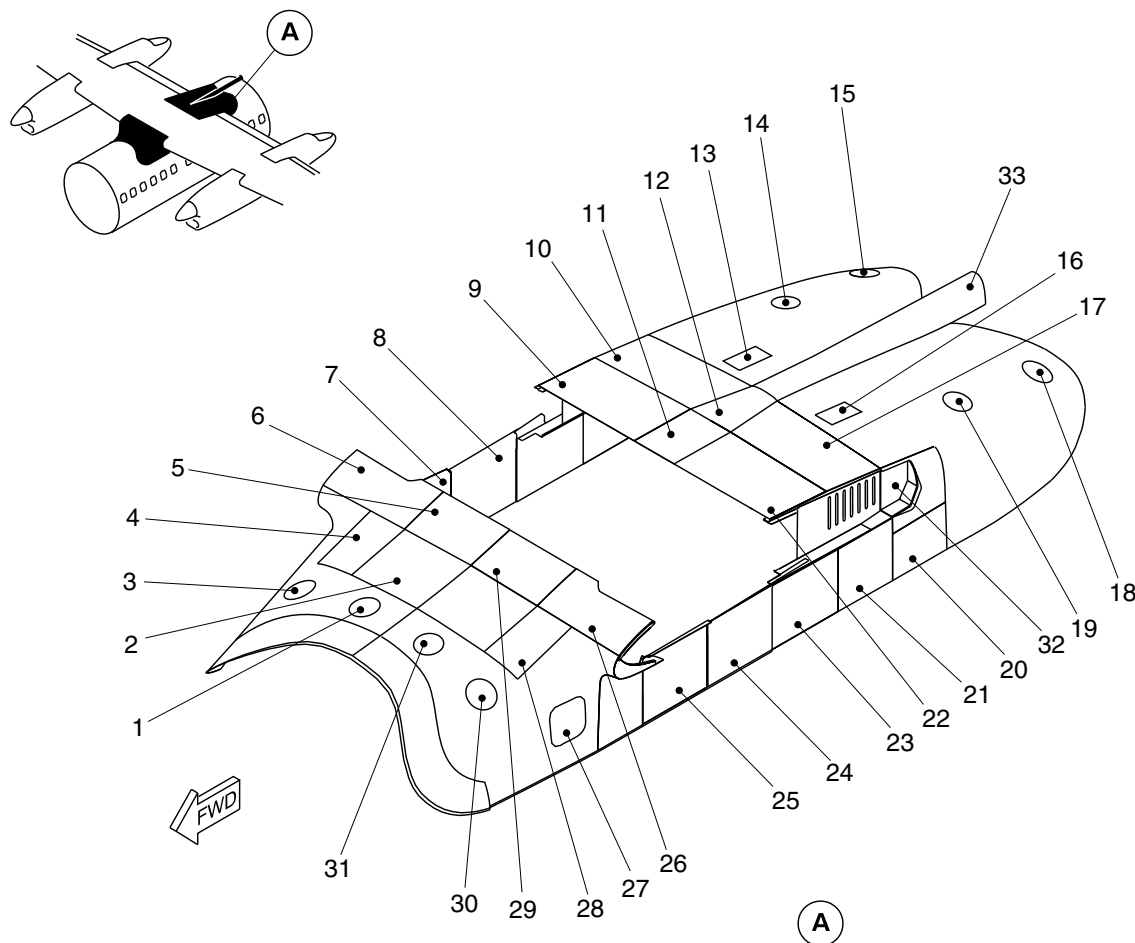
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### LEGEND

- |            |                  |
|------------|------------------|
| 1. 261GT.  | 17. 262BT.       |
| 2. 261ET.  | 18. 262ET.       |
| 3. 261JT.  | 19. 262DT.       |
| 4. 261KT.  | 20. 262NL/262NR. |
| 5. 261HT.  | 21. 263DL/264DR. |
| 6. 261LT.  | 22. 262AT.       |
| 7. 264AR.  | 23. 263CL/264CR. |
| 8. 263BR.  | 24. 263BL.       |
| 9. 262HT.  | 25. 263AL.       |
| 10. 262JT. | 26. 261CT.       |
| 11. 262FT. | 27. 261ML/261MR. |
| 12. 262GT. | 28. 261BT.       |
| 13. 262KT. | 29. 261FT.       |
| 14. 262LT. | 30. 261AT.       |
| 15. 262MT. | 31. 261DT.       |
| 16. 262CT. | 32. 265AL/266AR. |
|            | 33. 351AL.       |

fs873a01.dg, ck, sep19/2011

Middle Center Fuselage / Access Panels  
Figure 4

PSM 1-84-2A  
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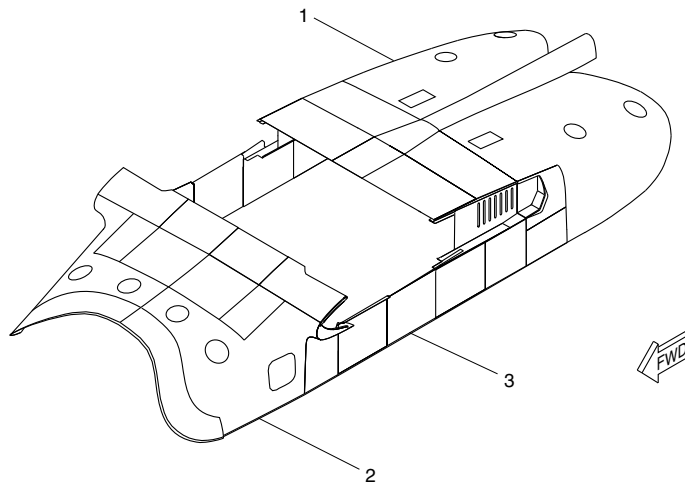
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## AIRCRAFT MAINTENANCE MANUAL – SYSTEM DESCRIPTION SECTION



### LEGEND

1. Fuselage to Wing Aft Fairing.
2. Fuselage to Wing Forward Fairing.
3. Fuselage to Wing Center Fairing.

fse03a01.cgm

FUSELAGE TO WING FAIRING DETAIL  
Figure 5

PSM 1-84-2A  
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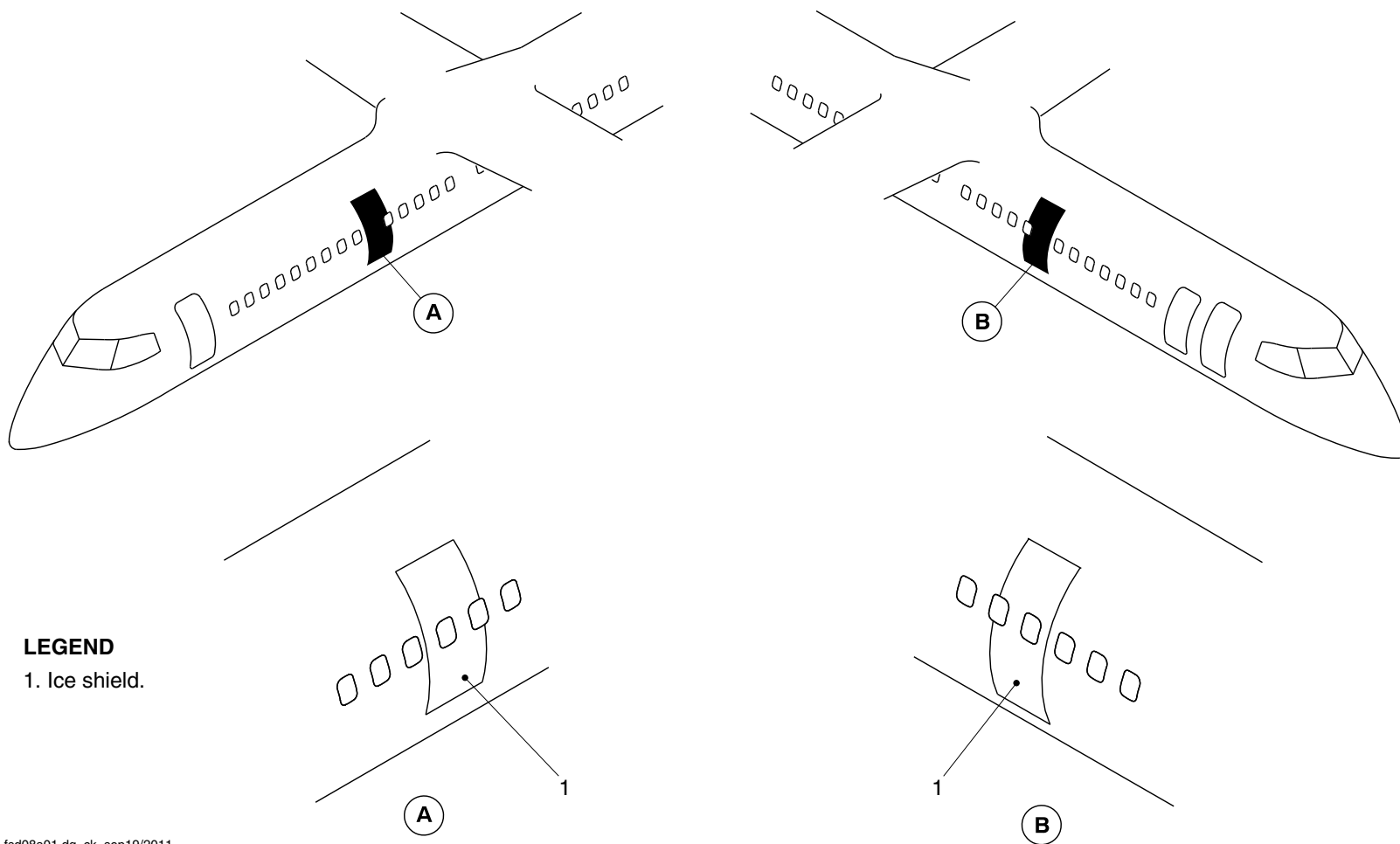
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fsd08a01.dg, ck, sep19/2011

Middle Center Fuselage / Surfaces  
Figure 6 (Sheet 1 of 2)

PSM 1-84-2A  
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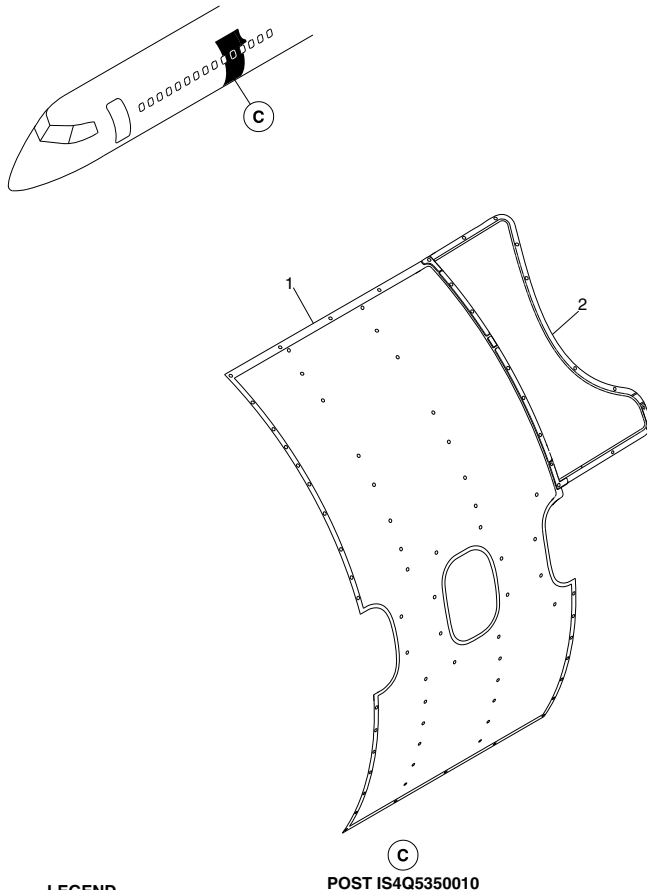
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### LEGEND

- 1. Ice shield.
- 2. Ice shield extension.

Isd06a02.dwg, rev. nov07/2012

Middle Center Fuselage / Surfaces  
Figure 6 (Sheet 2 of 2)

PSM 1-84-2A  
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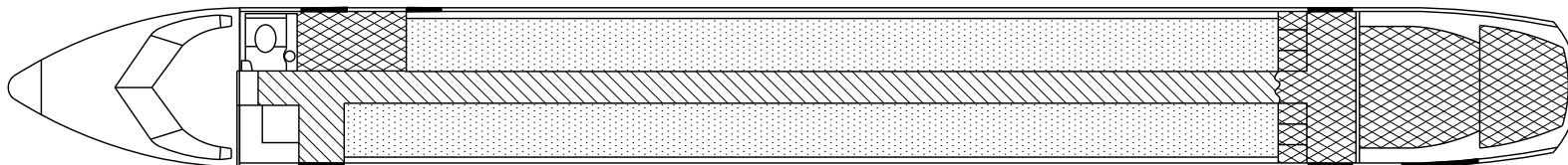
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




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## AIRCRAFT MAINTENANCE MANUAL – SYSTEM DESCRIPTION SECTION



### LEGEND

-  Floor panels stressed for 37.5 lb/ft<sup>2</sup>. (1.8 kN/m<sup>2</sup>).
-  Floor panels stressed for 75.0 lb/ft<sup>2</sup>. (3.6 kN/m<sup>2</sup>).
-  Floor panels stressed for 125.0 lb/ft<sup>2</sup>. (6.0 kN/m<sup>2</sup>).

brbu33a01.dg, kmw, sep14/2015

Middle Center Fuselage Floor Panel Stress Loading  
Figure 7

PSM 1-84-2A  
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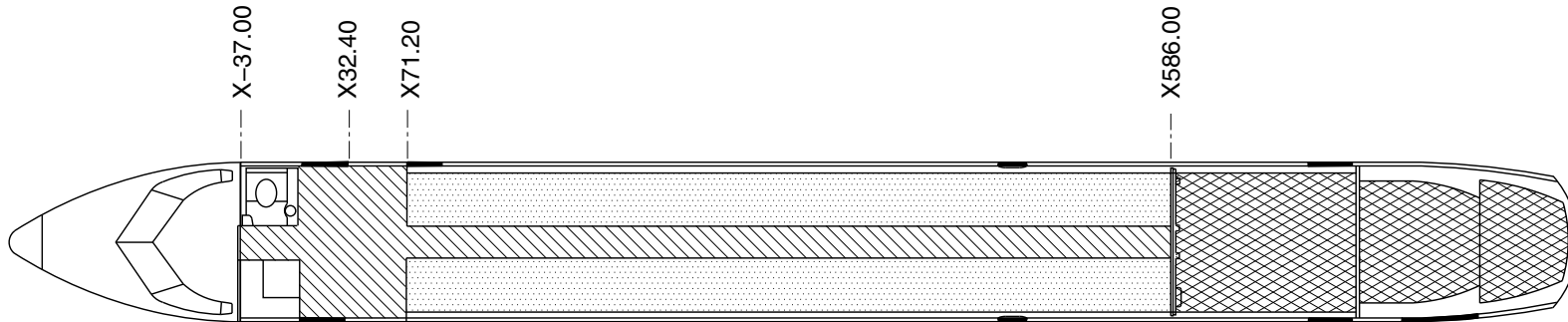
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## AIRCRAFT MAINTENANCE MANUAL – SYSTEM DESCRIPTION SECTION



### LEGEND

-  Floor panels stressed for 37.5 lb/ft<sup>2</sup>. (1.8 kN/m<sup>2</sup>).
-  Floor panels stressed for 75.0 lb/ft<sup>2</sup>. (3.6 kN/m<sup>2</sup>).
-  Floor panels stressed for 125.0 lb/ft<sup>2</sup>. (6.0 kN/m<sup>2</sup>).

cg4063a01.dg, ak, aug13/2015

Middle Center Fuselage Floor Panel Stress Loading  
Figure 8

PSM 1-84-2A  
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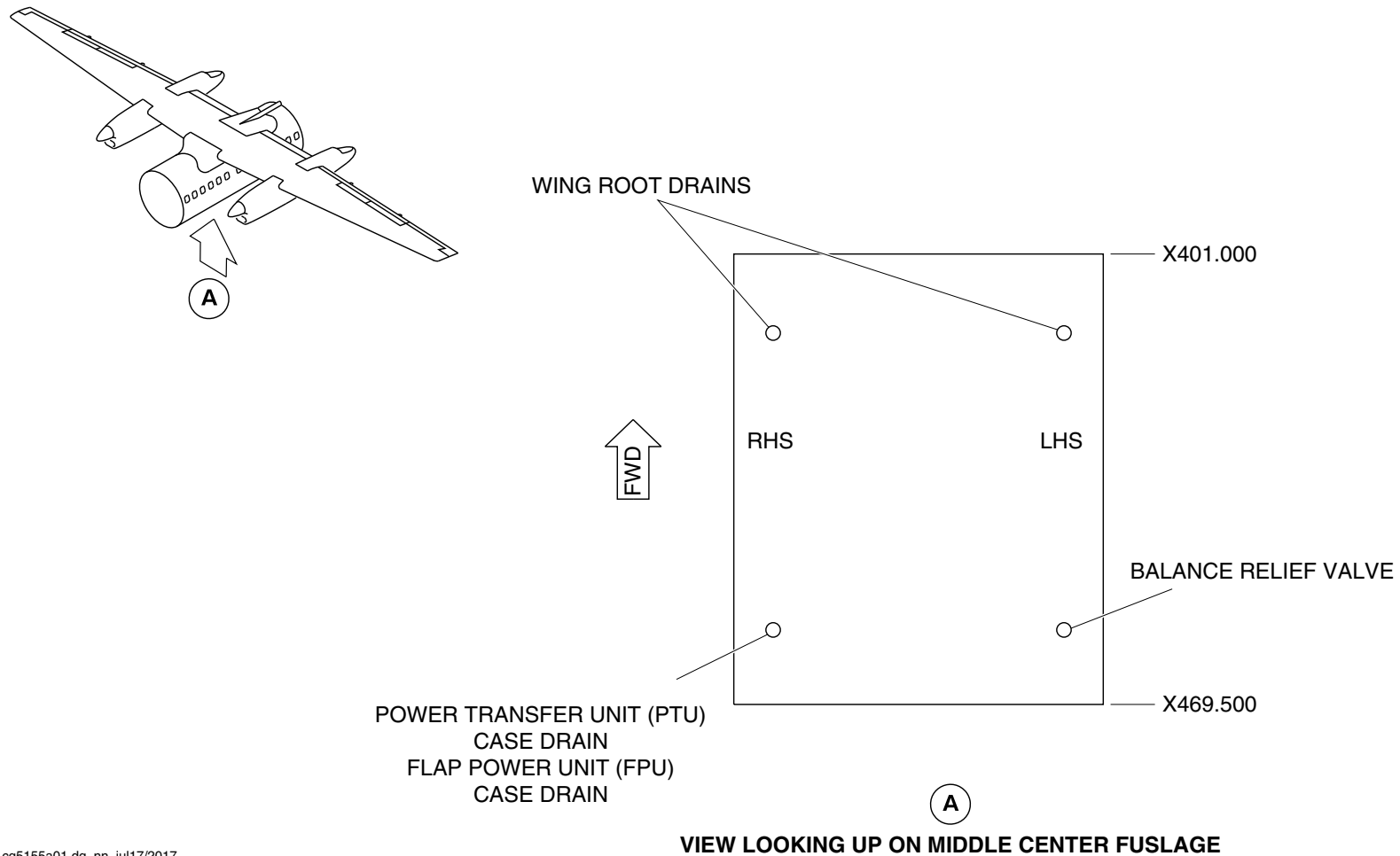
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## AIRCRAFT MAINTENANCE MANUAL – SYSTEM DESCRIPTION SECTION



cg5155a01.dg, nn, jul17/2017

Drain System Middle Center Fuselage  
Figure 9

PSM 1-84-2A  
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## AIRCRAFT MAINTENANCE MANUAL – SYSTEM DESCRIPTION SECTION

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**53-40-00-001**

### **AFT CENTER FUSELAGE**

#### **Introduction**

The aft center fuselage is a part of the main fuselage which forms the primary structure of the aircraft.

#### **General Description**

The fuselage is a semi-monocoque structure with skin reinforced by circumferential frames and longitudinal stringers. The primary structures in the fuselage are the stringers, frames and aircraft skin. The fuselage structure is made of high strength aluminum alloys (2024 and 7075).

A protective coating along the bottom of the fuselage is applied for protection from unpaved runways. One layer of F22 epoxy-polyamide enamel and two layers of corrosion preventive compound (F13) are applied to get an erosion resistant protective coating.

The aft center fuselage has these components:

- Aft Center Fuselage Floor (53-41-00)
- Aft Center Fuselage Dorsal Fairing (53-42-00)

#### **Detailed Description**

[Refer to Figure 1.](#)

The aft center fuselage extends from the middle center fuselage section (Sta.X564.500) to the aft fuselage section (Sta.X836.452). The part of the center fuselage forms the majority of the passenger area of the aircraft. It is largely of a constant circular cross section of 106 in. (2.7 m) outer diameter with a flat bottom of larger radius. Extensive use is made of flush riveting of stringers and window reinforcements to the skin. This gives minimum weight to permit a smooth riveted external surface. This also stops crack propagation.

#### **AFT Center Fuselage**

[Refer to Figure 2.](#)

[Refer to Figure 3.](#)

Extensive use is made of riveting of stringers and window reinforcements to the skin. This gives minimum weight to permit a smooth riveted external surface. This also stops crack propagation

#### **Aft Center Fuselage Dorsal Fairing**

[Refer to Figure 4.](#)

The fuselage fairing is attached to the top surface of the fuselage. This fairing gives an aerodynamically smooth surface from the wing area to where the aft dorsal fairing. The aft wing to fuselage fairing is made up of fairings and panels made from composite materials.



## AIRCRAFT MAINTENANCE MANUAL – SYSTEM DESCRIPTION SECTION

### **Aft Center Fuselage "Cut Through" Panels**

Refer to Figure 5.

The sixth window aft of the forward passenger door (or the forth window aft of the Type 11/111 emergency exit on the right side) are the recommended first choice cut-through areas. Note: any window is suitable in extreme circumstances.

"Cut-through" areas require portable metal cutting equipment. It is recommended that major effort is used to gain access to doors and hatches due to the type of structure and possible injury to personnel within.

### **Aft Center Fuselage Floor**

Refer to Figure 6.

Refer to Figure 7.

Refer to Figure 8.

The aft center fuselage forms the horizontal base of the passenger and attendant area. It is largely of a constant with a flat bottom cross section of 80 in. (2032 mm).

Floor loads are held by the seat rails and frames. The floor structure makes the airframe stable if there is a wheels-up landing.

Floor coverings in the passenger compartment use an anti-static filament in the carpet weave. Floor coverings in and ahead of the airstair door entrance way is a foam backed vinyl. Floor panels in the entrance way are sealed with vinyl tape and caulking to prevent moisture from going below the floor level.

There are two types of floor panels installed in the passenger compartment. Type 1 or Type 2 panels may be installed, dependent on the cabin interior noise and vibration levels, the required stress resistance and the area in which they are fitted.

#### COMP 27 Type 1

Floor panels used under the seats are made of unidirectional carbon/phenolic faces and aramid honeycomb core. These panels withstand stress of 37.5 lb/ft<sup>2</sup> (1.8 kN/m<sup>2</sup>).

#### COMP 27 Type 2

Floor panels used in the center aisle are sandwich construction with unidirectional carbon/phenolic faces and aramid honeycomb core. These panels withstand stress of 75 lb/ft<sup>2</sup> (3.6 kN/m<sup>2</sup>).

#### COMP 28 Type 1

Floor panels used in the cabin entry way area are sandwich construction with unidirectional S-glass/epoxy faces and aramid honeycomb core. These panels withstand stress of 75 lb/ft<sup>2</sup> (3.6 kN/m<sup>2</sup>).

#### COMP 28 Type 2

Floor panels used in the galley and lavatory areas are sandwich construction with unidirectional S-glass/epoxy faces and aramid honeycomb core. These panels absorb moisture with negligible mechanical property degradation and withstand stress of 125 lb/ft<sup>2</sup> (6.0 kN/m<sup>2</sup>).

Floor panels used in the entrance areas are sandwich construction with unidirectional fiberglass faces and aramid honeycomb core. These panels are stronger and prevent moisture absorption and withstand stress of 75 lb/ft<sup>2</sup> (3.6 kN/m<sup>2</sup>).



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Floor panels used in the baggage compartments areas are sandwich construction with unidirectional fiberglass faces with a polyester overlay and aramid honeycomb core. These panels are stronger and prevent wear with negligible mechanical property degradation and withstand stress of 125 lb/ft<sup>2</sup> (6.0 kN/m<sup>2</sup>).

Refer to Figure 9.

On aircraft with Modsum 4–459222 incorporated there are two types of floor panels that are installed in the passenger compartment and aft cargo compartment. Type 1, Type 3 and Type 6 panels are used in the passenger compartment. Type 2, Type 3 and Type 4 panels are used in the aft cargo compartment.

### COMP 27 Type 3

Floor Panels used under the seats are made of unidirectional carbon/phenolic faces and the aramid honeycomb core. These panels withstand stress of 37.5 lb/ft<sup>2</sup> (1.8 kN/m<sup>2</sup>).

### COMP 27 Type 3

Floor Panels used in the center aisle between the stations X71.20 and X584.50 are sandwich construction with unidirectional carbon/phenolic faces and the aramid honeycomb core. These panels withstand stress of 75 lb/ft<sup>2</sup> (3.6 kN/m<sup>2</sup>).

### COMP 28 Type 1

Floor Panels used in the cabin entry way area and in the C1A wardrobe area are sandwich construction with unidirectional S–glass/epoxy faces and the aramid honeycomb core. These panels withstand stress of 75 lb/ft<sup>2</sup> (3.6 kN/m<sup>2</sup>).

### COMP 28 Type 3

Floor panels used in the galley and the lavatory areas are sandwich construction with unidirectional S–glass/epoxy faces and the aramid honeycomb core. These panels absorb moisture with negligible mechanical property degradation and withstand stress of 75 lb/ft<sup>2</sup> (3.6 kN/m<sup>2</sup>).

### COMP 28 Type 2, Type 3 and Type 4

Floor panels used in the aft cargo compartment areas are sandwich construction with unidirectional fiberglass faces with a polyester overlay and the aramid honeycomb core. These panels are stronger and prevent wear with negligible mechanical property degradation and withstand stress of 125 lb/ft<sup>2</sup> (6.0 kN/m<sup>2</sup>).

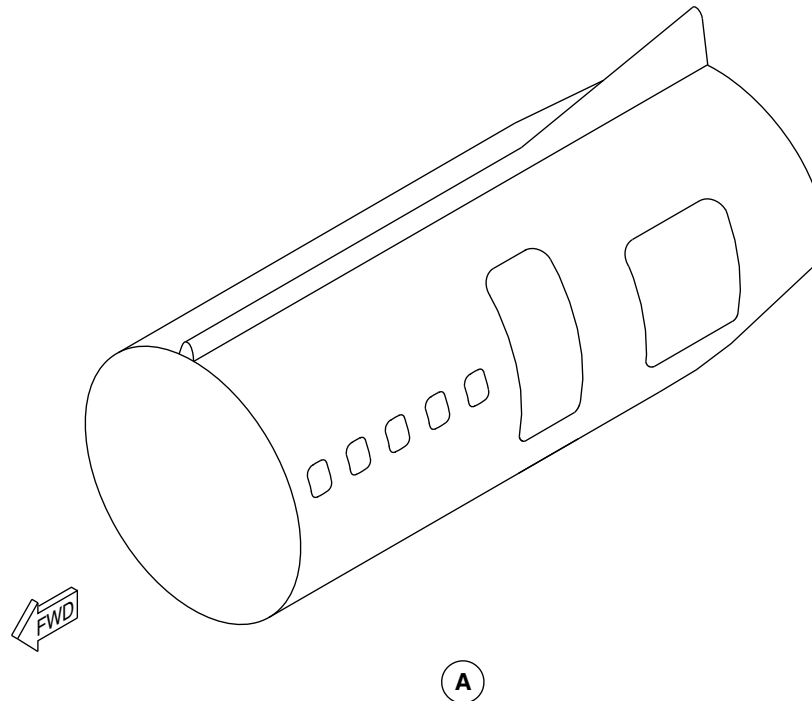
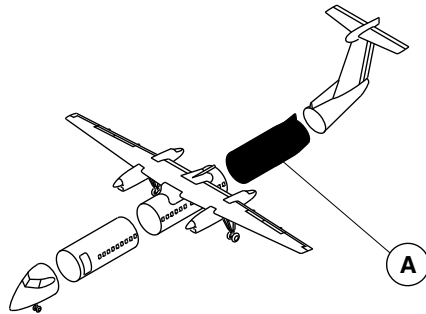
### COMP 28 Type 6

Floor Panels used in the center aisle between the stations X–37.00 and X71.20 are sandwich construction with unidirectional carbon/phenolic faces and the aramid honeycomb core. These panels withstand stress of 75 lb/ft<sup>2</sup> (3.6 kN/m<sup>2</sup>).



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AFT CENTER FUSELAGE LOCATOR  
Figure 1

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EFFECTIVITY:  
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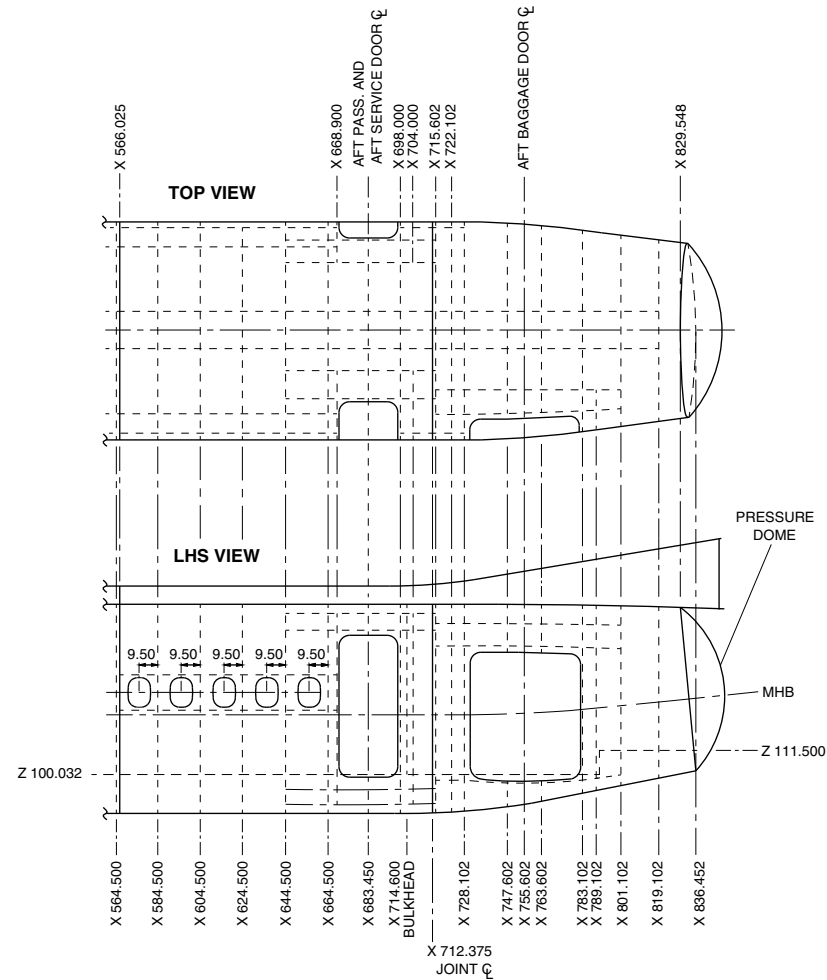
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## AIRCRAFT MAINTENANCE MANUAL – SYSTEM DESCRIPTION SECTION



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AFT CENTRE FUSELAGE DIMENSIONS  
Figure 2

PSM 1-84-2A  
EFFECTIVITY:  
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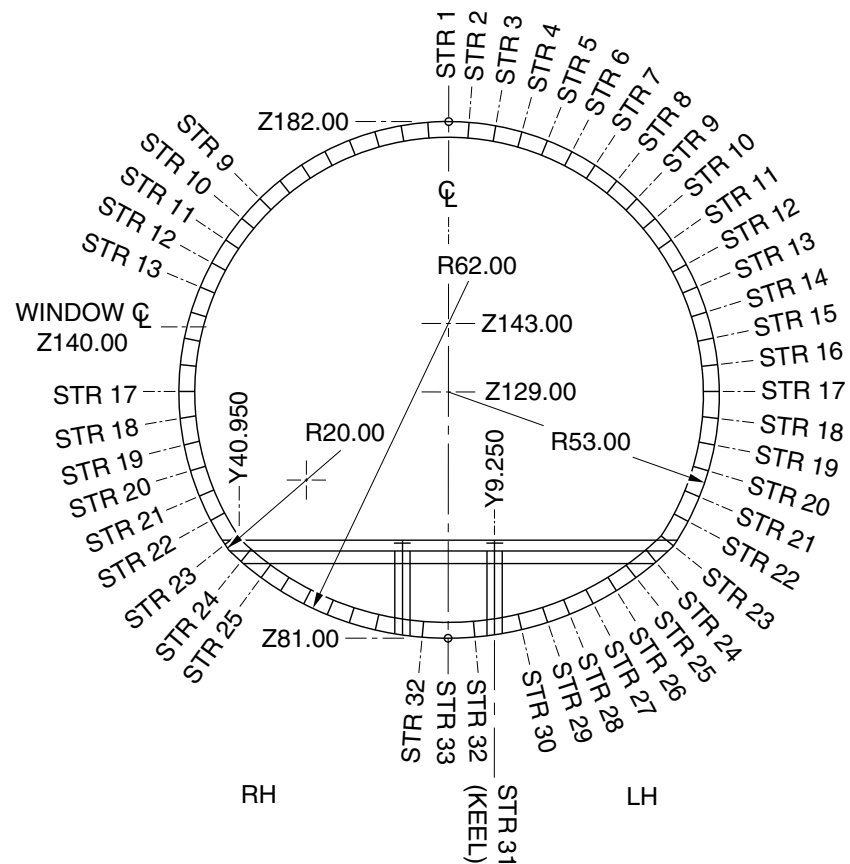
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TYPICAL SECTION THROUGH  
CENTER FUSELAGE

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Aft Center Fuselage Floor Cross Section Dimensions  
Figure 3

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EFFECTIVITY:  
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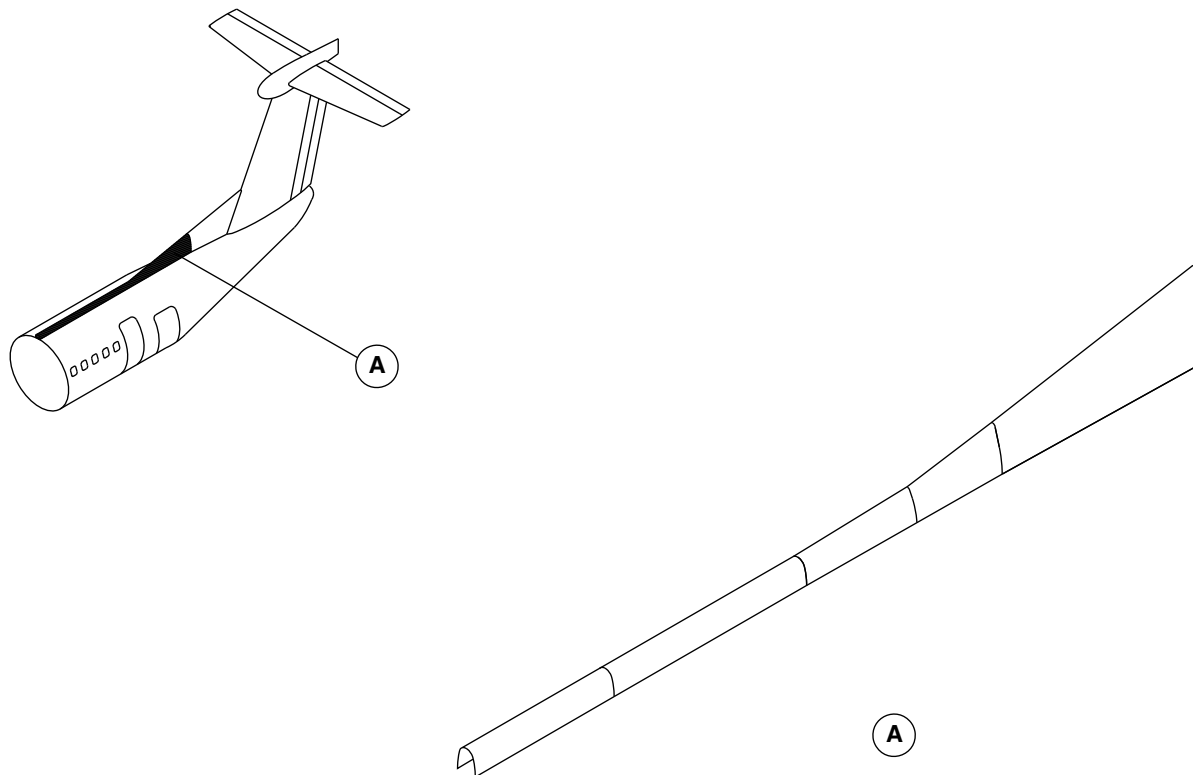
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AFT CENTER FUSELAGE DORSAL FIN  
Figure 4

PSM 1-84-2A  
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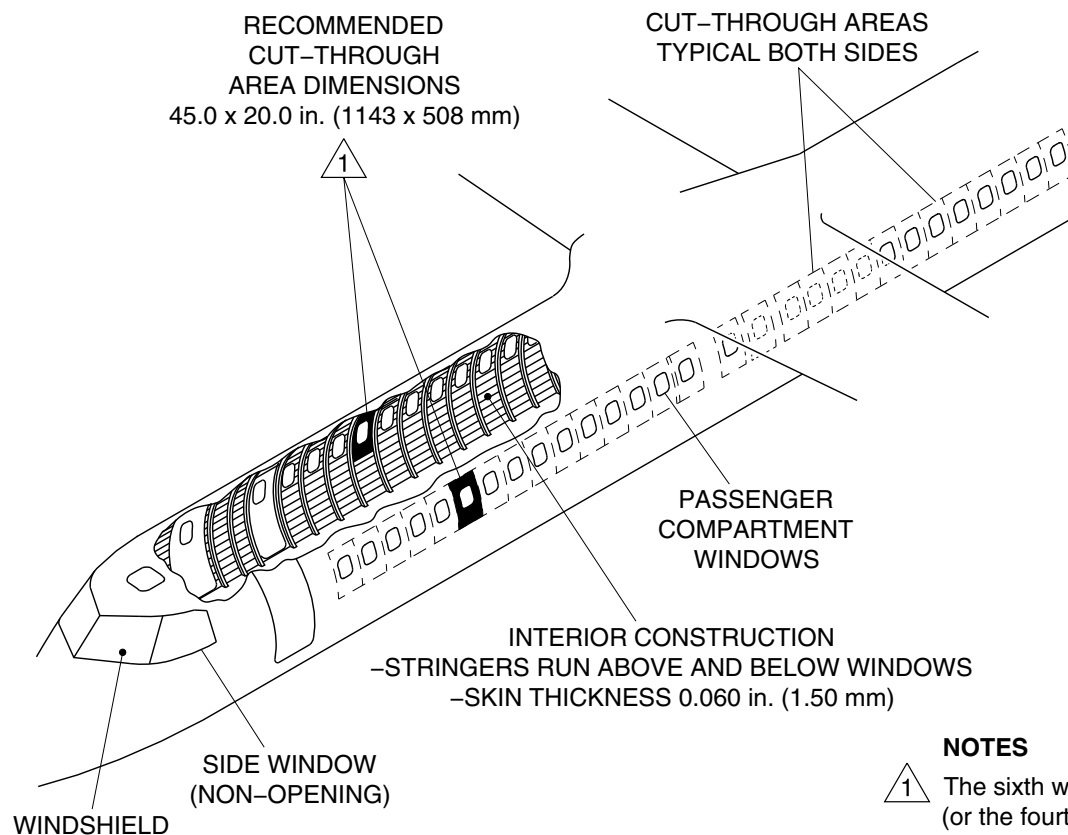
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### NOTES

- 1 The sixth window aft of the forward passenger door (or the fourth window aft of the type II/III emergency exit on the right side) are the recommended first choice cut-through areas.
2. Any window is suitable in extreme circumstances.

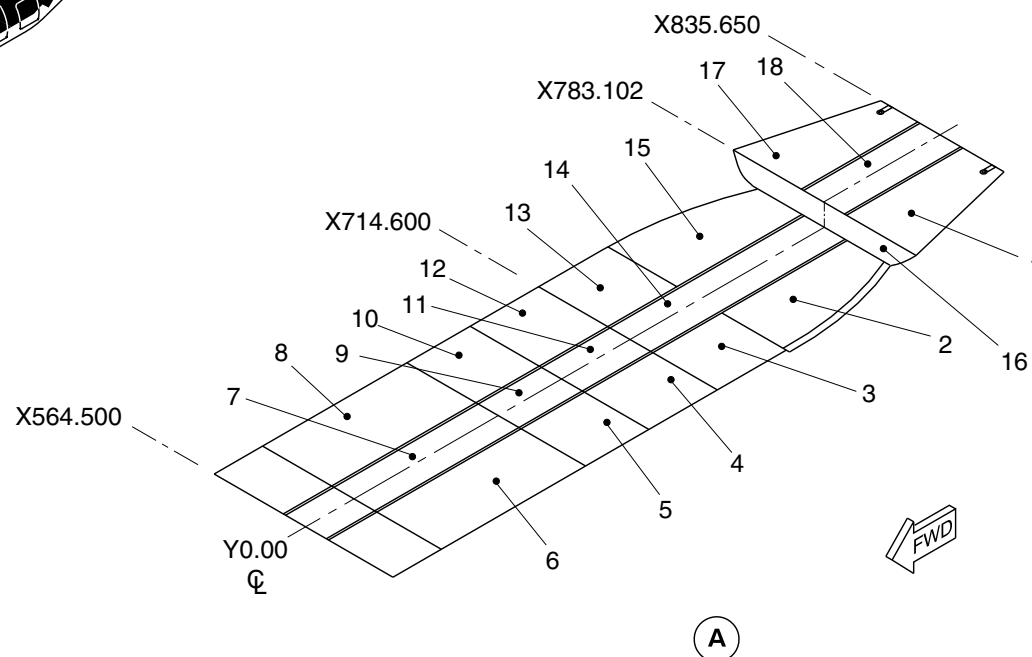
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Aft Center Fuselage Cut Through Panels  
Figure 5

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1. 145AZ.
2. 144DZ.
3. 144AZ.
4. 141FZ.
5. 141EZ.
6. 141DZ.
7. 143DZ.
8. 142DZ.
9. 143EZ.
10. 142EZ.
11. 143FZ.
12. 142FZ.
13. 144CZ.
14. 144BZ.
15. 144EZ.
16. 145DZ.
17. 145CZ.
18. 145BZ.

AFT Center Fuselage Floor Panel Numbers and Locating Page 1  
Figure 6

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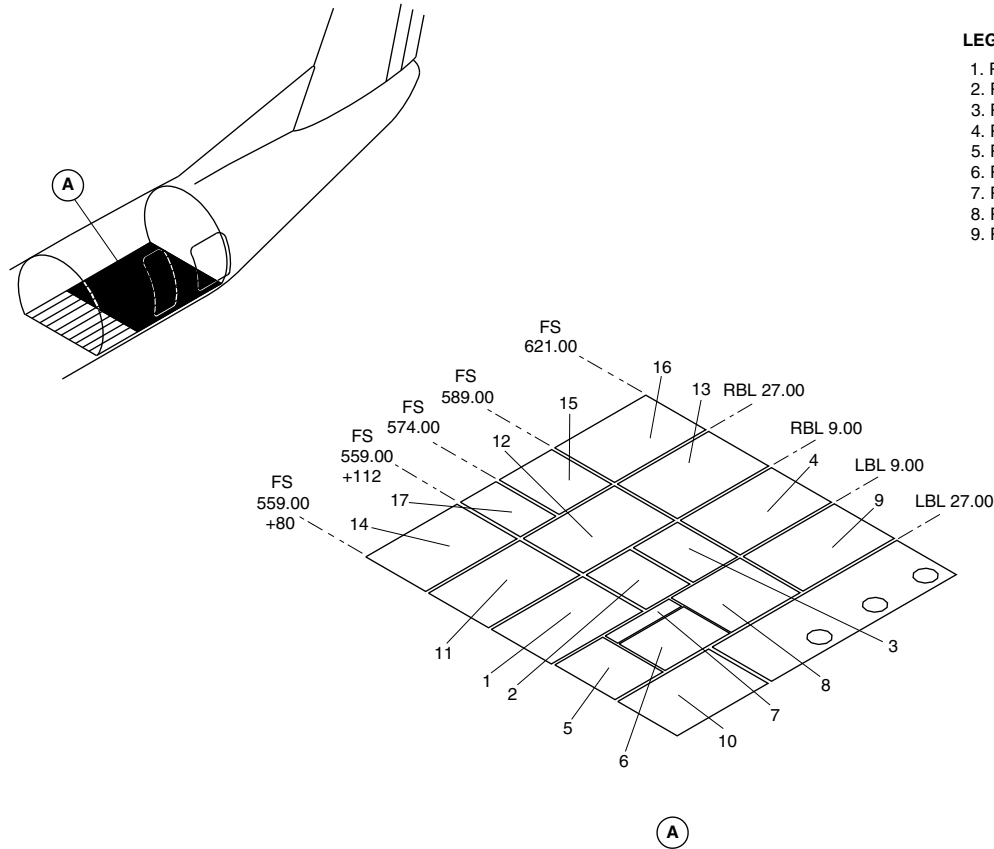
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### LEGEND

- |                  |                   |
|------------------|-------------------|
| 1. Panel 281ALF. | 10. Panel 281KLF. |
| 2. Panel 281BLF. | 11. Panel 282ERF. |
| 3. Panel 281CLF. | 12. Panel 282FRF. |
| 4. Panel 281DLF. | 13. Panel 282GRF. |
| 5. Panel 281ELF. | 14. Panel 282HRF. |
| 6. Panel 281FLF. | 15. Panel 285JRF. |
| 7. Panel 281GLF. | 16. Panel 282KRF. |
| 8. Panel 281HLF. | 17. Panel 282JRF. |
| 9. Panel 281JLF. |                   |

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AFT CENTRE FUSELAGE FLOOR PANEL NUMBERS AND LOCATIONS PAGE 2  
Figure 7

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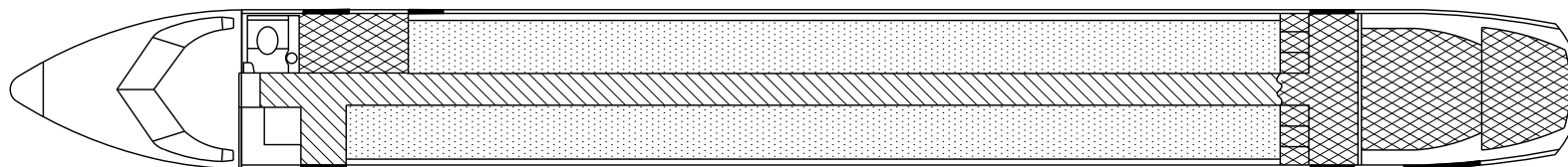
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




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### LEGEND

-  Floor panels stressed for 37.5 lb/ft<sup>2</sup>. (1.8 kN/m<sup>2</sup>).
-  Floor panels stressed for 75.0 lb/ft<sup>2</sup>. (3.6 kN/m<sup>2</sup>).
-  Floor panels stressed for 125.0 lb/ft<sup>2</sup>. (6.0 kN/m<sup>2</sup>).

cg4024a01.dg, vn/ak, jul24/2015

Aft Center Fuselage Floor Panel Stress Loading  
Figure 8

PSM 1-84-2A  
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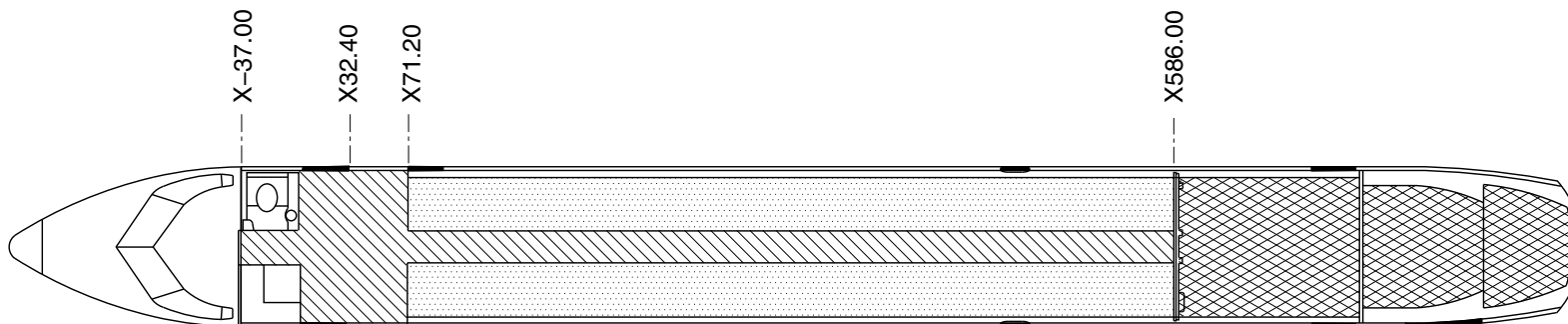
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




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### LEGEND

-  Floor panels stressed for 37.5 lb/ft<sup>2</sup>. (1.8 kN/m<sup>2</sup>).
-  Floor panels stressed for 75.0 lb/ft<sup>2</sup>. (3.6 kN/m<sup>2</sup>).
-  Floor panels stressed for 125.0 lb/ft<sup>2</sup>. (6.0 kN/m<sup>2</sup>).

cg3971a01.dg, ak, jul23/2015

Aft Center Fuselage Floor Panel Stress Loading  
Figure 9

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## AIRCRAFT MAINTENANCE MANUAL – SYSTEM DESCRIPTION SECTION

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**53–50–00–001**

### **AFT/TAIL FUSELAGE**

#### **Introduction**

The aft fuselage is a part of the main fuselage which forms the primary structure of the aircraft.

#### **General Description**

The fuselage is a semi-monocoque structure with skin reinforced by circumferential frames and longitudinal stringers. The primary structures in the fuselage are the stringers, frames and aircraft skin. The fuselage structure is made of high strength aluminum alloys (2024 and 7075).

A protective coating along the bottom of the fuselage is applied for protection from unpaved runways. One layer of F22 epoxy-polyamide enamel and two layers of corrosion preventive compound (F13) are applied to get an erosion resistant protective coating.

The aft/tail fuselage has these components:

- Aft Fuselage Access Panels (53–51–00)
- Aft Fuselage Dorsal Fairing (53–52–00).

#### **Detailed Description**

[Refer to Figure 1.](#)

The aft/tail fuselage section is the part of the aircraft behind the Sta. X829.548/X836.452 without the tailcone. The vertical stabilizer and dorsal fin are a part of the aft/tail fuselage section. The lower part of the three stabilizer spars extend down to make the mainframe of the rear fuselage.

The area between the front and center frame is an equipment bay for the air cycle machine and other equipment. Access to the equipment bay is given by an access door from the outside.

#### **Aft Fuselage Access Panels**

[Refer to Figure 2.](#)

There are two access panels on the top of the aft/tail fuselage. The access panels give access to the elevator and the rudder cables.

#### **Aft Fuselage Dorsal Fairing**

[Refer to Figure 3.](#)

The aft fuselage dorsal fairing consists of a forward and aft assembly that connects the forward dorsal fin at Sta. 846 to the vertical stabilizer. The aft fuselage dorsal fairing fairs the forward dorsal fin to the vertical stabilizer.

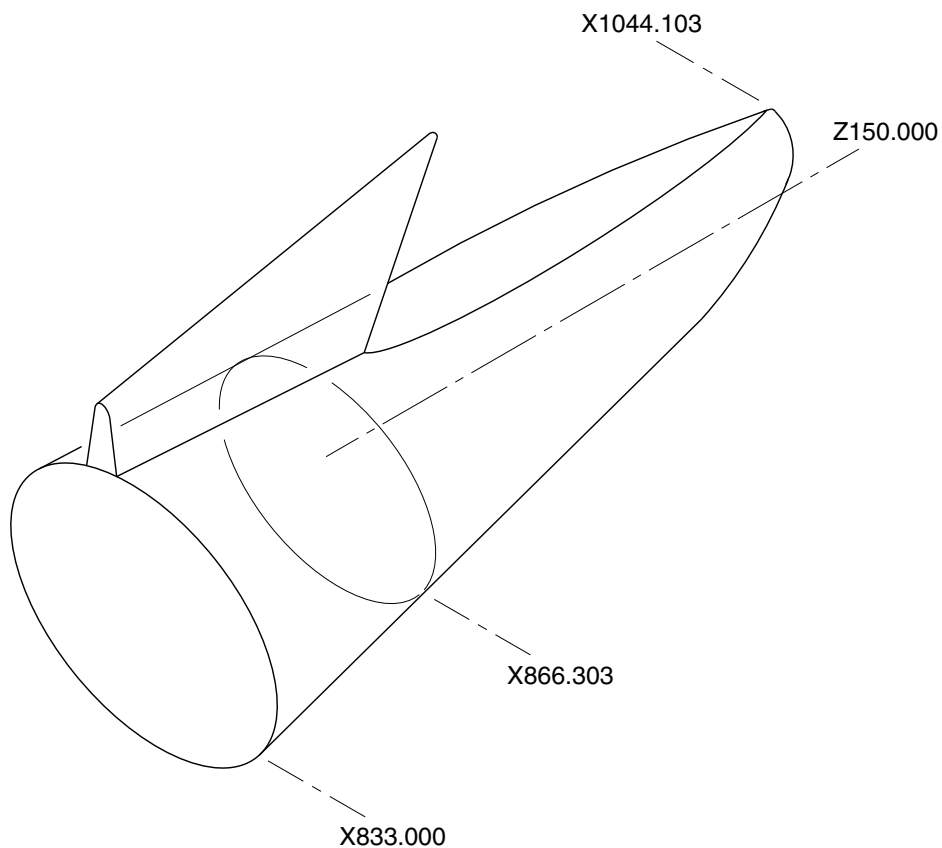
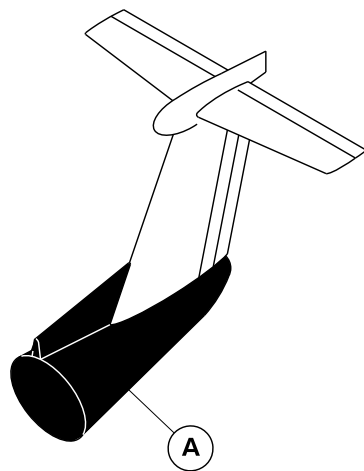
The aft fuselage dorsal fairing is a combination of fairing's and panel's constructed from composite materials





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Aft Fuselage  
Figure 1

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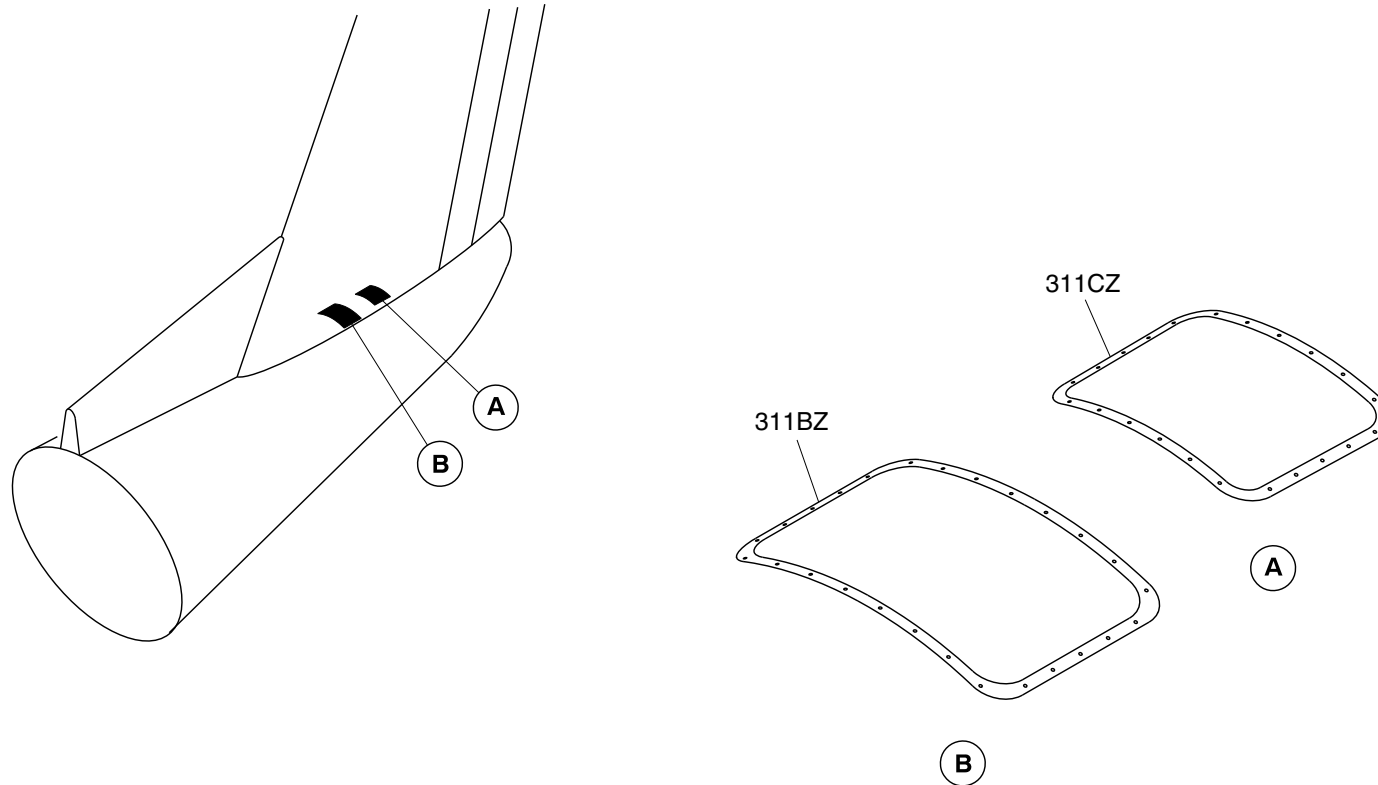
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Aft Fuselage Access Panels  
Figure 2

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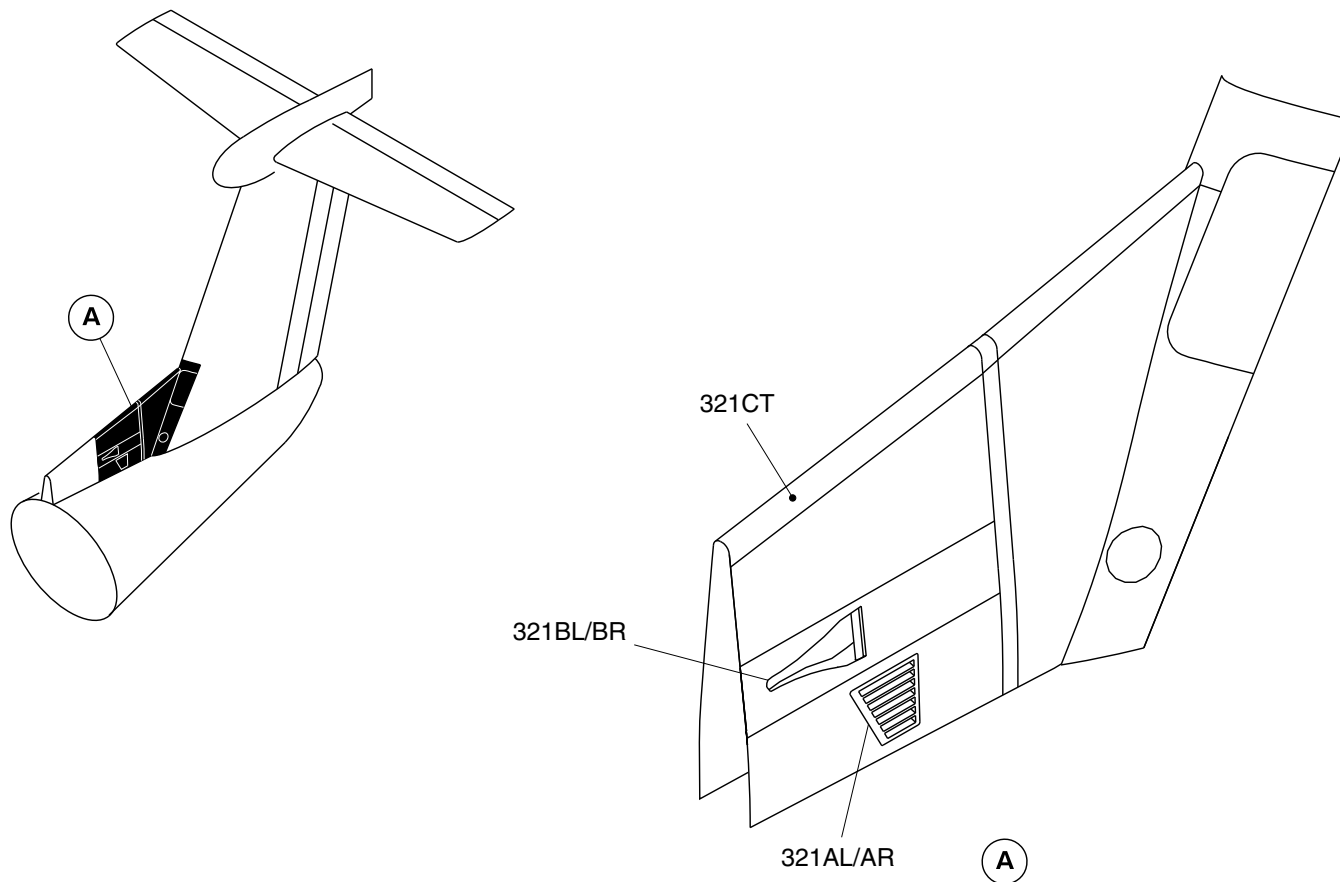
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Aft Fuselage, Aft Fuselage Dorsal Fairing  
Figure 3

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