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FUSELAGE STRUCTURE - DESCRIPTION AND OPERATION

1. General (Fig. 1)

- A. The fuselage is a semimonocoque structure consisting of skin reinforced by circumferential frames and longitudinal stringers. The fuselage is manufactured in five sections and connected by production breaks or manufacturing breaks to form a complete integral surface.
- B. The forward four sections form the pressurized shell of the fuselage and enclose all passenger, crew, and cargo accommodations.

2. Fuselage Main Frame

A. The main frame consists of the internal structure that gives the fuselage its shape. It includes the longitudinal stringers and the circumferential frames, but not the skin (Ref 53-10-00).

3. Fuselage Nose Section

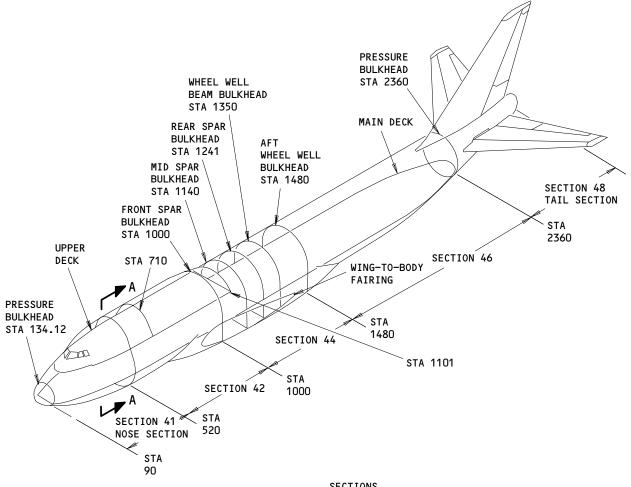
- A. The nose section, section 41, comprises the forward end of the fuselage aft to station 520. It contains three decks: the main deck, the upper deck, and the lower lobe deck.
- B. A fiberglass honeycomb radome forms the forward end of the nose section forward of station 134.12 and houses weather radar and navigational equipment.
- C. Structural openings contained in the nose section include the flight compartment windows, crew compartment overhead hatch, main deck passenger windows, two passenger entry doors, the forward electronic bay external access door and the nose landing gear wheel well.

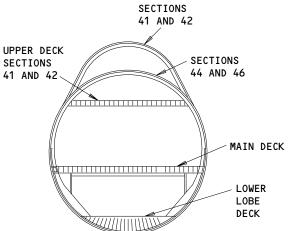
4. Fuselage Center Section

- A. The fuselage center section consists of sections 42, 44, and 46. These sections constitute the majority of the passenger and cargo carrying area.
- B. Section 42 extends from station 520 to station 1000. It contains an upper deck, main deck, and lower lobe. The lower lobe contains the forward cargo compartment. The forward end of the wing-to-body fairing is attached to the lower lobe of section 42. Structural openings contained in section 42 are passenger windows, two passenger entry doors, two type A emergency exit upper deck doors, cargo compartment door, center electronic bay access door.
- C. Section 44 extends from station 1000 to 1480 and contains the main deck, upper deck aft to Sta 1100, main gear wheel well, and provisions for the wing center section. Major structural members in this area include five bulkheads, keel beam, a torque box, the wing landing gear bulkhead, and the surface under the main deck floor beams. Structural openings in section 44 include passenger windows, two passenger entry doors, landing gear wheel well, and provisions for the wing center section.

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FUSELAGE SECTION (EXAMPLE)
A-A

Fuselage Structure Figure 1

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- D. Section 46 is the longest and most uniform of the five sections. It reaches from body station 1480 to 2360, and encloses the main deck and lower lobe. The lower lobe accommodates the aft containerized cargo compartment and the bulk cargo compartment. Attached to the lower lobe of section 46 is the aft end of the wing-to-body fairing. Structural openings include passenger windows, four passenger entry doors, two cargo compartment doors, a lavatory service door, and two outflow valve access doors.
- E. COMBI AIRPLANES;
 There is a side cargo door on the left side of the airplane.

5. Fuselage Tail Section

A. Section 48 is the nonpressurized tail section extending aft from body station 2360 to 2792. The smooth dome-shaped aft pressure bulkhead is part of the fuselage frame at body station 2360. The APU is also located in section 48. This section provides attachments for the vertical and horizontal tail structures. Major structural openings in section 48 are the actuator access and pressure relief door, the APU access door, APU air inlet, APU exhaust outlet, and the APU battery access door.

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MAIN FRAME - DESCRIPTION AND OPERATION

1. General (Fig. 1)

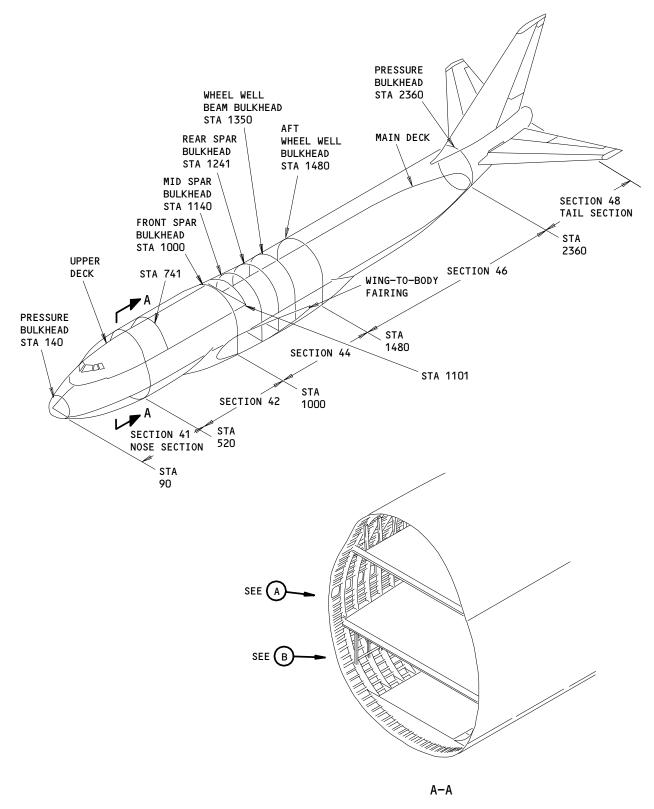
A. The main frame of the fuselage includes those members which form the basic shell exclusive of the skin and most skin reinforcements. It includes frames, bulkheads, stringers, floor-to-skin shear ties, the keel beam, wheel well structures, reinforcement structure around fuselage openings, and floor beams. All of the aforementioned is primary structure essential to the structural integrity of the airplane.

2. Main Frame Components

- A. Frames are circumferential channel section or Z-section members generally spaced at 20-inch intervals along the length of the fuselage. They stabilize the skin and stringers and distribute concentrated loads (detail A, sheet 2).
- B. Bulkheads consist of heavy frames with chords which fit all or part of the sectional contour of the airplane. Some bulkheads are reinforced by beams attached to the webs.
- C. Stringers are longitudinal members spaced around the fuselage circumference and extending the full length of the fuselage. They are attached to the inboard face of the skin and the frame webs and chords. The stringers are typically hat-section or Z-section as required by location (detail A, sheet 2).
- D. The floor-to-skin shear ties are those ties which extend longitudinally along the intersections of floor beams and frames (detail B, sheet 2).
- E. The keel beam is the major longitudinal fuselage component in the main landing gear wheel well and wing center section areas. It extends along the fuselage centerline through the wheel well and under the wing center section.
- F. The primary wheel well structures include bulkheads, beams, and torque boxes which contribute to fuselage integrity and support the landing gear attach fittings (Ref 53-15-00).
- G. The floor beams attach to the frames except section 44 main deck floor beams where they run longitudinally and attach to the center wing box upper surface (detail B, sheet 2).
- H. Additional stringers, frames, and/or skin doublers reinforce the structural fuselage openings (Fig. 2).

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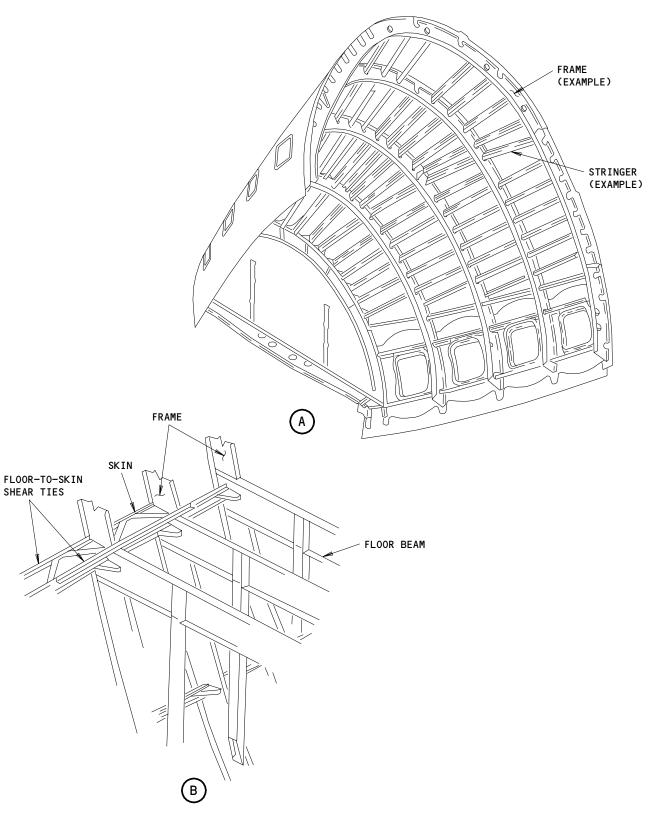
Fuselage Structure (Example)
Figure 1 (Sheet 1)

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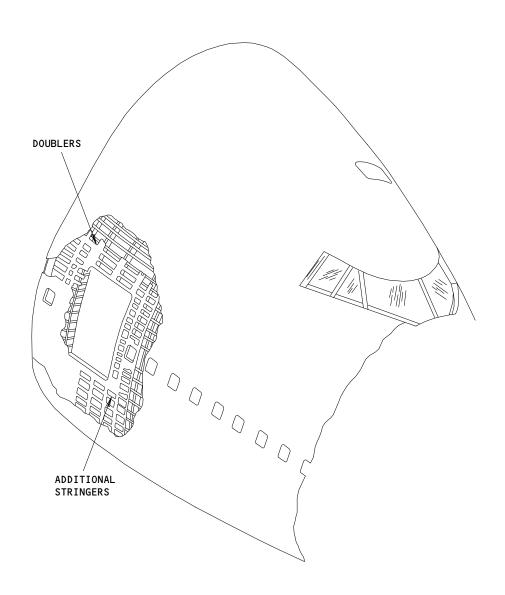
Fuselage Structure (Example)
Figure 1 (Sheet 2)

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Door Reinforcement Figure 2

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NOSE SECTION: STATION 90 TO STATION 520 - DESCRIPTION AND OPERATION

1. General (Fig. 1)

- A. The fuselage nose section, section 41, consists of the fuselage between station 90 and the production break frame at station 520. The nose radome, forward of station 134.12, houses weather radar and navigation equipment. The control cabin and the forward end of the main and upper decks are all part of the nose section. The main deck accommodates passengers from body station 140, aft. The upper deck consists of the control cabin, aft of which is the crew area. A crew compartment overhead hatch is located in the upper left ceiling.
- B. The lower lobe houses the main electrical/electronics compartment. Access is gained through a door immediately aft and to the left of the nose landing gear well. The nonpressurized nose gear wheel well is covered by four doors of metal bond construction. The forward containerized cargo compartment has its beginning aft of electrical/electronics compartment.

2. <u>Frames</u> (Fig. 2)

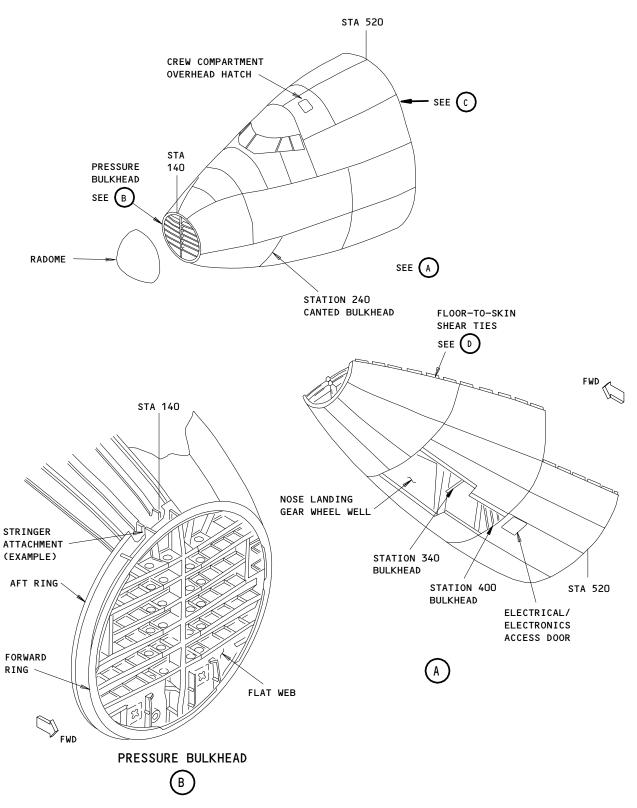
A. The frames are channel section members, primarily of aluminum alloy, that form the cross-sectional shape of the body and carry pressure loads. They are shear tied to the skin (detail C, sheet 2). Spacing is generally 20.0 inches. Depth of the frames varies but typical depth is 6.0 inches in the main deck area, 8.0 inches in the upper deck area, and increased to a depth in the lower lobe to provide support for the cargo floor. The floor beams are attached to the frames at WL 199.8 and WL 307.5 and absorb the normal loads of seat tracks and floor panels plus the tension loads due to cabin pressurization.

3. Bulkheads (Fig. 1)

A. The nose section contains four bulkheads. The forward pressure bulkhead, located at station 140, consists of a forward and aft ring and a flat web reinforced by seven horizontal and one vertical beam. The canted bulkhead intersects the lower airplane surface at approximately station 240 then angles up and back, forming the forward end of the nonpressurized nose gear wheel well. The bulkhead at station 340 forms the aft end of the large cavity for the nose wheels; and the station 400 bulkhead forms the aft end of the small cavity for the nose gear. The bulkheads at stations 240, 340, and 400 are composed of beams, flat webs, and doublers to support the loads imposed by the nose landing gear.

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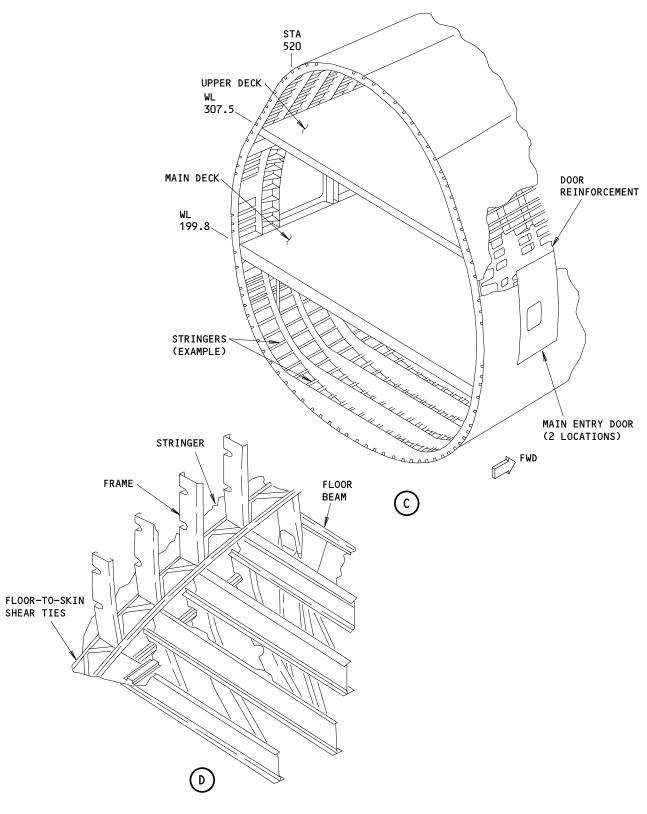


Nose Section, Section 41 Figure 1 (Sheet 1)

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Nose Section, Section 41 Figure 1 (Sheet 2)

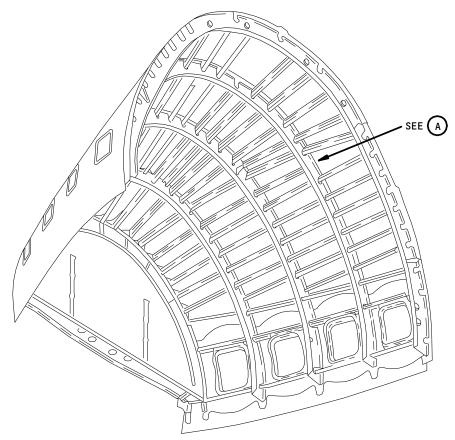
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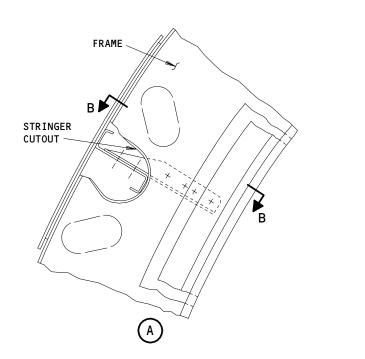
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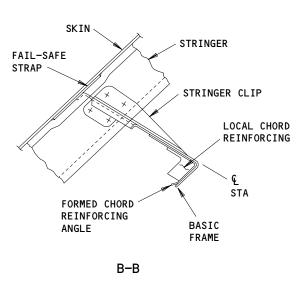
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Frame and Stringer - Section 41 (Example) Figure 2

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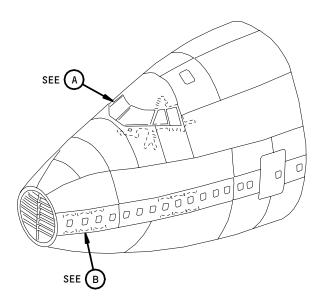


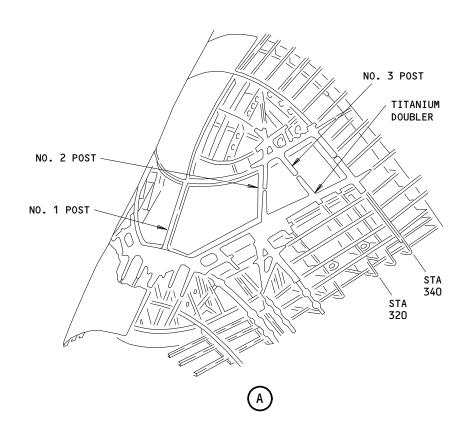
4. <u>Stringers</u> (Fig. 2)

- A. The section 41 fuselage stringers are longitudinal primary structural members that extend aft from body station 140 pressure bulkhead to the station 520 production break, interrupted only by structural openings. These stringers are formed sections of aluminum alloy. Stringers pass through cutouts in frames to allow for shear tie frame construction and are typically attached to the skin by shear head rivets. Stringers are attached to frames by angle shaped and tee shaped clips. Stringers are typically spaced approximately seven to ten inches apart. Stringers provide fail— safe construction by acting as circumferential skin tear stoppers.
- 5. Floor-to-Skin Shear Ties (Fig. 1)
 - A. The floor-to-skin shear ties extend along both sides of the fuselage, level with the floor at each deck. Two types of shear ties are used. A punched and formed sheet metal type is most common but a truss-type is used where decompression venting provisions are required. The shear ties are attached to fuselage skin stringers, floor beams, and body frame.
- 6. Flight Compartment Window Opening Reinforcements (Fig. 3)
 - A. The flight compartment window and windshield posts form a truss tied to the body frames. The forward and aft of the aft window is part of a reinforced portion of body station 320 and 340 frames. The portion of the body frame at station 320 that separates the forward and aft side windows is known as No. 3 post. No. 2 post separates the windshield from the forward side window and No. 1 post separates the left and right windshields (detail A, sheet 2).
 - B. All posts are of two-piece fail-safe construction so that, should one member fail, the remaining member can safely carry the load. Upper and lower sill chords of the side windows are extrusions. All sill chords and posts are aluminum alloy extrusions except the windshield lower sills and the No. 1 post. The windshield lower sills are machined aluminum forgings and the No. 1 post is a machined extrusion of aluminum alloy. The posts are continuous beams, splicing to and continuing through the sills to effect maximum rigidity with least visual blocking. The upper sill is a torque box extending around the entire window pattern from station 340 bulkhead, left to right side. The main lower sill is a continuous beam extending forward and below the windshield aft to station 340. It is attached to frames, and intersecting posts to effect maximum rigidity.
 - C. Skin reinforcement around the control cabin windows is furnished by five formed titanium doublers. These doublers are formed to surround the windows and follow the outline and contour of the fuselage frames, stringers, and window structure truss. They are fay sealed to the inboard side of the skin.

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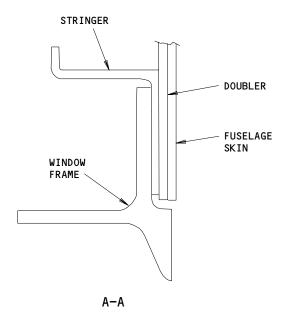
Window Reinforcements Figure 3 (Sheet 1)

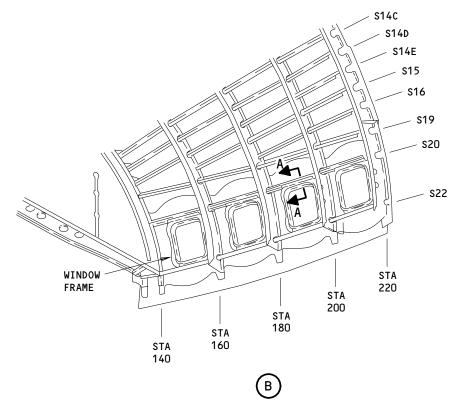
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Window Reinforcements Figure 3 (Sheet 2)

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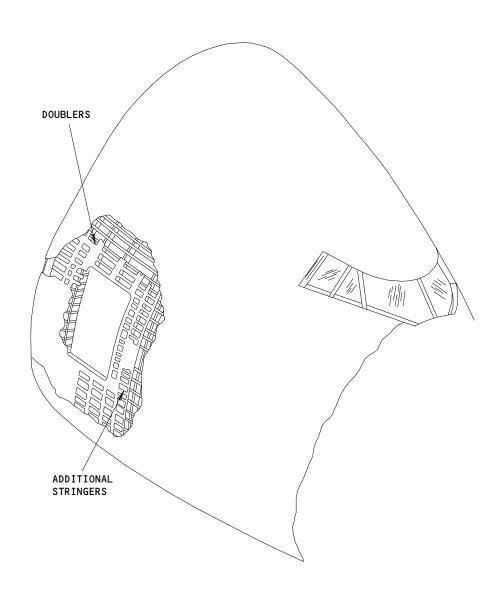
- 7. Passenger Compartment Window Opening Reinforcements (Fig. 3)
 - A. The passenger compartment window openings are centered between the fuselage frames and are reinforced by aluminum doubler, a high strength, die forged aluminum alloy window frame, and a Z-section extruded stringer at the upper and lower edges of the opening. The doubler is fay sealed to the skin, producing a fail-safe cutout design. The Z-section stringers are fay sealed to the doubler; and the window frames are fay sealed to the doublers and stringers. All components are riveted together in addition to the attachment by bonding.
- 8. <u>Door Opening Reinforcements</u> (Fig. 4)
 - A. The passenger door openings are surrounded by a set of skin doublers approximately 0.15 inch thick in addition to the outer skin. These doublers are bonded to each other and to the outer skin. Doublers also surround the crew compartment overhead hatch and the electrical/electronics access opening.
 - B. Where local design conditions require it, additional stringers and frames have been added.

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Door Reinforcement Figure 4

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MAIN ENTRY DOOR STOP PLATE - REMOVAL/INSTALLATION

1. General

- A. This procedure contains two tasks. The first task is the removal of the stop plate for the main entry door. The second task is the installation of the stop plate for the main entry door.
- B. You must replace the stop plates for the main entry door when they are worn or defective (Ref 52-11-01/601 and 52-11-09/601).

TASK 53-11-01-004-001

- 2. Remove the Stop Plate (Fig. 401)
 - A. References
 - (1) IPC 52-11-07 Fig. 3 (No. 1 Door)
 - (2) IPC 52-11-08 Fig. 3 (No. 2 and 4 Doors)
 - (3) IPC 52-11-09 Fig. 3 (No. 3 Door)
 - (4) IPC 52-11-11 Fig. 3 (No. 5 Door)
 - B. Access
 - (1) Location Zone

```
211 Passenger Cabin, Nose to First Door, No. 1 Door, LH
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- 212 Passenger Cabin, Nose to First Door, No. 1 Door, RH
- 231 Passenger Cabin, First to Second Door, No. 2 Door, LH
- 232 Passenger Cabin, First to Second Door, No. 2 Door, RH
- 241 Passenger Cabin, Second to Third Door, No. 3 Door, LH
- 242 Passenger Cabin, Second to Third Door, No. 3 Door, RH
- 251 Passenger Cabin, Third to Fourth Door, No. 4 Door, LH
- 252 Passenger Cabin, Third to Fourth Door, No. 4 Door, RH
- 271 Passenger Cabin, Sta 2040 to Sta 2360, No. 5 Door, LH
- 272 Passenger Cabin, Sta 2040 to Sta 2360, No. 5 Door, RH

C. Procedure

s 324-012

(1) Remove the rivets that attach the stop plate to the threshold.

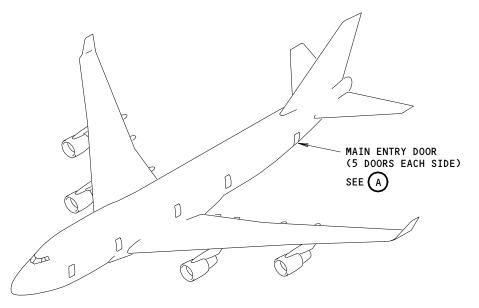
NOTE: The rivets used in production are 1/8-inch, MS20427, Monel rivets.

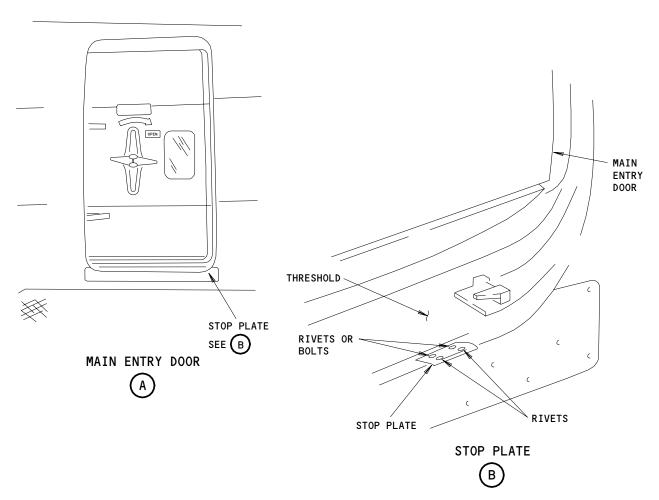
EFFECTIVITY-

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Main Entry Door Stop Plate Installation Figure 401

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s 024-011

(2) Remove the bolts that attach the stop plate to the threshold.

s 034-010

(3) Remove the stop plate.

TASK 53-11-01-404-003

- 3. Install the Stop Plate (Fig. 401)
 - A. Standard Tools and Equipment
 - (1) Rivets NAS1399M or NAS1399MW
 - B. References
 - (1) 51-24-04/701, Abrasion-Resistant Teflon Finish
 - (2) IPC 52-11-07 Fig. 3 (No. 1 Door)
 - (3) IPC 53-12-66 Fig. 1 (No. 2 Door)
 - (4) IPC 53-12-61 Fig. 1 (No. 3 Door)
 - (5) IPC 53-12-60 Fig. 2 (No. 4 Door)
 - (6) IPC 53-12-62 Fig. 2 (No. 5 Door)
 - C. Access
 - (1) Location Zone
 - 211 Passenger Cabin, Nose to First Door, No. 1 Door, LH
 - 212 Passenger Cabin, Nose to First Door, No. 1 Door, RH
 - 231 Passenger Cabin, First to Second Door, No. 2 Door, LH
 - 232 Passenger Cabin, First to Second Door, No. 2 Door, RH
 - 241 Passenger Cabin, Second to Third Door, No. 3 Door, LH
 - Passenger Cabin, Second to Third Door, No. 3 Door, RH
 - Passenger Cabin, Third to Fourth Door, No. 4 Door, LH
 - 252 Passenger Cabin, Third to Fourth Door, No. 4 Door, RH
 - 271 Passenger Cabin, Sta 2040 to Sta 2360, No. 5 Door, LH
 - 272 Passenger Cabin, Sta 2040 to Sta 2360, No. 5 Door, RH
 - D. Procedure

s 374-004

(1) Clean and paint the mating surfaces of the stop plate and threshold (Ref 51-24-04/701).

s 214-006

(2) Make sure the rivet holes in the threshold and stop plate can accept 3/16-inch, NAS1399, blind rivets.

EFFECTIVITY-

53-11-01

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s 324-007

(3) If it is necessary, drill and countersink the rivet holes.

NOTE: Bolts are used in the inboard holes. Do not drill the holes for rivets in these locations.

s 434-008

(4) Install the stop plate on the threshold with NAS1399M or NAS1399MW blind rivets in the correct locations.

s 434-009

(5) Install the bolts.

EFFECTIVITY-

ALL

53-11-01



MAIN ENTRY DOOR SCUFF PLATE - REMOVAL/INSTALLATION

1. General

- A. This procedure contains two tasks:
 - (1) The first task is the removal of the scuff plates for the passenger entry door.
 - (2) The second task is the installation of the scuff plates for the passenger entry door.
- B. You must replace the scuff plates for a passenger entry door when the scuff plates are worn or defective.
- C. The clearances between the scuff plates and the airplane structure are sealed for aerodynamic smoothness.

TASK 53-11-02-024-003

- 2. Remove the Scuff Plates
 - A. Consumable Materials
 - (1) B00148 Solvent Methyl Ethyl Ketone (MEK)
 - B. References
 - (1) AMM 51-31-01/201, Seals and Sealing
 - C. Access
 - (1) Location Zones

830 Left side doors 840 Right side doors

D. Procedure

s 024-001

CAUTION: BE CAREFUL WHEN YOU REMOVE THE SEALANT FROM THE EXTERNAL PORTION OF THE SCUFF PLATE. IF YOU ARE NOT CAREFUL, DAMAGE TO THE FUSELAGE SKIN CAN OCCUR.

(1) Remove the scuff plate fasteners.

NOTE: Be careful not to damage the scuff plate or the airplane skin.

s 024-006

CAUTION: BE CAREFUL NOT TO DAMAGE THE SCUFF PLATE OR THE AIRPLANE SKIN AS YOU REMOVE THE SCUFF PLATE.

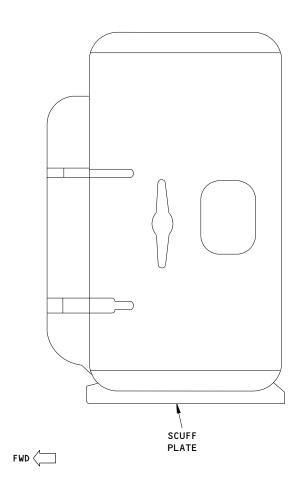
(2) Carefully pry up the scuff plate and remove the scuff plate from the airplane.

EFFECTIVITY-

53-11-02

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PASSENGER ENTRY DOOR (EXAMPLE)

Passenger Entry Door Scuff Plate Installation Figure 401

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53-11-02

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s 114-007

WARNING: DO NOT GET SOLVENTS IN YOUR MOUTH OR EYES, OR ON YOUR SKIN. DO NOT BREATHE THE FUMES FROM THE SOLVENTS. SOLVENTS ARE HAZARDOUS MATERIALS. REFER TO PRODUCT SAFETY DATA SHEETS (MSDS) AND LOCAL REQUIREMENTS FOR PROPER HANDLING PROCEDURES.

(3) Clean all faying surfaces by removing old sealant and parting agent with a plastic scraper.

s 214-008

(4) Do a visual inspection of the nut plates to determine if they are in acceptable condition. If not, replace them.

TASK 53-11-02-424-004

- 3. <u>Install the Scuff Plates</u>
 - A. Consumable Materials
 - (1) A00247 Sealant BMS5-95
 - (2) G00009 Compound BMS3-23
 - (3) COOO64 Coating Clear Alodine 1000
 - (4) B00148 Solvent Methyl Ethyl Ketone (MEK)
 - B. References
 - (1) AMM 51-31-01/201
 - C. Access
 - (1) Location Zones

830 Left side doors

840 Right side doors

D. Procedure

s 114-009

WARNING: DO NOT GET SOLVENTS IN YOUR MOUTH OR EYES, OR ON YOUR SKIN. DO NOT BREATHE THE FUMES FROM THE SOLVENTS. SOLVENTS ARE HAZARDOUS MATERIALS. REFER TO PRODUCT SAFETY DATA SHEETS (MSDS) AND LOCAL REQUIREMENTS FOR PROPER HANDLING PROCEDURES.

(1) Clean all faying surfaces with a solvent and wipe.

s 844-010

(2) Apply alodine and one coat of BMS10-11 Type I primer to all bare aluminum surfaces including the faying surface of the fuselage skin.

EFFECTIVITY-

53-11-02

ALL



s 824-011

(3) Apply a coat of strippable parting agent to all faying surfaces of the threshold, the scuff plates and the fuselage skin.

s 824-012

(4) Apply the BMS3-23 Type 2 corrosion inhibiting compound to the entire area under the threshold.

The area in contact with the scuff plate should be masked to prevent exposure to the corrosion inhibiting compound so the sealant will adhere.

s 214-013

(5) Check that the nut plates are in the proper position.

s 394-005

(6) Prepack sealant BMS5-95 to the cap, doorsill mating surface and the skin mating surface. Apply a pressure faying surface seal to the skin over the entire area that contacts the scuff plate. Install scuff plates with fasteners according to the production drawings.

NOTE: It is critical that sufficient sealant be prepacked into the scuff plates to completely fill the gap between the scuff plates and the fuselage skin along the lower edge of the doorway. Continuous sealant squeeze-out is required along all gaps.

s 394-014

ALL

WARNING: DRAINAGE HOLES MUST BE CLEAR OF SEALANT. REMOVE ANY SEALANT THAT GETS INTO THE DRAINAGE HOLES.

(7) Remove excess sealant from the gap and the edge after squeeze-out has stopped.

EFFECTIVITY-

53-11-02



CONTROL CABIN - INSPECTION/CHECK

1. General

This procedure contains one task. The task is the inspection of the right side of the control cabin structure. The inspection of the structure is from STA 340 to 420, from the top of the control cabin to the upper deck floor. Use this procedure to examine the frames, the stringers or the skin for cracks.

TASK 53-11-02-206-016

- 2. <u>Control Cabin Inspection</u>
 - Standard Tools and Equipment
 - (1) Borescope Fujinon Model 1015F or Olympus IF-8D3
 - References
 - (1) 24-22-00/201, Manual Control
 - (2) 25-11-03/401, Observers' Seats
 - (3) 25-14-01/401, Flight Compartment Ceiling Dripshield
 - (4) 52-21-01/401, Crew Compartment Overhead Hatch
 - (5) SRM 53-10-04
 - C. Access
 - (1) Location Zones

221/222 Control Cabin

223/224 Forward Upper Deck Passenger Cabin

D. Prepare to Examine the Control Cabin

s 866-001

(1) Remove the electrical power (Ref 24-22-00/201).

s 016-002

Remove the observers' seats (Ref 25-11-03/401). (2)

ALL

(3) Open or move these panels in the control cabin:

(a) P6 Main Power Distribution

EFFECTIVITY-

53-11-02



- (b) P7 Overhead Circuit Breaker Panel
- (c) P11 First Observers Console
- (d) P13 Second Observers Console
- (e) P461 Overhead Maintenance Panel.

s 016-004

(4) Remove the crew escape hatch (Ref 52-21-01/401).

s 016-005

(5) Remove the sidewall lining.

s 016-006

(6) Remove the ceiling dripshields (Ref 25-14-01/401).

s 016-007

- (7) Remove the insulation blankets.
- E. Examine the Control Cabin Structure (Fig. 601).
 - NOTE: The following borescope inspection procedure may be used to inspect the flight deck corresponding right side body frame structure without removing the panels P6, P7, and P461. Look for any cracks or previous repairs on the left side from BS 340 to and including BS 400. Exclude any BS 360 frame web cracking at the web cutout for left stringer 3 penetration. Any cracks or previous repairs on the left side requires an inspection of right frames at BS 340, 360, and 380 from stringer SO to S12AR, which may be done by borescope on structures under 20,000 flight cycles. In addition, the right frame at BS 400 must be inspected using internal visual or borescope methods (borescope not allowed on structures beyond 20,000 flight cycles.)
 - NOTE: The borescope inspection of the specified frames is considered acceptable provided that all of each frame is closely observed with the borescope on at least one side of the frame. In addition, the frame outboard and inboard flanges of any nested reinforcing members must be fully observed, on at least one surface.

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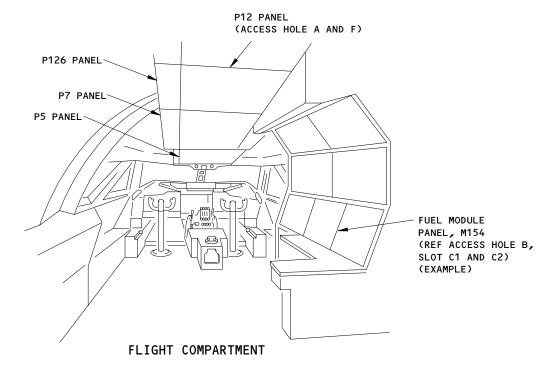
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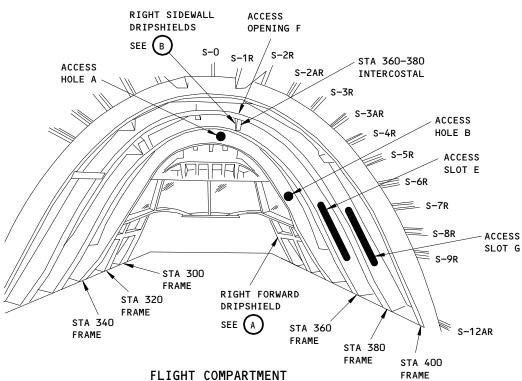
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BODY DRIPSHIELDS AND INSULATION BLANKETS REMOVED
(EXAMPLE)

Structure Access for Borescope Inspection Figure 601 (Sheet 1)

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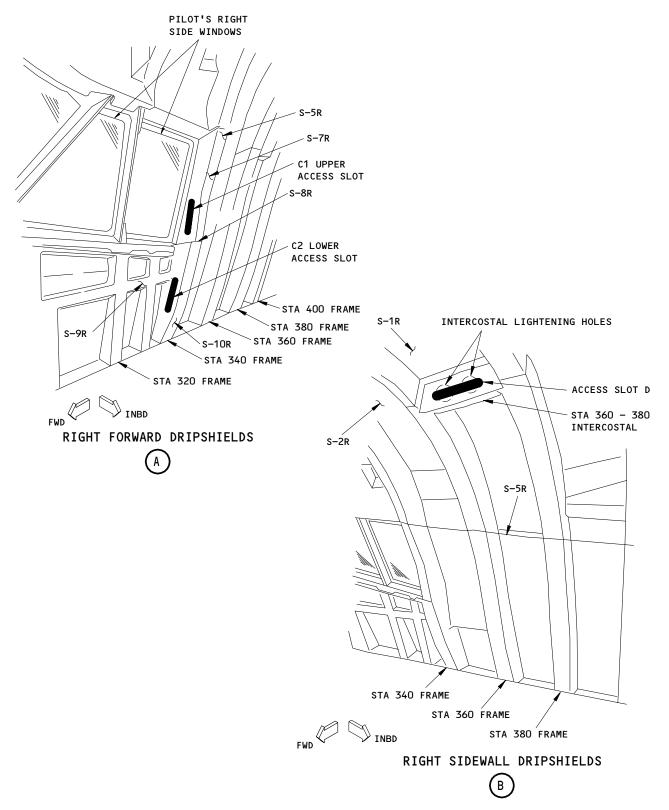
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Structure Access for Borescope Inspection Figure 601 (Sheet 2)

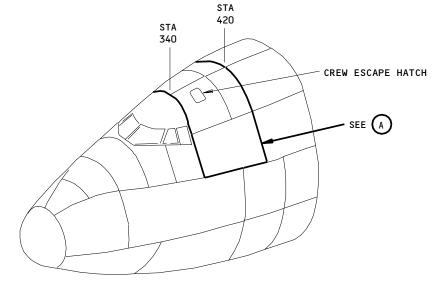
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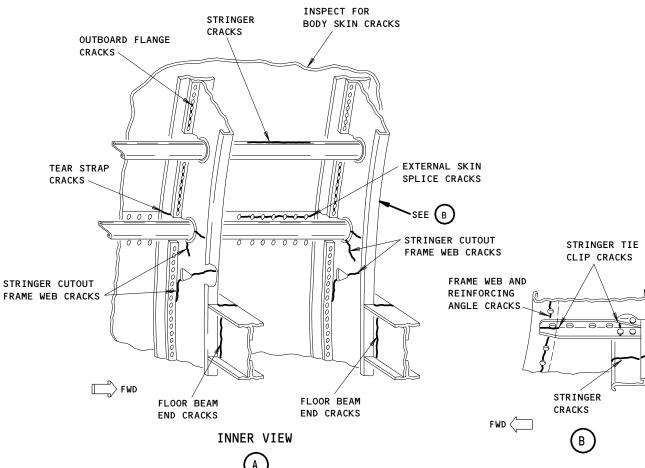
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Control Cabin Inspection Figure 602

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- NOTE: This procedure assumes that the fiberglass dripshield between BS 360 and BS 380 left has been removed around stringer SO.
- <u>NOTE</u>: The procedure requires cutting access holes and slots in the drip shields, and with the aid of a flexible borescope, visually inspecting the frames.
- NOTE: The borescope inspection may not be used on structures beyond 20,000 flight cycles.
- <u>NOTE</u>: It is recommended that this inspection procedure be completed by two persons, one controling the insertion tube, and the other viewing, directing and operating the manipulator.

s 016-091

- (1) Gain access to BS 340 frame right.
 - (a) Lower the aft overhead circuit breaker panel P12.
 - (b) Gain access to the panel opening, and locate the aft side of the fiberglass dripshield covering BS 340 frame at stringer S1R.
 - (c) Cut a 3.0 inch diameter hole in the dripshield aft side, and cut a single slit in the insulation blanket. This hole is access hole A.
 - <u>NOTE</u>: Make the access holes as small as possible and save the pieces that you remove to make the repairs easier.
 - (d) Remove the M154 fuel module panel and any other panels necessary to gain access to the frames.
 - (e) Locate the aft side of the dripshield covering BS 340 frame at Stringer S6R.

EFFECTIVITY-

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- (f) Cut a 3.0 inch diameter in the aft side of the dripshield, and cut a slit in the insulation blanket. This is access hole B.
- (g) Locate the forward side of the dripshield at stringer S7R and S8R, and between S9R and S10R.
- (h) Cut two 2.0 by 9.0 inch slots in the dripshield forward side, and slit the insulation blanket. These are access slots C1 upper and C2 lower.

NOTE: The upper access slot C1 is not required if the BS 340 frame dripshield is removed along the aft end of the pilots right side window.

s 016-092

- (2) Gain access to BS 360 frame right.
 - (a) Gain access to the inboard side of the BS 360 to 380 intercostal, located between stringers S1R and S2R, by cutting a 2.0 by 13.0 inch fore and aft slot along the center of the inboard side of the dripshield covering the intercostal. This is access slot D.
 - (b) If the intercostal is cracked, cut and remove the dripshield section from the intercostal to the crown of the cockpit for repair access.

<u>NOTE</u>: The intercostal has two 4.0 inch diameter lightening holes.

- (c) For access to the right side do step that follows:
 - Remove the trim panel immediately forward of the right crew entry door to allow access to the area.
- (d) Locate the aft side of the dripshield covering BS 360 frame from stringers S7R to S10R.
- (e) Cut a 2.0 by 30.0 inch slot in the dripshield aft side and slit the insulation blanket. This is access slot E.

s 016-093

- (3) Gain access to BS 380 frame.
 - (a) To gain access to BS 380 frame aft side at stringer S1R cut a 3.0 inch diameter hole in the dripshield aft side and slit the insulation blanket. This is access opening F.

EFFECTIVITY-

53-11-02



- (b) Locate the aft side of the dripshield covering BS 380 frame from stringers S7R to S10R.
- Cut a 2.0 by 30.0 inch slot in the dripshield aft side and slit the insulation blanket. This is access slot G.

S 296-094

- (4) Inspect BS 340 frame right.
 - (a) Place the borescope insertion tube in access hole A to locate the frame. Scan the frame from the inboard flange to the skin.

NOTE: Inspect the cutouts and fastener locations carefully.

- (b) Feed the insertion tube outboard along the aft side of the frame until the scan has covered stringers S1R to S3R, then remove the borescope.
- Place the borescope in access hole B and scan the frame upward to stringer S3R.
- (d) Scan the frame downward below stringer S6R, then remove the borescope.
- Place the borescope in the upper access slot C1 and scan the (e) frame upward to stringer S6R.
- Scan the frame downward to stringer S9R, then remove the (f) borescope.
- Insert the borescope in the lower access slot C2, and scan the (q) frame upward to stringer S8R.
- Scan the frame downward to the upper deck floor line at stringer S12AR.

s 296-095

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- (5) Inspect BS 360 frame right.
 - Insert the borescope tube through access slot D and the forward lightning hole of the intercostal between S1R and S2R, and locate the BS 360 frame aft side.
 - Scan the frame downward to stringer S5R.
 - (c) Visually inspect the frame from the stringers S7R to S10R, through access slot E.

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- (d) Place the insertion tube in access slot E and scan upward to stringer S6R.
- (e) Scan the frame downward to the floor at stringer S12R.
- (f) Place the insertion tube in access slot E and through the frame lightening hole above stringer S8R. Move the tube behind the blanket and move the tube forward to scan the intercostal at stringer S8R.

s 296-096

- (6) Inspect the BS 380 frame right.
 - (a) Place the borescope insertion tube into the access opening F, and locate BS 380 frame aft side.
 - (b) Scan the frame outboard and downward to stringer S5R.
 - (c) Visually inspect the frame from stringers S7R to S10R through access slot G.
 - (d) Place the insertion tube in access slot G and scan the frame upward to stringer S5R.
 - (e) Scan the frame downward to the floor at stringer S12R.
 - (f) Repair all the cracks which you find (SRM 53-10-04).

s 346-098

- (7) After inspection and any repairs are complete, seal all the insulation blankets, and repair all fiberglass dripshield holes and slots.
 - (a) Seal each insulation blanket slit using insulation tape or covering (AMM 25-00-00).
 - (b) Repair each dripshield hole or slot by rebonding any cutout pieces using fiberglass cloth and adhesive in a cold bonding layup (AMM 25-00-00, 25-14-01).
- F. Put the Airplane to Its Usual Condition

s 416-009

(1) Install the insulation blankets.

s 416-010

ALL

(2) Install the ceiling panel dripshields (Ref 25-14-01/401).

EFFECTIVITY-

53-11-02



s 416-011

(3) Install the sidewall lining.

s 416-012

(4) Install the crew escape hatch (Ref 52-21-01/401).

s 416-013

- (5) Install these panels:
 - (a) P6 Main Power Distribution Panel
 - (b) P7 Overhead Circuit Breaker
 - (c) P11 First Observers Console
 - (d) P13 Second Observers Console
 - (e) P461 Overhead Maintenance Panel.

s 416-014

(6) Install the observers' seats (Ref 25-11-03/401).

EFFECTIVITY-

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CENTER SECTION: STATION 520 TO STATION 2360 - DESCRIPTION AND OPERATION

1. General (Fig. 1)

- A. The fuselage center section consists of sections 42, 44, and 46. Section 42 is that section between the nose section and the forward end of the wing box; section 44 is the section over the wing box and wheel well; and section 46 is aft of the wheel well extending to the aft pressure bulkhead. The fuselage center section provides support and houses the upper deck, the main deck, lower deck, and cargo compartments.
- B. The main deck is on the same level as that of section 41 and continues aft to the pressure bulkhead at station 2360. The upper deck extends aft to station 1101. The lower deck consists primarily of the main gear wheel wells, the wing center section areas, and the three cargo compartments.
- C. The forward containerized cargo compartment begins in section 41 and ends at the aft end of section 42. The aft containerized cargo compartment extends from the forward end of section 46 aft to station 1920, and the bulk cargo compartment is located in the aft end of section 46 from station 1920 to 2160. The forward containerized cargo compartment has an outward opening door 104 inches wide by 68 inches high near the forward end. The aft containerized cargo compartment has the same size door at the aft end. Access to the bulk cargo area is through the 44-inch high by 47-inch wide inward opening door toward the forward end of the compartment.
- D. Access to the main deck is by one of four evenly spaced doors on each side. Access to the upper deck is by a stairway in section 42 or by an emergency door on each side.
- E. The main landing gear wheel well, from station 1241 to 1480, houses both the body and wing main landing gear. The keel beam separates the left wheel well from the right and then extends forward beneath the center wing box. Attached to each side of the fuselage from station 1350 to 1480 outboard (Fig. 2) of the wheel well is a longeron crease beam.

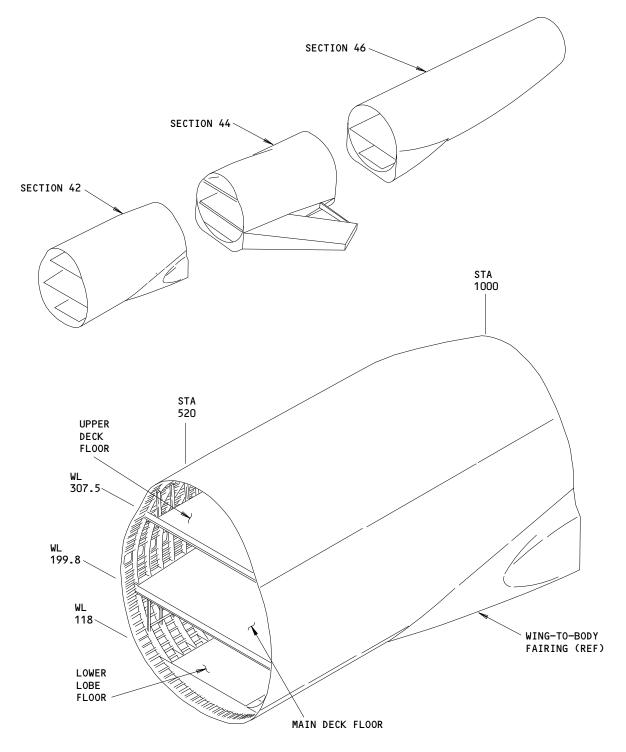
2. Frames

A. The frames are Z-section members of aluminum alloy that form the cross-sectional shape of the body and carry pressure loads. They are attached, where required, to form a shear tie to the skin. Spacing is generally 20 inches. Depth of the frames vary with typical depths of 6 inches in the main deck area, 8 inches in the upper deck area, and greater in depth in the lower lobe to provide support for the cargo floor. Attached to the frames at WL 199.8 307.5 are the floor beams which absorb the normal loads of seat tracks and floor panels plus the tension loads due to cabin pressurization.

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FUSELAGE SECTION 42

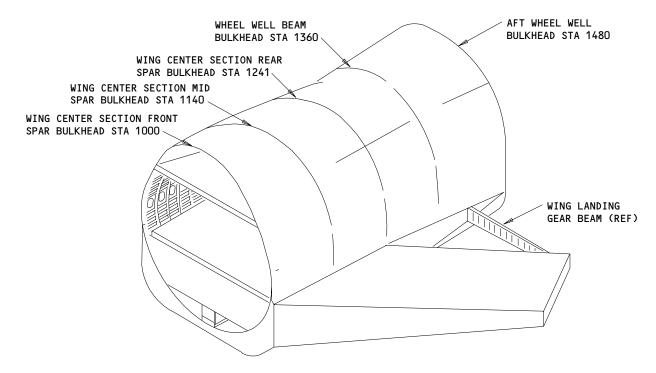
Center Fuselage, Sections 42, 44 and 46 Figure 1 (Sheet 1)

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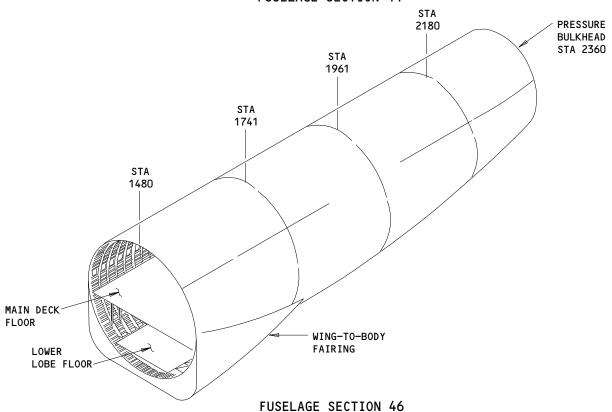
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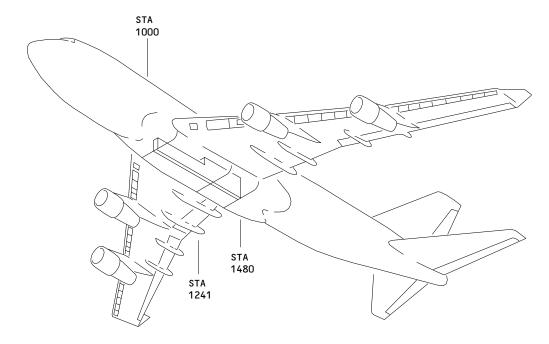
FUSELAGE SECTION 44

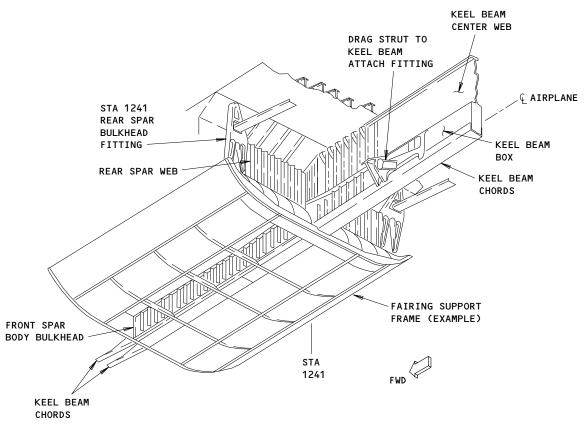


Center Fuselage, Sections 42,44 and 46 Figure 1 (Sheet 2)

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Keel Beam Figure 2

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On Page 4
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3. Bulkheads (Fig. 1)

Section 42 contains no bulkheads. Section 44 contains five bulkheads: the forward four are of the reinforced frame type. Station 1000 bulkhead attaches to the wing center section forward spar with fittings spliced into the lower portion of the frame. The portion of this bulkhead below the wing center section forward spar is canted the same as the forward spar and forms a flat pressure surface between the forward cargo compartment and the air conditioning compartment. Station 1140 and 1241 bulkheads are of a similar design except that they splice into, respectively, the wing center section mid spar and wing center section aft spar. Station 1350 bulkhead is a typical bulkhead with stiffeners and a flap machined web across the area between the wind landing gear well and the body landing gear well. It is attached to the landing gear bearm at the outboard ends. Station 1480 bulkhead is a typical bulkhead with stiffeners and flat webs across the area between the lower fuselage contour and the main deck. This area forms a pressure surface between the aft cargo compartment and the main body gear wheel well and also provides the aft wall to the main landing gear wheel well and the torque boxes. There are no bulkheads in section 46.

4. <u>Stringers</u>

- A. Fuselage stringers are the longitudinal primary structure members extending the length of the airplane, interrupted only by production breaks, bulkheads, and structural openings. The stringers in the fuselage center section are typically of aluminum alloy and are hat-sections. Attachment of the stringers is with shear head rivets to the skin and with modified H-section clips to the frames.
- B. Stringers in the upper one-fourth of section 42 are of formed hat-section construction from uniform thickness sheet. Stringers in the lower three-fourths of section 42 are formed from sheets of varying thicknesses; the thickness determined by local stress levels. The upper stringers in section 44 are formed from heavy sheet of varying thicknesses; basic thickness is reduced as the stringers circumferentially approach the wing. In section 46, the side stringers are formed from a medium gage sheet with varying thicknesses; and the stringers in the crown (top) are from a heavy sheet of varying thicknesses. The lower stringers in section 46 are machined from extrusions with thicknesses tapered as required to meet structural requirements.

5. Floor-to-Skin Shear Ties

- A. The floor-to-skin shear ties extend along both sides of the fuselage, lever with the floor at each deck. Two types of shear ties are used. A punched and formed sheet metal type is most common but a truss-type is used where decompression venting provisions are required. The shear ties are attached to fuselage skin stringers, floor beams, and body frame.
- B. The floor-to-skin shear ties of sections 42 and 46 are the same. There are no floor-to-skin shear ties in section 44.

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6. <u>Keel Beam</u> (Fig. 2)

- A. The keel beam consists of two main assemblies, the underwing keel beam from the forward to the rear wing center section spar, and the keel beam dividing the main landing gear wheel wells from station 1241 (rear spar) to 1480.
- B. The underwing keel beam consists of a pair of high strength aluminum alloy compression chords 18.0 inches apart stabilized by shear webs from the chords to T-chords attached to the lower surface of the center wing section. Additional stabilization is acquired by 0.25 inch thick diagonal tie braces from the compression chords to the T-chords. Horizontal stabilization is attained by a shear web attaching the two compression chords.
- C. The keel beam from stations 1241 to 1480 consists of a pair of high strength aluminum alloy compression chords spliced to the keel beam chords from the underwing keel beam and stabilized by a rectangular box structure. The box structure consists of shear webs, stiffeners, and diaphragm bulkheads. A shear web containing stiffeners to prevent buckling is installed between the main deck floor and the top of the keel beam aft of the wing rear spar to station 1480.

7. Passenger Compartment Window Opening Reinforcements

- A. Window openings in the skin are reinforced by doublers and high strength forged window frames. Extruded T-section stiffeners are attached to the upper and lower edges of the window frames.
- B. The window opening reinforcements in sections 42, 44, and 46 on the main deck are basically the same. Doubler and window frame thickness increase with appropriate increases in stress level where adjacent to large cutouts or bulkheads.

8. Door Opening Reinforcements

- A. The passenger door openings are surrounded by doublers and skins machined from aluminum plate which are bonded or fay sealed and riveted together. Openings surrounding the cargo doors are similarly reinforced. A fay sealed doubler also surrounds the center electrical/electronic equipment access hatch.
- B. Additional stringers, sills, straps, and frames have been added to these openings as required by local load conditions.

53-12-00



KEEL BEAM - INSPECTION/CHECK

1. General

- This procedure contains one task. The task is the inspection of the keel Α. beam.
- You get access to the keel beams through the wheel wells for the landing gear and the fuselage access panels.

TASK 53-12-01-206-001

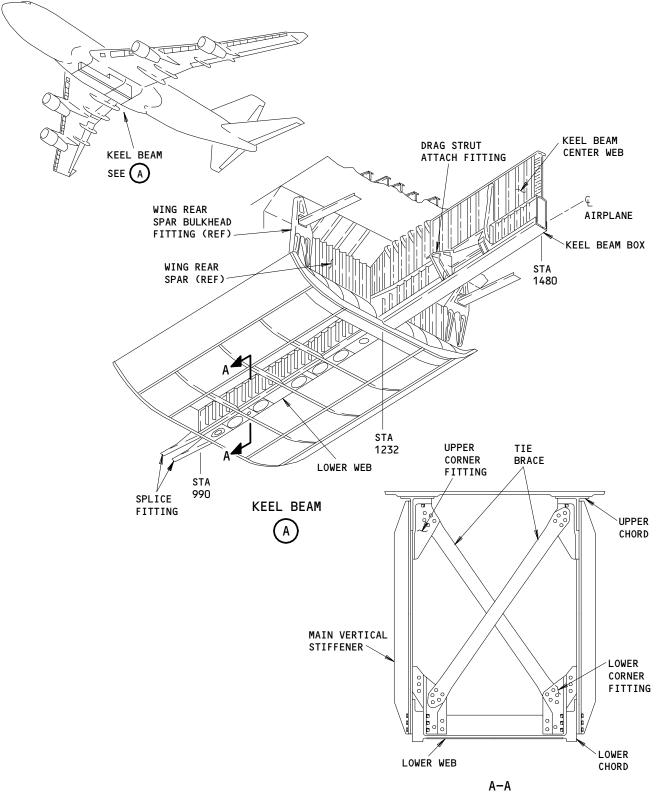
- The Keel Beam Inspection (Fig. 601)
 - References
 - (1) 32-00-30/201, Landing Gear Door Locks
 - Access
 - (1) Location Zone
 - Wing Landing Gear Well, Left 135
 - Wing Landing Gear Well, Right 136
 - Body Landing Gear Well, Left 137
 - 138 Body Landing Gear Well, Right
 - 129 Keel Beam
 - 139 Keel Beam
 - 149 Keel Beam
 - (2) Access Panel
 - 191GG Panel - Access - Keel Beam
 - Panel Access Keel Beam 191JJ
 - 191KK Panel - Access - Keel Beam
 - 193J Panel - Access - Keel Beam
 - 193K Panel - Access - Keel Beam
 - 193L Panel - Access - Keel Beam 193N Panel - Access - Keel Beam
 - 1930 Panel - Access - Keel Beam
 - 193P Panel - Access - Keel Beam
 - 193Q Panel - Access - Keel Beam
 - 193R Panel - Access - Keel Beam
 - 193S Panel - Access - Keel Beam
 - 193T Panel - Access - Keel Beam
 - 193U Panel - Access - Keel Beam
 - 191AL Door - Access - Air Conditioning
 - 192AR Door - Access - Air Conditioning
 - 191EL Panel - Access - Air Conditioning
 - Panel Access Air Conditioning 192ER
 - 191HL Door - Access - Air Conditioning
 - 192HR Door - Access - Air Conditioning 191ML
 - Panel Access Air Conditioning 192MR Panel - Access - Air Conditioning

EFFECTIVITY-

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53-12-01





Keel Beam Figure 601

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C. Procedure

s 416-007

(1) Install the door locks for the main landing gear (Ref 32-00-30/201).

s 216-003

- (2) Examine the external surfaces of the webs and the lower chords for the conditions that follow:
 - -Distortion
 - -The removal of paint
 - -Cracks
 - -Fasteners that are not there.

The vertical web of the keel beam, aft of the station line, NOTE: 1232 can contain wrinkles. These wrinkles do not decrease the structural quality of the keel beam.

s 216-004

(3) Examine the splice fittings at each end of the keel beam for cracks and fasteners that are not there.

s 216-009

(4) Examine the bulkhead fittings for cracks and fasteners that are not there.

s 216-008

(5) If you find these conditions on the external surface of the keel beam, examine the internal structure in the same area.

s 216-005

(6) Examine the keel beam for corrosion.

s 216-006

(7) Examine the drain holes with a 0.31-inch diameter for blockage.

NOTE: These drain holes are in the underwing keel beam.

EFFECTIVITY-

53-12-01

Page 603

ALL



FLAP-TO-BODY RUB STRIP - CLEANING/PAINTING

- 1. <u>General</u> (Fig. 701)
 - A. This procedure contains one task. The task is to paint the flap-to-body rub strip.
 - B. The flap-to-body rub strips attach to the wing-to-body fairing in the area of the trailing edge (TE) flaps. The rub strips prevent damage to the body skin by the inboard TE flap.
 - C. Paint the rub strips before you install them.

TASK 53-12-02-307-001

- 2. Paint the Flap-to-Body Rub Strip
 - A. Consumable Materials
 - (1) C00064 Alodine 1000
 - (2) C00259 Enamel Primer, Green, BMS 10-11
 - B. References
 - (1) 32-00-30/201, Landing Gear Door Locks
 - (2) 27-51-00/201, Trailing Edge Flap System
 - (3) 51-21-04/701, Alodized Surfaces
 - C. Access
 - (1) Location Zone

193 Fairing - Wing-to-Body, Aft, Lower Half, Left 194 Fairing - Wing-to-Body, Aft, Lower Half, Right

D. Procedure

s 497-003

WARNING: YOU MUST CAREFULLY DO THE STEPS IN THE TASK BELOW TO INSTALL THE DOOR LOCKS ON THE LANDING GEAR DOORS. THE DOORS CAN CLOSE QUICKLY IF YOU DO NOT INSTALL THE DOOR LOCKS CORRECTLY. THIS CAN CAUSE INJURY TO PERSONS OR DAMAGE TO EQUIPMENT.

(1) Install the door locks for the landing gear door (Ref 32-00-30/201).

s 867-014

(2) Fully extend the inboard TE flaps to get access to the rub strip area on the wing-to-body fairing (Ref 27-51-00/201).

s 867-015

WARNING: YOU MUST CAREFULLY DO THE STEPS IN THE TASK BELOW TO DEACTIVATE THE TE FLAPS. THE TE FLAPS CAN MOVE QUICKLY IF YOU DO NOT DO THIS TASK CORRECTLY. THIS CAN CAUSE INJURY TO PERSONS OR DAMAGE TO EQUIPMENT.

(3) Disconnect the power for the inboard TE flaps (Ref 27-51-00/201).

EFFECTIVITY-

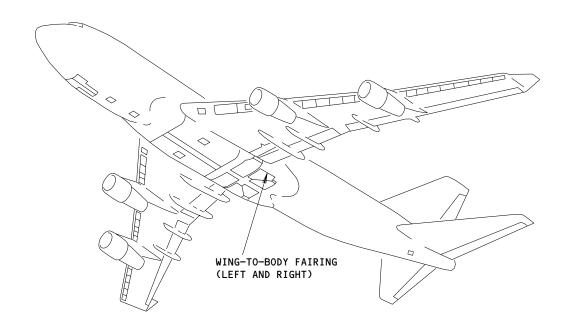
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Flap-to-Body Rub Strip Figure 701

279497

53-12-02

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s 027-005

(4) Remove the fasteners for the rub strips.

s 037-013

(5) Remove the rub strips.

s 377-006

(6) Apply Alodine 1000 on all surfaces of each rub strip (Ref 51-21-04/701).

s 377-007

(7) Apply primer only on the side of the rub strips that touch the fuselage skin.

s 427-008

(8) Install the rub strips.

s 867-009

(9) Move the TE flaps through one full cycle to make sure you have a smooth operation of the seals.

s 867-011

(10) Retract the TE flaps.

s 867-012

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WARNING: YOU MUST CAREFULLY DO THE STEPS IN THE TASK BELOW TO REMOVE THE DOOR LOCKS ON THE LANDING GEAR DOORS. THE DOORS CAN CLOSE QUICKLY IF YOU DO NOT REMOVE THE DOOR LOCKS CORRECTLY. THIS CAN CAUSE INJURY TO PERSONS OR DAMAGE TO EQUIPMENT.

(11) Remove the door locks for the landing gear doors (Ref 32-00-30/201).

EFFECTIVITY-

53-12-02



TAIL SECTION: STATION 2360 TO STATION 2792 - DESCRIPTION AND OPERATION

1. General (Fig. 1)

- A. The fuselage tail section, section 48, consists of the fuselage aft of station 2360. The tail section is not pressurized and contains the aft pressure bulkhead, vertical fin, and horizontal stabilizer attach fittings, and the Auxiliary Power Unit (APU). This section is divided into three main assemblies: the upper lobe from station 2360 to 2598 above WL 269.87; the lower lobe immediately below the upper lobe; and the section aft of station 2598.
- B. Maintenance panels installed to the aft, left, and right of the stabilizer jackscrew access door provide a platform on which to stand when performing maintenance in the area. The panels are finished with a walkway coating (Ref 51-24-09).
- C. The stabilizer to body seal track is formed from aluminum sheet and is riveted to the forward end of the stabilizer cutout fairing. The track is finished with an abrasion-resistant material (Ref 51-24-04).

2. <u>Bulkheads</u> (Fig. 1)

A. The aft pressure bulkhead for fuselage pressure envelope is at station 2360. This dome-shaped bulkhead is composed of pie-section webs spliced together and strengthened at the splices by radial stiffeners. The vertical fin front and rear spar attach bulkheads are at stations 2412 and 2517 respectively. Station 2598 bulkhead supports the horizontal stabilizer hinge fittings. The bulkhead at station 2658 is composed of titanium webs and chords, and provides an effective firewall between the APU and the rest of the airplane. The webs in all the section 48 bulkheads have numerous cutouts to provide openings for the routing of lines to the APU and other equipment.

3. <u>Stringers</u>

A. Stringers in section 48 extend from station 2360 pressure bulkhead aft to station 2658. The stringers are formed hat-sections. Attachment to the skin is with shear head rivets and to the frame with formed channel clips.

4. Frames

A. The frames are Z-shaped members of 7075 aluminum alloy and extend aft of station 2658. Bulkheads completely replace frames as circumferential structural members in the tail section forward of station 2658.

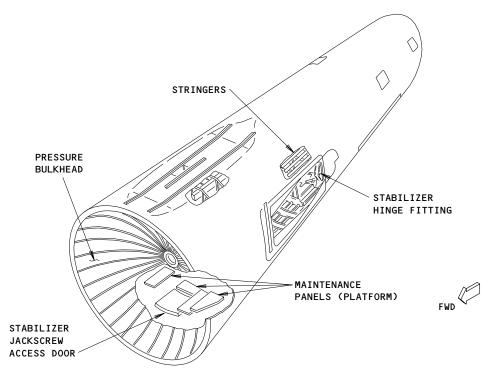
5. <u>Door Opening Reinforcements</u>

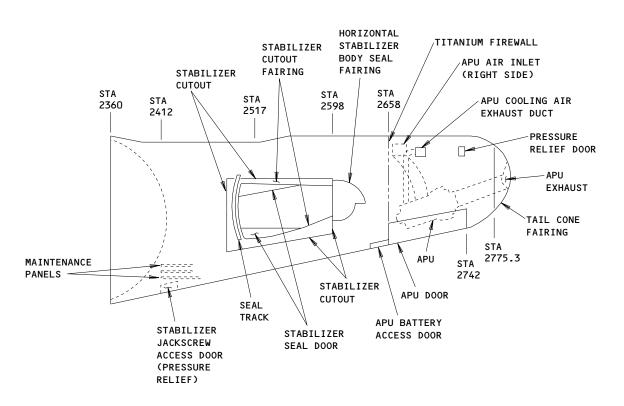
A. The openings around the two access doors and the APU door are reinforced primarily by the addition of stringers and frames. Skin assemblies surrounding these openings are of fail-safe metal-bond construction.

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Tail Section, Section 48
Figure 1

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6. <u>Doors and Openings</u>

- A. Access to section 48 interior is through three doors in the bottom of the fuselage. The forward door provides access to the stabilizer jackscrew and other equipment in the area. The door just forward of the APU access doors provides entrance to the APU battery (Ref 52-49-04 and 52-49-05). Beneath the APU is a clamshell type door with two halves opening outwards that provide access to the APU (Ref 52-48-02).
- B. The tail section aft of station 2658 has various doors and openings to support operation of the APU. An APU air inlet door is on the right side of the tail section and opens to permit operation of the APU or closes when the unit is shut off (Ref 49-15-00). An opening on the left side of the tail section permits APU cooling air to be exhausted overboard. On each side of the tail section is a spring-loaded pressure relief door that will open when excessive internal pressure develops. When the internal pressure diminishes, the doors will close. A louvered opening in the left pressure relief door and a screened opening in the left APU door vents the APU compartment to the atmosphere at all times. The APU exhaust is ejected through the exhaust shroud in the tail cone fairing.
- C. Stabilizer seal doors enclose a portion of the stabilizer cut out above and below the stabilizer center section. The seal door is constructed of glass fabric reinforced plastics and attaches to the stabilizer cut out fairing with two hinges. The other attach point on the door attaches to a link of the control mechanism that maintains the position of the seal door during movement of the stabilizer.

7. Fairings

- A. The stabilizer body seal fairing is riveted to the fuselage skin aft of the stabilizer cutout. The fairing streamlines the area and provides a surface for the seals that are attached to the stabilizer to contact, and rub against, during movement of the stabilizer. The fairing is constructed of glass fabric reinforced plastics.
- B. The stabilizer cutout fairing attaches to the longeron and frames that surround the stabilizer cutout area and provides structure to support the stabilizer seal doors and the seal track. A fabric-covered silicone rubber bulb-type seal is attached to the inboard side of the fairing and contacts the stabilizer seal door.
- C. The tail cone fairing forms the aft end of section 48 (Ref 53-50-00).

53-13-00



WHEEL WELLS - DESCRIPTION AND OPERATION

1. General

A. The nose gear and main gear wheel wells are compartments for housing the retracted landing gear. The compartments are not pressurized. Bulkheads and beams serve as supports for the landing gear attach fittings and related hydraulics and electrical equipment.

2. Nose Gear Wheel Well (Fig. 1)

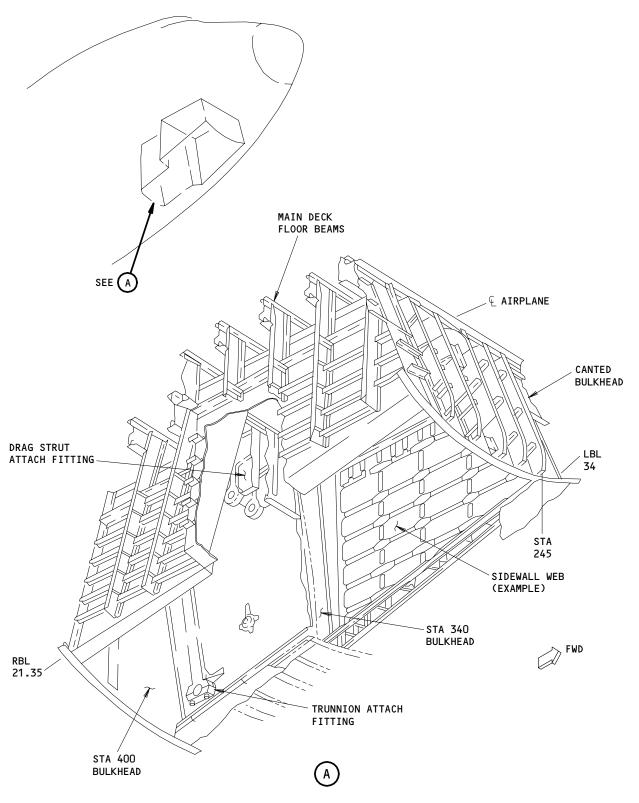
- A. The nose landing gear wheel well is in the lower portion of fuselage section 41 between stations 245 and 400. The wheel well consists of a forward and aft rigid box-like structure separated by the station 340 bulkhead. The forward wheel well extends from station 245 to 340 and LBL 34 to RBL 34. The aft wheel well extends from station 340 to 400 and LBL 21.35 to RBL 21.35.
- B. The forward wall of the wheel well is formed by the canted bulkhead at station 245, and the station 400 bulkhead forms the aft pressure wall. Sidewalls consist of webs with stiffening beams which are attached to the fuselage frames and floor beams. Wheel well top panel webs are attached to the underside of the main deck floor beams. The aft sidewalls are reinforced with aluminum plate and attached to station 400 bulkhead to carry the loads transmitted by the trunnion attach fittings. A transverse fitting located on the aft side of the drag strut fitting carries the load to the side skin panels.

3. Main Gear Wheel Well (Fig. 2)

- A. The main landing gear wheel well is in the lower fuselage of section 44 between stations 1241 and 1480. It houses the wing landing gear in the forward section and the body landing gear in the aft section. The landing gear beam bulkhead, at station 1350, divides the wheel well into the forward and aft sections. It is divided into left and right sections by the keel beam and center shear web. The forward and aft walls of the wheel well are formed by the wing center section rear spar bulkhead at station 1241, and the aft wheel well bulkhead at station 1480.
- B. Pressure barriers surround the main gear wheel well. The upper pressure barrier consists of the upper surface of the wing center section and the pressure web which extends aft from the wing center section rear spar to station 1480 bulkhead. The pressure web attaches to the underside of the main deck floor beams. The front spar bulkhead forms the forward pressure barrier and the aft wheel well bulkhead at station 1480 forms the aft pressure barrier.
- C. The landing gear beam extends transversely across the fuselage along station 1350 bulkhead. This beam provides a support for the wing landing gear aft trunnion and strut attach fittings. The aft wheel well bulkhead serves as the principal support for the body landing gear trunnion attach fittings; and the keel beam serves as the principal support for the body landing gear drag strut attach fittings.

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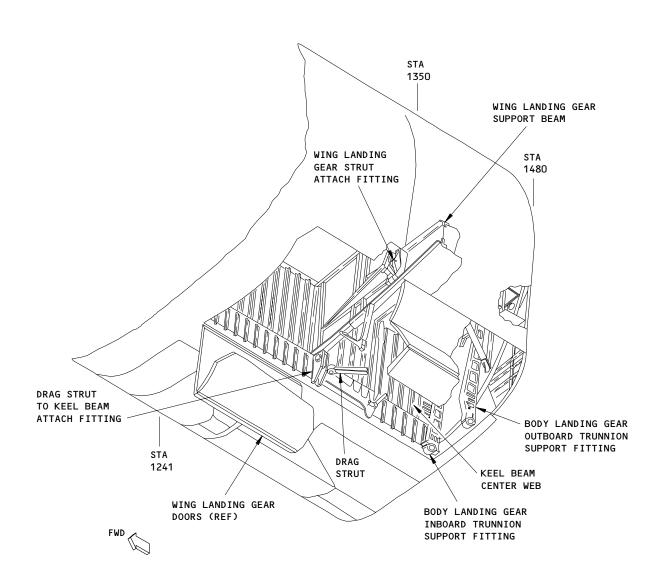
Nose Gear Wheel Well Figure 1

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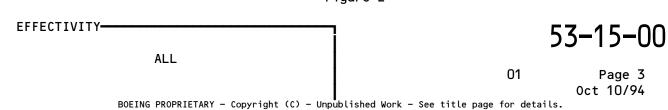
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Main Gear Wheel Well Figure 2





LANDING GEAR WHEEL WELL - INSPECTION/CHECK

1. General

A. This procedure contains one task. This task is the inspection of the wheel wells for the main and nose landing gears.

TASK 53-15-01-206-001

- 2. Examine the Wheel Wells
 - A. References
 - (1) 32-00-30/201, Landing Gear Door Locks

C. Examine the Wheel Wells for the Main Landing Gear

- B. Access
 - (1) Location Zone
 - Nose Landing Gear Wheel Well, Left
 Nose Landing Gear Wheel Well, Right
 Wing Landing Gear Wheel Well, Left
 Wing Landing Gear Wheel Well, Right
 Body Landing Gear Wheel Well, Left

Body Landing Gear Wheel Well, Right

s 496-002

138

WARNING: YOU MUST CAREFULLY DO THE STEPS IN THE TASK BELOW TO INSTALL
THE DOOR LOCKS ON THE LANDING GEAR DOORS. THE DOORS CAN CLOSE
QUICKLY IF YOU DO NOT INSTALL THE DOOR LOCKS CORRECTLY. THIS
CAN CAUSE INJURY TO PERSONS OR DAMAGE TO EQUIPMENT.

(1) Install the door locks for the main landing gear (Ref 32-00-30/201).

s 216-003

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- (2) Do the steps that follow to examine the wheel wells.
 - (a) Examine the bulkhead web and stiffeners for cracks, corrosion, and loose fasteners.
 - (b) Examine the main attach forgings for cracks and corrosion.

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- (c) Examine the rear spar web and stiffeners in the center of the wing for cracks, corrosion and loose fasteners.
- (d) Examine the part of the vertical pressure beams that attach to the deck structure for cracks and corrosion.
- (e) Examine the rear spar and stiffeners of the wing for cracks, corrosion, and loose fasteners.
- (f) Examine the main forgings for cracks and corrosion, specially in the area of the attach fittings and trunnions.
- (g) Examine the door hinges for cracks, corrosion, and loose fasteners.
- (h) Examine the support fittings for the door actuator for cracks, corrosion, and loose fasteners.
- (i) Examine the attach rod fittings for the door for cracks, corrosion, and loose fasteners.
- (j) Examine the pressure web at the top of wheel wells for cracks, corrosion, and loose rivets.
- (k) Examine the keel beam chords, webs, and stiffeners for cracks, corrosion, distortion, and loose fasteners.

NOTE: The vertical web of the keel beam, found aft of station 1232, can contain wrinkles. These wrinkles do not decrease the structural capacity of the keel beam.

(l) Examine the landing gear beam for cracks, corrosion, and loose fasteners.

s 096-010

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WARNING: YOU MUST CAREFULLY DO THE STEPS IN THE TASK BELOW TO REMOVE THE DOOR LOCKS ON THE LANDING GEAR DOORS. THE DOORS CAN CLOSE QUICKLY IF YOU DO NOT REMOVE THE DOOR LOCKS CORRECTLY. THIS CAN CAUSE INJURY TO PERSONS OR DAMAGE TO EQUIPMENT.

- (3) Remove the door locks for the main landing gear (Ref 32-00-30/201).
- D. Examine the Wheel Well for the Nose Landing Gear

EFFECTIVITY-

53-15-01



s 496-009

YOU MUST CAREFULLY DO THE STEPS IN THE TASK BELOW TO INSTALL WARNING: THE DOOR LOCKS ON THE LANDING GEAR DOORS. THE DOORS CAN CLOSE QUICKLY IF YOU DO NOT INSTALL THE DOOR LOCKS CORRECTLY. THIS CAN CAUSE INJURY TO PERSONS OR DAMAGE TO EQUIPMENT.

(1) Install the door locks for the nose landing gear (Ref 32-00-30/201).

s 216-007

- (2) Do the steps that follow to examine the wheel well:
 - (a) Examine the torque box lower skin forward of STA 400.
 - 1) Look for corrosion near the bulkhead.
 - 2) For airplanes with SB 51-2052, make sure the external drain is clean.
 - (b) Examine the side and top of the wheel well for the nose landing qear:
 - 1) Look for cracks and corrosion, specially close to the
 - Look for loose rivets, specially on the top.
 - 3) Look for cracks, corrosion, or distortion in the stiffeners.
 - Examine the trunnion fittings for distortion, cracks, corrosion, loose bolts and rivets, and the removal of paint.
 - Examine the support fittings for the door actuators for cracks, corrosion, and loose fasteners.
 - (e) Examine the support fitting for the nose gear actuator for cracks, corrosion, and loose fasteners.

s 096-011

ALL

YOU MUST CAREFULLY DO THE STEPS IN THE TASK BELOW TO REMOVE THE WARNING: DOOR LOCKS ON THE LANDING GEAR DOORS. THE DOORS CAN CLOSE QUICKLY IF YOU DO NOT REMOVE THE DOOR LOCKS CORRECTLY. THIS CAN CAUSE INJURY TO PERSONS OR DAMAGE TO EQUIPMENT.

(3) Remove the door locks for the nose landing gear.

EFFECTIVITY-

53-15-01



AUXILIARY STRUCTURE - DESCRIPTION AND OPERATION

1. General

A. The fuselage auxiliary structure comprises structure which does not carry primary loads. The major auxiliary structural components are described in the following paragraphs.

2. Upper Deck Floors

- A. The upper deck floor consists primarily of nomex honeycomb core sandwich panels with graphite facing sheets supported by floor beams and seat tracks.
- B. SOME AIRPLANES;

The stowage box contains the decompression vents and the blow-out door. The floor panels are cut to permit the installation of the stowage box with the decompression venting (AMM 25-28-15/401).

3. Main Deck Floors

- A. The main compartment floor consists of high density nomex honeycomb core panels with graphite facing sheets in areas of high usage, such as walkways, and lower density nomex honeycomb core panels with facing sheets in lesser stressed areas and nomex honeycomb core panels with fiberglass facing sheets in wet areas such as under galleys, lavatories and in entryways. The floor panels in the galley areas have fasteners installed from under the floor. These panels are supported by the seat tracks in the longitudinal direction and by the floor beams in the transverse direction.
- B. A readily removable main deck floor panel provides an inflight entry to the forward electronics bay. The panel is approximately 20 by 22 inches and is located at Body Station 420 and is centered on LBL 33.0. It is mechanically latched and may be removed from the passenger compartment or from the electronics bay below. Access to the panel and its flush handle is gained by removing the carpets above it. A flame-resistant silicone rubber seal encompasses the edges of the panel and overlaps onto the adjoining panels.

4. Lower Lobe Floors

- A. The forward and aft cargo compartment floors consist of walkways on each side plus crosswalks in each compartment. The walkways are composed of stiffened aluminum panels with an epoxy walkway coating on the upper surface. Crosswalks are part of the lateral beams. The crosswalks are also finished with the epoxy walkway coating.
- B. The bulk cargo compartment floor consists of aluminum panels (sheet) supported by Z-section and hat-section channels fastened to the fuselage frames.

5. Fixed Partitions

A. The control cabin partition separates the control cabin from the crew area. A flight compartment interior door is hinged to the partition.

53-20-00



6. COMBIS;

Overhead Lateral Beam

A. There is a removable lateral beam installed in the main deck ceiling just above door 4. The beam mounts to the airplane frame. The beam must be removed to carry cargo forward of door 4.

7. Passenger Cabin Sidewall Panels

A. Dado vent box modules are installed at various locations along the cabin sidewall in place of the dado panels. The vent box module incorporates a dado panel and a louvered air grille as part of a hinged and spring-loaded door. Normal airflow is through the air grille louvers. However, in the event of rapid cabin decompression the hinged door swings back into the sidewall to provide additional venting.

8. <u>Depressurization Panels</u> (Fig. 1)

- A. The forward compartment depressurization panels are nomex cores with fiberglass facings and are mounted in the bulkhead on each side of the E/E bay access door. The panels are held in place by springs and brackets which allow the panels to swing aft, creating an opening through which air will flow (Ref 25-52-00).
- B. The blowout panel for the aft cargo compartment is a 0.012-inch thick sheet of aluminum foil covering an air passage in the frame at the aft end of the compartment below floor level. The foil sheet is cemented to the frame by eight dots of adhesive to allow limited breakaway strength.

9. <u>Inflight Depressurization Venting Components</u>

- A. Floor panel mounted depressurization blowout panels are installed in selected areas on the main deck. The panels are protected by wire grille cages (AMM 53-21-07/601).
- B. The sidewall dado vent boxes in the cabin area are installed in the sidewall. Dado vent box modules are spring-loaded hinged panels designed to swing back into the panel to provide additional venting (AMM 25-21-01).
- C. The cargo compartment sidewall linings in the forward and aft compartments are designed to serve as depressurization panels. The attachment allows the panel to blow inward to allow airflow into the compartment.
- D. AIRPLANES WITH DECOMPRESSION VENTS IN THE LOWER LOBE CARGO COMPARTMENT; There are decompression vents on the sidewall lining in the fwd and aft cargo compartment. They are protected by the flow thru vent.
- E. The ceiling linings in the bulk cargo area are designed to serve as depressurization panels. The attachment allows the panels to blow downward to allow airflow into the compartment.

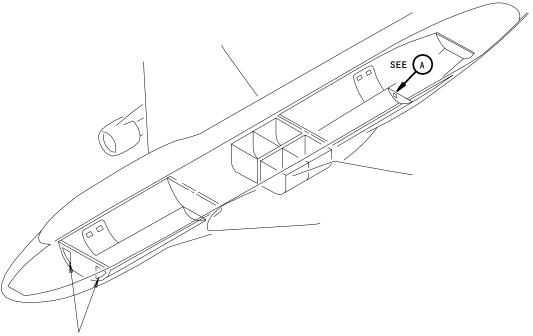
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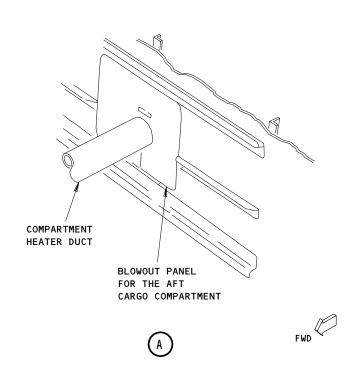
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FORWARD CARGO COMPARTMENT DEPRESSURIZATION PANELS



Depressurization Panels Figure 1

53-20-00

01

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DEPRESSURIZATION BLOWOUT PANEL - REMOVAL/INSTALLATION

1. General

- A. This procedure has two tasks, one for the removal and one for the installation of the depressurization blowout panel.
- B. It is necessary to replace the aluminum foil of the depressurization blowout panel when the differential pressure is sufficient to break the foil.
- C. The depressurization blowout panel will be referred to as the blowout panel.
- D. The blowout panel is found in the bulkhead between the containerized cargo area and the bulk cargo area, below the floor level. The access is from the containerized cargo area.
- E. It is necessary to remove the ball transfer panel between the floor beams and the bulkhead. You must do this to get access to the blowout panel which is near the bulkhead.

TASK 53-20-01-004-001

- 2. <u>Depressurization Blowout Panel Removal</u>
 - A. Consumable Materials
 - (1) B00148 Solvent Methyl Ethyl Ketone (MEK), TT-M-261
 - B. References
 - (1) AIPC 21-44-51 Fig. 1
 - C. Access
 - (1) Location Zones

141 Aft Cargo Container Compartment, Left142 Aft Cargo Container Compartment, Right

D. Procedure

s 014-002

(1) Remove the ball transfer panel that is between the floor beams and near to the bulkhead.

NOTE: The bolts that connect the ball transfer panel are different in lengths. Write the locations of the bolt.

s 014-003

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(2) Remove a part of the insulation around the blowout panel.

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s 024-004

(3) Pull the foil from the adhesive dots.

s 144-005

(4) With the plastic or wood scraper, remove as much of the adhesive as possible from the frame.

NOTE: You must not cause scratches to the frame finish.

s 114-009

WARNING: DO NOT GET SOLVENTS IN YOUR MOUTH, OR YOUR EYES, OR ON YOUR SKIN. DO NOT BREATHE THE FUMES FROM SOLVENTS. SOLVENTS ARE HAZARDOUS MATERIALS. SOLVENTS MAY BE FLAMMABLE OR HARMFUL TO THE ENVIRONMENT. REFER TO PRODUCT MATERIAL SAFETY DATA SHEETS (MSDS) AND LOCAL REQUIREMENTS FOR PROPER HANDLING PROCEDURES.

(5) Remove all the remaining adhesive with solvent , Series 92 (AMM 20-30-92) .

TASK 53-20-01-404-007

- 3. <u>Depressurization Blowout Panel Installation</u>
 - A. Consumable Materials
 - (1) A00247 Sealant BMS 5-95
 - (2) G00989 Foil Aluminum, 0.012 inch thick
 - B. References
 - (1) AIPC 21-44-51 Fig. 1
 - C. Access
 - (1) Location Zones

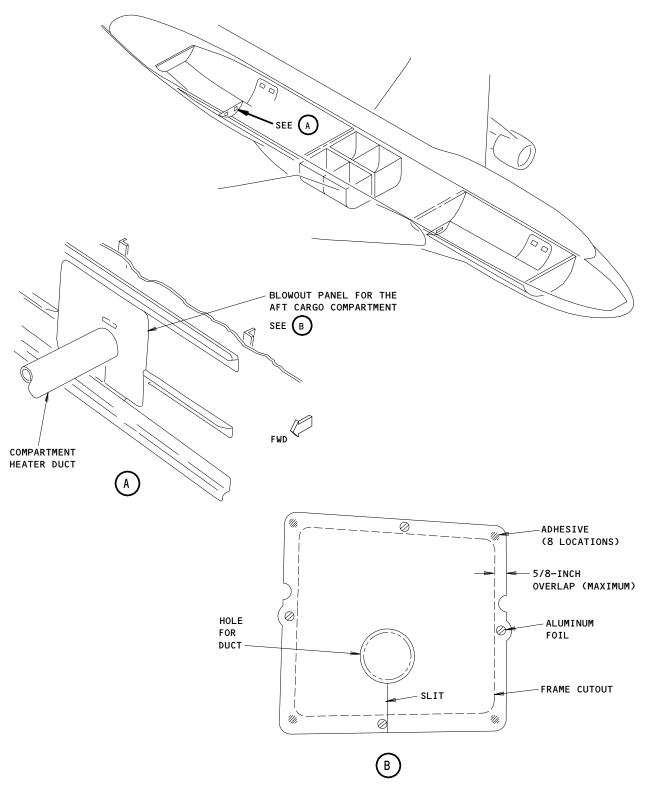
141 Aft Cargo Container Compartment, Left 142 Aft Cargo Container Compartment, Right

- D. Procedure
 - s 424-008
 - (1) Install the blowout panel (Fig. 401).
 - (a) Cut the foil as shown and cut a hole to install the cargo heating duct.
 - (b) Cut a slot in the foil as shown to permit the installation on the duct.
 - (c) Apply eight thin and smooth points of the sealant (approximately 0.05-inch diameter) to the frame.
 - (d) Apply eight thin and smooth points of the sealant to the aluminum foil at points that will align the sealant on the frame.

EFFECTIVITY-

53-20-01





Blowout Panel Installation Figure 401

ALL

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(e) Put the foil on the duct and push the mating surfaces of the sealant together.

NOTE: Keep the foil as flat and as smooth as possible.

EFFECTIVITY-

ALL

53-20-01

01

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MAIN AND UPPER DECK FLOOR - REMOVAL/INSTALLATION

1. General

- A. This procedure contains two tasks:
 - (1) The removal of the main and the upper deck floor panels.
 - (2) The installation of the main and the upper deck floor panels.
 - (3) You must do these steps to remove the floor panel:
 - Remove the equipment
 - Remove the carpet
 - Break the water seals (if it is necessary)
 - Remove the fasteners.
 - (4) You must do these steps to install the floor panel:
 - Clean the structure
 - Examine the condition of the cork tape
 - Install the panel
 - Seal the panels (where it is necessary)
 - Install the carpet
 - Install the equipment which you removed.
- B. In wet areas, for example the galleys, the lavatories and around the doors, the joints between the floor panels are sealed. In the galleys, the sealant can cause the panel to be damaged when it is removed. You can use these procedures to seal the area:
 - (1) The sealant that can be applied into the joint
 - (2) The vinyl tape can be applied on the joint
 - (3) The vinyl tape can be applied on the floor area
 - (4) Painted-on sealant can be applied to the floor area
 - (5) A mixture of the types shown before.
- C. You must seal the new floor panels exactly like the old ones were sealed.

TASK 53-21-02-004-001

- 2. Floor Panel Removal
 - A. Equipment
 - (1) Spatula made of wood or plastic
 - B. References
 - (1) AMM 25-27-01/401, Main Deck Floor Covering
 - (2) AIPC 53-21-00

ALL

EFFECTIVITY-

53-21-02



- C. Access
 - (1) Location Zone Cabin - Main and Upper Deck
- D. Procedure

s 014-002

(1) Remove the equipment when it is necessary.

s 014-003

(2) Remove the carpets above the panels (AMM 25-27-01/401).

s 034-017

- (3) Break the seals.
 - (a) If the panel is sealed with the vinyl tape, do these steps:

CAUTION: BE CAREFUL WHEN YOU CUT THE VINYL TAPE. MAKE SURE YOU DO NOT CUT TOO DEEP. DAMAGE CAN OCCUR TO THE STRUCTURAL SURFACE IF YOU CUT TOO DEEP.

 Cut through the vinyl tape along the edges of the floor panel.

CAUTION: BE CAREFUL WHEN YOU CUT THE VINYL TAPE. MAKE SURE YOU DO NOT CUT TOO DEEP. DAMAGE CAN OCCUR TO THE FLOOR PANEL IF YOU CUT TOO DEEP.

- 2) Cut away circular patches of the vinyl tape at each fastener location.
- (b) If the joints between the panels have the vinyl tape on them, remove the vinyl tape installed at the edges of the panel.
- (c) If sealant has been injected between the panels, look for a nylon cord which extends from the joint.
 - 1) If a nylon cord is found, pull the nylon cord in a direction that is parallel and near to the floor to break the seal.

EFFECTIVITY-

ALL

53-21-02

01.101



CAUTION: USE HARDWOOD OR PLASTIC CUTTING TOOLS. DO NOT USE METAL CUTTING TOOLS. METAL CUTTING TOOLS CAN DAMAGE THE STRUCTURAL SURFACE.

If the nylon cord is not found, cut the sealant with a knife.

<u>NOTE</u>: Use care and caution when cutting and removing the sealant so you do not damage the panel.

- (d) If the floors have a continuous, painted-on sealant:
 - 1) Remove the cargo lining in the cargo bay to get access to the area below the panel (AMM 25-52-01/401).
 - 2) Remove the fasteners that attach the panel.

CAUTION: BE CAREFUL WHEN YOU REMOVE THE FLOOR PANEL. DAMAGE CAN OCCUR TO THE FLOOR PANELS IF YOU APPLY TOO MUCH FORCE. IT COULD BE NECESSARY TO USE A NEW PANEL IF THE PANEL IS DAMAGED.

3) Remove the panel.

TASK 53-21-02-404-006

- . Floor Panels Installation
 - A. Consumable Materials
 - (1) A00326 Sealant MIL-S-46163, Type III, Grade R, Flexane 80
 - (2) A00247 Sealant BMS 5-95
 - (3) A02315 Sealant BMS 5-142
 - (4) A00955 Sealant BMS 5-26
 - (5) G50045 Tape Chloroprene, BMS 1-11
 - (6) G50037 Tape cork/rubber, MIL-T-6841
 - (7) G00125 Tape Wide Vinyl
 - (8) G00040 Cord nylon, V-T-295, Type I, Class A, Size 9
 - (9) G00125 Tape Permacel P-306 vinyl
 - (10) B00148 Solvent Methyl Ethyl Ketone (MEK)
 - (11) COO261 Primer Corrosion Preventive
 - (12) G00009 Corrosion Inhibitor Dinitrol AV8 Type II, BMS 3-23
 - (13) C00953 Primer Flexane FL-20
 - B. References
 - (1) AMM 25-27-01/401, Main Deck Floor Covering
 - (2) AMM 51-24-09/701, Nonskid Surface Paint
 - (3) AMM 51-31-01/201, Seals and Sealing
 - (4) AIPC 53-21-00
 - C. Access
 - (1) Location Zone

Cabin - Main and Upper Deck

D. Install the Floor Panel

 53-21-02

01.101



S 914-025

- (1) Install the cork Tape:
 - Make sure the cork tape between the mating surfaces has not been damaged.
 - 1) If the cork tape is damaged, remove the damaged tape.

DO NOT GET SOLVENTS IN YOUR MOUTH, OR YOUR EYES, OR **WARNING:** ON YOUR SKIN. DO NOT BREATHE THE FUMES FROM SOLVENTS. SOLVENTS ARE HAZARDOUS MATERIALS. SOLVENTS MAY BE FLAMMABLE. REFER TO PRODUCT MATERIAL SAFETY DATA SHEETS (MSDS) AND LOCAL REQUIREMENTS FOR PROPER HANDLING PROCEDURES.

- Make sure the mating surfaces are clean (AMM 51-31-01/201).
 - When you clean the mating surfaces, do not NOTE: remove any of the BMS 3-23 corrosion inhibiting compound that has been applied to the floor structure. BMS 3-23 corrosion inhibiting compound could have been applied to repaired floor structure and it must remain in place. Be careful when you install the floor panel so the cork tape is in the correct position.

NOTE: If you remove some of the BMS 3-23 from the floor structure, replace it with Dinitrol AV8 Type II or equivalent per BMS 3-23.

- Apply the new cork tape if it is necessary.
 - NOTE: Optional tape materials BMS 1-11 can be used as an alternative to the cork tape. These materials will vary in thickness for floor leveling and drainage.

NOTE: If you attach the tape to the floor panel as an alternative to the structure, you can remove the panels many times without replacement of the tape.

4) Remove the protective paper from the adhesive.

EFFECTIVITY-

ALL

53-21-02



5) Put the new tape into position.

NOTE: As an alternative to the installation of the tape to the floor structure, it is permitted to install the tape to the lower surface of the floor panel. This alternative is not permitted on the edges of the floor panel except when the panel attaches to a crowned seat track.

NOTE: If it is necessary to install a new floor panel and the old floor panel had rubatex tape applied on the lower surface, make sure you install new cork tape on the lower surface of the new panel.

6) If it is necessary to splice the tape ends together, make sure no gaps occur.

s 424-008

- Install the floor panel:
 - (a) Where the sealant was put between the panels, remove the sealant from the panel and the structure.
 - In the area of the canted pressure bulkhead and the center section upper wing, remove all contamination and clean the area.
 - Make sure that no contamination (e.g., nuts, washers, rivets or bolts) is in the drain valves.
 - Apply a layer of grease to the floor beams holes before you install the floor panel fasteners.

If clipnuts are used and were removed, then apply a corrosion inhibiting compound to the floor structure at the clipnut location and install the new primed clipnuts (preferred BACN11K() optional BACN10YD ()G). Be careful when you install the clipnuts to prevent scratches on the floor support structure.

- (e) Put the bolts into the floor panel.
 - Start all the bolts before you tighten them. NOTE: Bolts of two different lengths are used to hold some of the floor panels. The longer bolt locations are shown on the face of the panels by a triangular mark. A note is written on the face of the panels.

EFFECTIVITY-

ALL

53-21-02



NOTE: If you replace a stud in one of the blind fasteners, tighten the new stud to 12-18 pound-inches.

- (f) Tighten the floor panel bolts.
 - 1) If the cork gasket on the support structure is not replaced, tighten the bolts to 13-15 pound-inches.
 - If the cork gasket on the support structure is replaced, tighten the bolts to 30-35 pound-inches.
- E. Passenger Airplanes -- Seal the Floor Panels (Fig. 401)

s 404-055

(1) Apply Flexane FL-20 primer between floor panel seams.

s 394-020

- In the galley areas, add the Flexane 80 or BMS 5-95 or BMS 5-142 (2) sealant between the panels.
 - (a) If you use BMS 5-95, apply to a maximum depth of 0.10 inch.

Do not apply BMS 5-95 to the edges of the floor panel NOTE: above the 0.10 inch depth.

- (b) Apply the Flexane 80.
 - 1) If you only apply Flexane 80, put the nylon cord around the edges of the panel (Fig. 401).

s 394-022

(3) Prepare for Sealing.

s 954-019

- (4) Apply the masking tape to the surface of the panel 0.50 inches away each side of the joint.
 - s 394-018

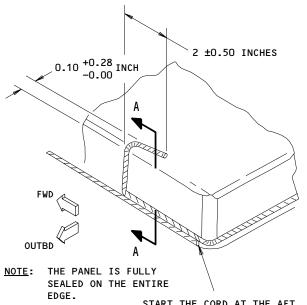
ALL

- CAUTION: DO NOT CAUSE A BLOCKAGE WHEN YOU APPLY SEALANT NEAR OR AROUND THE FUSELAGE DRAIN HOLES, TUBES, OR PATHS. THE FUNCTION OF THE DRAIN HOLES IS TO DRAIN CONDENSATION AND FLUIDS OVERBOARD. IF YOU CAUSE A BLOCKAGE, FLUIDS WILL COLLECT IN THE AIRPLANE. THE FLUIDS CAN CAUSE CORROSION TO THE STRUCTURE, OR A FIRE IF THE FLUIDS ARE FLAMMABLE.
- (5) Apply the Flexane 80 with a flow gun or spatula. Make sure there are no air bubbles when you apply the sealant.

EFFECTIVITY-

53-21-02



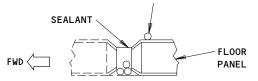


FLOOR PANEL THE PANEL IS NOT NOTE: FULLY SEALED AT THE EDGE. THE END OF THE SEALED AREA. THE

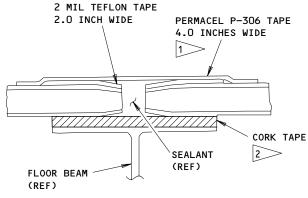
TWO ENDS OF THE CORD CAN STOP ANY PLACE ON THE PANEL EDGE.

START THE CORD AT THE AFT, OUTBOARD CORNER OF THE PANEL. INSTALL IT AS TIGHT TO THE PANEL AS POSSIBLE. WIND THE CORD CLOCKWISE ONE FULL TURN PLUS OVERLAP AS SHOWN.

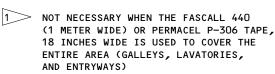
PUT THE CORD ON THE TOP SIDE OF THE PANEL AND SEAL IT TO PREVENT WICKING

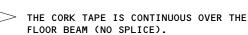


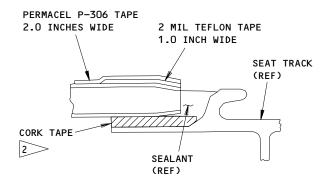
SEALANT AND CORD INSTALLATION A-A



TAPE INSTALLATION A-A







TAPE INSTALLATION A-A

Cord and Tape Installation (Example) Figure 401

EFFECTIVITY-ALL

53-21-02

02

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S 354-032

(6) Use a spatula to make the seal smooth with the masking tape.

s 354-031

(7) Remove the masking tape after the seal is smooth or let the masking tape stay during the curing time.

s 354-030

- Make the edges of the seal smooth.
 - Remove all the unwanted compound with a wooden or plastic tool.
 - Apply Flexane 80 to the countersunk part of the bolt heads on the panel hole to the level with the surface of the panel.

s 394-027

- (9) In the lavatory and around the door areas put the BMS 5-95 sealant between the panels.
 - Put the nylon cord around the edges of the panel (Fig. 401).
 - Fill the joint between the panels with BMS 5-95 to the level with the top of the floor panel.
 - Apply the BMS 5-95 sealant to the countersunk part of the bolt head or panel hole to level with the surface of the panel.

s 354-009

(10) Where the floor had vinyl tape (the water barrier is made of large vinyl tape), replace the water barrier.

s 354-010

(11) Where only the joints between the panels have a large vinyl tape, install the new vinyl tape on the panel joints (Section A-A).

s 374-011

(12) Where the floor has a continuous, painted-on sealant, apply new paint to the panel (AMM 51-24-09/701).

s 414-012

ALL

(13) Install the cargo lining which you removed.

EFFECTIVITY-

53-21-02



F. Put the Airplane to Its Usual Condition

s 414-013

(1) Install the carpets (AMM 25-27-01/401).

s 414-014

(2) Install all the equipment which you removed.

EFFECTIVITY-

ALL

53-21-02



LOWER LOBE FLOOR - INSPECTION/CHECK

1. General

- This procedure has one task. This task gives instructions for a visual inspection of the lower lobe floor.
- The lower lobe floor has walkways in the forward and aft cargo compartments. Also these walkways are in the bulk cargo compartment. The walkways and the floor panels consist of clad aluminum or aluminum extrusions.
- C. The walkways and the floor panels are attached to the structure with screws. You do not have to apply the sealant to install the walkways or the floor panels.

TASK 53-21-03-206-001

- 2. Lower Lobe Floor Inspection/Check
 - References
 - (1) 51-24-09/701, Nonskid Surface Paint
 - B. Access
 - (1) Location Zones
 - Forward Cargo Container Compartment, Forward Half, Left 121
 - Forward Cargo Container Compartment, Forward Half, Right 122
 - 123 Forward Cargo Container Compartment, Aft Half, Left
 - 124 Forward Cargo Container Compartment, Aft Half, Right
 - Aft Cargo Container Compartment, Left 141
 - 142 Aft Cargo Container Compartment, Right
 - 145 Bulk Cargo Compartment, Left
 - Bulk Cargo Compartment, Right 146

C. Procedure

s 216-003

Examine the floor panels, the walkways, and the tiedown fittings for cracks, corrosion or loose fasteners.

s 216-004

ALL

- Examine the surface of the walkways for damage.
 - (a) Do this task to repair the surface of the walkways: "Nonskid Surface" (Ref 51-24-09/701).

EFFECTIVITY-

53-21-03



DOOR NO. 4 LATERAL BEAM - REMOVAL/INSTALLATION

1. General

A. This procedure has two tasks. One for the removal and one for the installation of the lateral beam for the door No. 4.

TASK 53-21-04-004-005

- 2. <u>Door No. 4 Lateral Beam Removal</u> (Fig. 401)
 - A. References
 - (1) 25-31-04/401, Galley Removal/Installation
 - B. Access
 - (1) Location Zones
 - 251 Passenger Cabin, Third to Fourth Door Left
 - 252 Passenger Cabin, Third to Fourth Door Right
 - C. Procedure

s 034-007

(1) Remove the galley and the other furnishings (Ref 25-31-04/401).

s 034-008

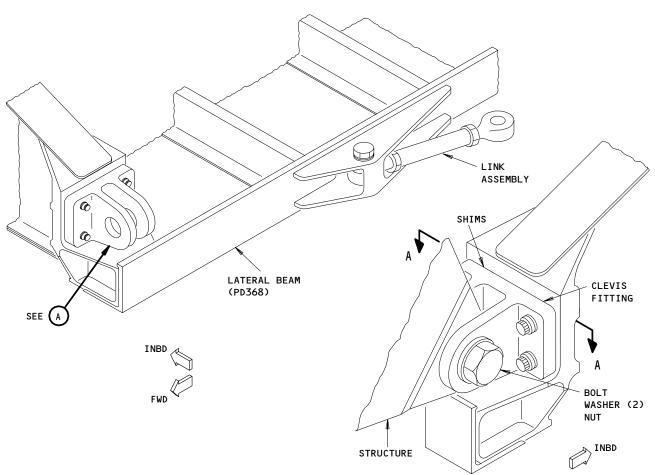
(2) Disconnect all the tubes and wires from the lateral beam.

s 024-002

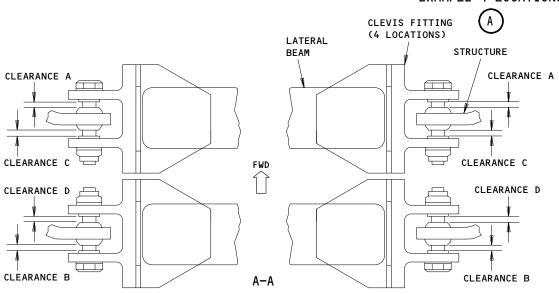
- (3) Remove the lateral beam.
 - (a) Supply the support for the lateral beam.
 - (b) Remove the nuts, the washers and the bolts to disconnect the four link assemblies from the attachment fittings of the airplane frame.
 - (c) Turn the links inboard from the fuselage attachment fittings.
 - (d) Put the bolts, the washers and the nuts into the rod end.
 - (e) Connect the links to the lateral beam with the tape.
 - (f) Remove the nuts, the washers, and the bolts from the four corners of the lateral beam to disconnect it from the airplane structure.
 - (g) Lower the lateral beam.
 - (h) Put the bolts, the washers and the nuts into the clevis fitting.

53-21-04





EXAMPLE 4 LOCATIONS



Door Number 4 Lateral Beam Installation Figure 401

EFFECTIVITY 53-21-04

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TASK 53-21-04-404-006

- 3. <u>Door No. 4 Lateral Beam Installation</u> (Fig. 401)
 - A. References
 - (1) 25-31-04/401, Galley Removal/Installation
 - B. Access
 - (1) Location Zones
 - 251 Passenger Cabin, Third to Fourth Door Left
 - 252 Passenger Cabin, Third to Fourth Door Right
 - C. Procedure

s 424-003

- (1) Install the lateral beam:
 - (a) Remove and keep the nuts, the washers, and the bolts from the four clevis fittings.
 - (b) Lift the lateral beam into its position and give support.
 - (c) Connect one of the two corners of the lateral beam to the airplane structure with the bolts, the washers, and the nuts.
 - (d) Connect the opposite side of the lateral beam.
 - Install the bolts, the washers, and the nuts to connect the clevis assembly to the airplane structure.
 - 2) If the holes in the clevis fitting do not align with the holes in the structure, remove the clevis fitting.
 - Add or remove the shims below the clevis fitting that are necessary to align the bolt holes.

NOTE: The maximum shim thickness on a clevis fitting is 0.25 inch. Install the shims that are necessary on the opposite clevis fitting. The total shim thickness must not be more than 0.50 inch for the two sides of the lateral beam.

- 4) Install the clevis fittings on the lateral beam.
- (e) Remove and keep the nuts, the washers and the bolts from the four rod ends.
- (f) Install the links on the airplane frame.
 - Attach two forward or aft links to the aircraft frame with the bolts, the washers and the nuts.

NOTE: If it is necessary, adjust the length of each link to permit the installation of the bolt. The thread engage at the two ends must be equal.

2) Measure the clearance between the clevis fitting and the airplane frame fitting (Section A-A, Fig. 401).

COMBIS

53-21-04



3) Adjust the rod length when it is necessary, to supply the correct clearances.

NOTE: The difference between clearances A and B must be less than 0.02 inch. All clearances A, B, C and D must be more than 0.03 inch.

- 4) Tighten the locknuts on links and install the safety wire.
- 5) Install the two remaining links and connect with the bolts, the washers and the nuts.
- 6) Adjust the rods when it is necessary.
- D. Put the airplane to its usual condition.

s 034-009

(1) Remove the support from the lateral beam.

s 434-010

(2) Make sure you install all the electrical wires, tubes in the galley and furnishings (Ref 25-31-04/401).

53-21-04



E/E BAY ACCESS PANEL, MAIN DECK - REMOVAL/INSTALLATION

1. General

- A. This procedure contains instructions for the removal and the installation of the E/E bay access panel in the main deck floor. This procedure also contains instructions for the opening and closing of the E/E bay access panel safety net.
 - (1) You will do these steps to remove the access panel:
 - Remove the carpet which is on the panel
 - Remove the panel.
 - (2) You will do these steps to install the access panel:
 - Install the panel
 - Install the carpet.
- B. The electronic equipment bay access door is located approximately 3 feet outboard of the airplane centerline at body station 420, below the carpet.

TASK 53-21-05-004-001

- 2. E/E Bay Access Panel Removal
 - A. References
 - (1) AMM 25-27-01/401, Main Deck Foor Covering
 - (2) AIPC 53-21-75, Fig. 2
 - B. Access
 - (1) Location Zone

212 Forward Cabin, Nose to Body Station 450.

C. Procedure

s 014-002

CAUTION: DO NOT CUT THE CARPET TO GET ACCESS TO THE E/E BAY ACCESS PANEL. IF YOU CUT THE CARPET, YOU COULD CAUSE DAMAGE TO THE PANEL.

(1) Remove part of the carpet on the access panel.

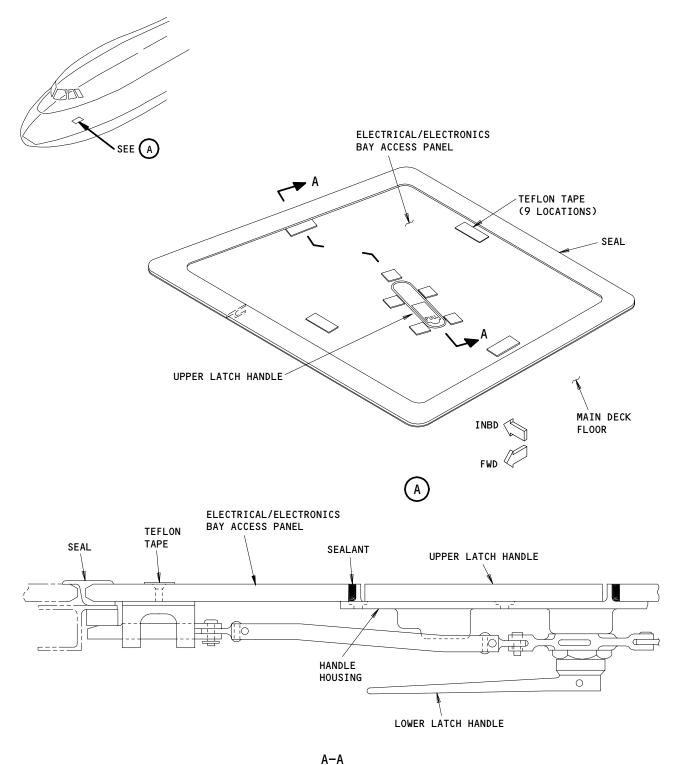
s 034-009

- (2) If the carpet is not cut out for the panel access, remove the carpet.
 - (a) Loosen the carpet from the seam at the forward edge of No. 1 main entry door.

EFFECTIVITY-

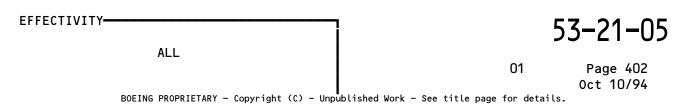
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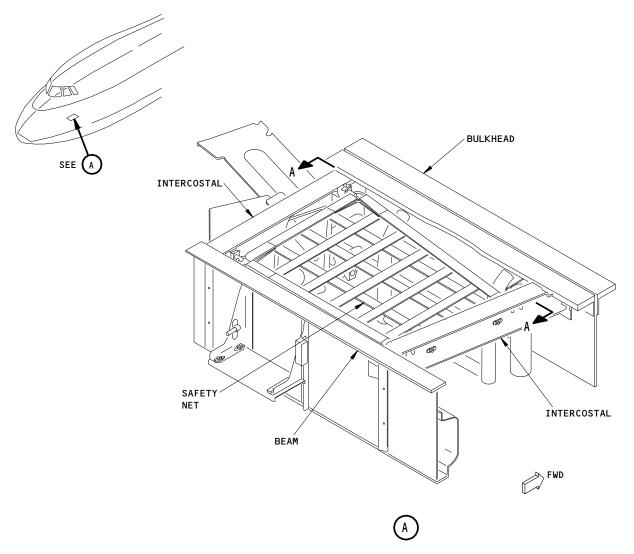


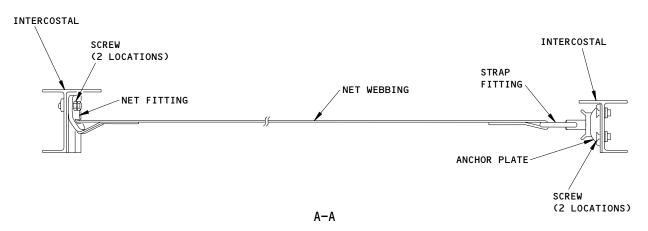
A A

Electrical/Electronics Bay Access Panel Installation Figure 401

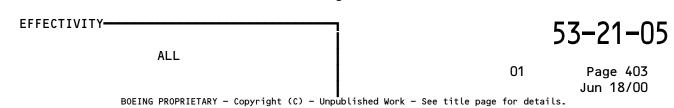








Electrical/Electronics Bay Access Panel Safety Net Installation Figure 402





(b) Pull the carpet back where it is necessary (AMM 25-27-01/401).

s 024-003

- (3) Remove the panel.
 - (a) Pull the cover that reads PULL.

NOTE: The word PUSH will come into view on the trigger.

- (b) Push the trigger to release the handle from the housing.
- (c) Turn the handle counterclockwise to open it.

s 494-004

WARNING: YOU MUST INSTALL THE SAFETY GUARD AROUND THE AREAS THAT HAVE THE OPENING IN THE FLOOR. IF IT IS NOT INSTALLED, PERSONS CAN ACCIDENTALLY FALL INTO THE OPENING AND BECOME INJURED.

(4) Install the safety guard of the E/E access opening around the opening you can see in the floor.

s 024-018

- (5) You will do this step to remove the safety net (if installed):
 - (a) Open the safety net on one (1) side by releasing the spring loaded strap fitting.

TASK 53-21-05-404-005

- 3. E/E Bay Access Panel Installation (Fig. 401 and 402)
 - A. References
 - (1) AMM 12-21-04/301, Door
 - (2) AMM 25-27-01/401, Main Deck Floor Covering
 - (3) AIPC 53-21-75, Fig. 2
 - B. Access
 - (1) Location Zone

212 Forward Cabin, Nose to Body Station 450.

C. Procedure

s 424-019

- (1) You will do this step to install the safety net (if attached):
 - (a) Install the safety net by closing the spring loaded strap fitting.

s 644-006

(2) Lubricate the panel latch mechanism (AMM 12-21-04/301).

s 424-007

(3) Install the Panel

ALL

- (a) Remove the safety guard of the E/E bay access opening.
- (b) Put the panel in the correct position.
- (c) Turn the handle clockwise to lock.
- (d) Push the handle until it is level.

EFFECTIVITY-

53-21-05



S 414-008 (4) Install the carpet (AMM 25-27-01/401).

EFFECTIVITY

ALL

53-21-05

01

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DOOR NO. 5 LATERAL BEAM - REMOVAL/INSTALLATION

1. General

- A. This procedure contains two tasks:
 - (1) The first task is for the removal of the door No. 5 lateral beam.
 - (2) The second task is for the installation of the door No. 5 lateral beam.
 - (3) You must do these steps to remove and install door No. 5 lateral beam.
 - (a) Remove all the furnishings which attach to the lateral beam.
 - (b) Remove the door No. 5 lateral beam.
 - (c) Install the door No. 5 lateral beam.
 - (d) Install all furnishings which attach to the lateral beam.

TASK 53-21-06-004-001

- 2. <u>Door No. 5 Lateral Beam Removal</u> (Fig. 401)
 - A. Access
 - (1) Location Zone

271/272 Passenger Cabin STA 2040 to 2360

- B. Procedure
 - s 014-002
 - (1) Remove all the wires, the tubes and the furnishings which attach to the lateral beam.

s 494-003

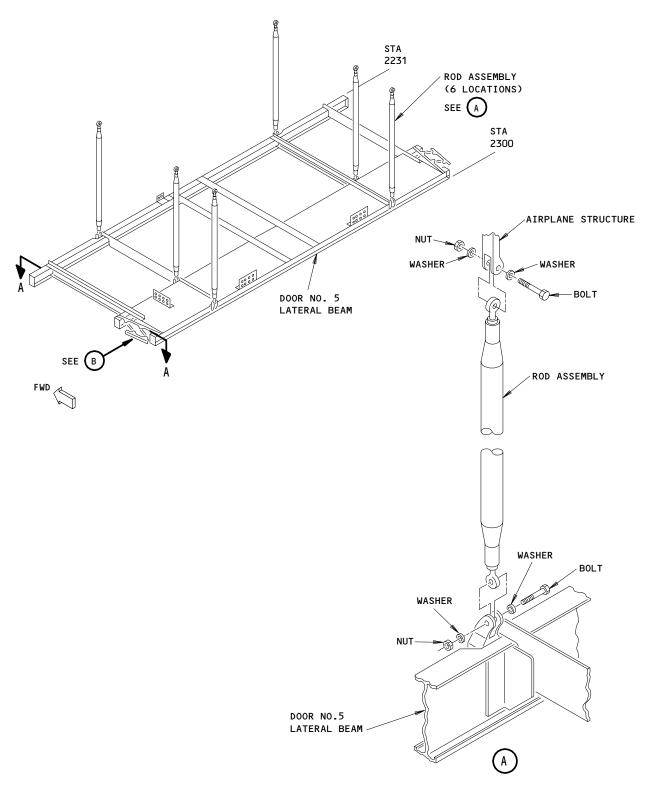
- (2) Hold the lateral beam in its position.
 - s 034-004
- (3) Disconnect the vertical rod assemblies.
 - (a) Remove the nuts, the washers and the bolts which attach the six rod assemblies to the airplane structure.
 - (b) Lower the six rods to the lateral beam.
 - (c) Put the bolts, the washers and the nuts into the rod ends.
 - (d) Attach the rods to the lateral beam with the tape.

s 034-005

- (4) Disconnect the four link assemblies.
 - (a) Remove the bolts, the washers and the nuts which attach the four link assemblies to the airplane structure.
 - (b) Move the link assemblies inboard.
 - (c) Put the bolts, the washers and the nuts into the rod ends.
 - (d) Attach the links to the lateral beam with the tape.

 53-21-06





Door No. 5 Lateral Beam Installation Figure 401 (Sheet 1)

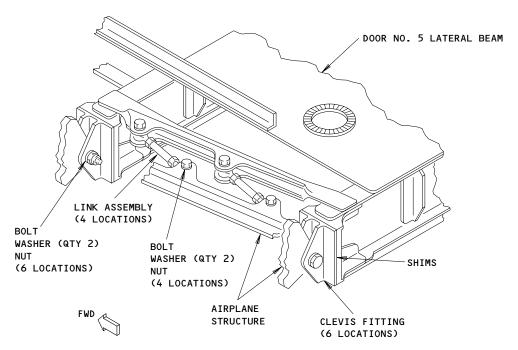
EFFECTIVITY-KLM COMBIS WITH DOOR NO. 5 LATERAL BEAM

53-21-06

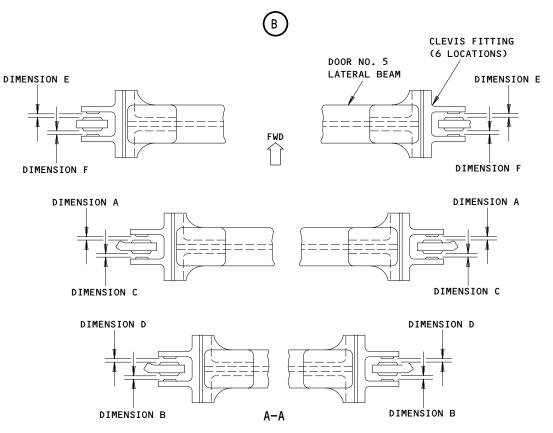
02

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LEFT SIDE SHOWN (RIGHT SIDE EQUIVALENT)



Door No. 5 Lateral Beam Installation Figure 401 (Sheet 2)

KLM COMBIS WITH DOOR NO. 5 LATERAL BEAM

53-21-06

02

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s 024-006

- (5) Remove the lateral beam.
 - (a) Remove the six nuts, the washers and the bolts from the six clevis fittings.
 - (b) Lower the lateral beam from its position.
 - (c) Install the bolts, the washers and the nuts into the clevis fittings on the lateral beam.

TASK 53-21-06-404-007

- 3. <u>Door No. 5 Lateral Beam Installation</u> (Fig. 401)
 - A. Access
 - (1) Location Zone

271/272 Passenger Cabin STA 2040 to 2360

B. Procedure

s 424-008

- (1) Attach the lateral beam to the airplane structure.
 - (a) Remove the nuts, the washers and the bolts from the six clevis fittings on the lateral beam.
 - (b) Lift the lateral beam into its position and hold it.
 - (c) Install the bolts, the washers and the nuts in the three clevis fittings on one side of the lateral beam.
 - (d) Attach the three clevis fittings on the opposite side of the lateral beam to the airplane structure.
 - Install the bolts, the washers and the nuts into the clevis fitting.
 - 2) If the bolts in the clevis fitting are not aligned with the frame fitting, remove the clevis fitting.
 - 3) Add or remove the shims from the clevis fitting to align the bolt holes.

NOTE: The maximum shim thickness on a clevis fitting is 0.25 inch. Install shims on the opposite clevis fitting if it is necessary. The maximum shim thickness for the two sides of the lateral beam is 0.50 inch.

s 434-009

- (2) Attach the four link assemblies.
 - (a) Remove the nuts, the washers and the bolts from the four links assemblies.
 - (b) Attach one link, on each side of the lateral beam, to the airplane structure with the bolts, the washers and the nuts.

 53-21-06



- (c) Measure the clearances between the clevis fittings and the airplane frame fitting (Section A-A).
- (d) Adjust the length of the links, if it is necessary, to get the correct dimension.
 - 1) The difference between the dimensions A and B must be less than 0.02 inch.
 - All the dimensions A, B, C, D, E and F must be a minimum of 0.03 inch.
- (e) Tighten the checknuts.
- (f) Install the lockwire on the checknuts.
- (g) Install the two remaining links with bolts, washers and nuts.
- (h) Adjust the links if it is necessary.

s 434-010

- (3) Install the six vertical rod assemblies.
 - (a) Remove the bolts, the washers and the nuts from the six rod ends.
 - (b) Attach the six rod assemblies to the airplane structure above the lateral beam.
 - (c) Adjust the rod lengths if it is necessary.
- C. Put the Airplane to Its Usual Condition.

s 094-011

(1) Remove the supports from the lateral beam.

s 414-012

(2) Install all wires, the tubes and the furnishings which attach to the lateral beam.

 53-21-06



INFLIGHT DEPRESSURIZATION BLOWOUT PANELS - INSPECTION/CHECK

1. General

- A. This procedure has one task. This task gives instructions to examine the depressurization blowout panels installed on the floor.
- B. Before the blowout panels disengage, they must operate smoothly. When these panels operate, they must not touch the structure, the equipment, or an operated system.

TASK 53-21-07-716-001

- 2. <u>Inflight Depressurization Blowout Panels Inspection</u> (Fig. 601)
 - A. Access
 - (1) Location Zones
 - 211 Passenger Cabin Nose to First Door, Left
 - 212 Passenger Cabin Nose to First Door, Right
 - 231 Passenger Cabin First to Second Door, Left
 - 232 Passenger Cabin First to Second Door, Right
 - B. Procedure

s 716-005

- (1) Examine the blowout panel operation:
 - (a) Push down on the blowout panel through the protective cage.
 - (b) Make sure the panel springs disengage easily.

NOTE: The panel will fall into the lower compartment. An irregular shape of the springs will not let them disengage easily.

- (c) Replace the springs, if it is necessary, when they are irregular in shape.
 - 1) Push down on the blowout panel through the protective cage.
 - 2) Make sure the panel springs disengage easily.
- (d) When the blowout panel is not serviceable or is defective, examine the adjacent blowout panels for the correct operation.

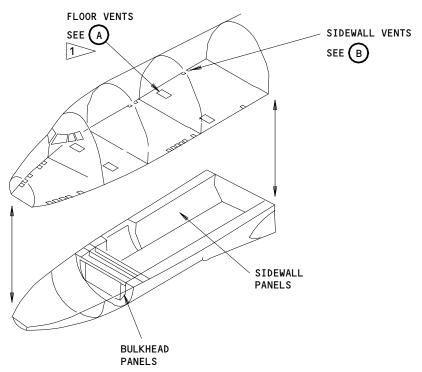
EFFECTIVITY-

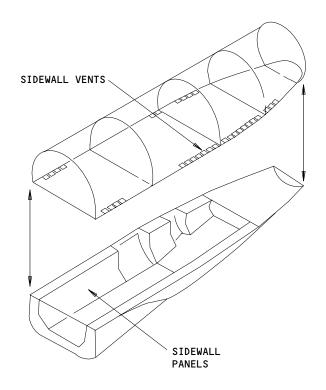
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53-21-07

i







1 LOCATIONS CHANGE

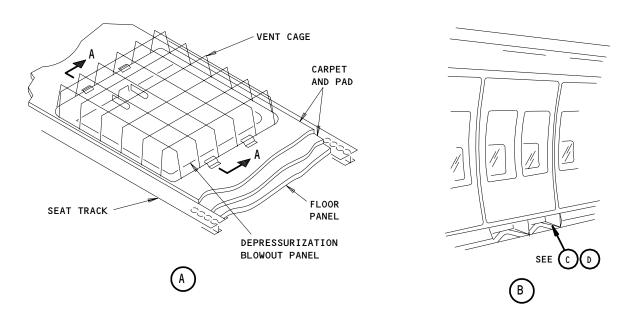
Inflight Depressurization Blowout Panels Figure 601 (Sheet 1)

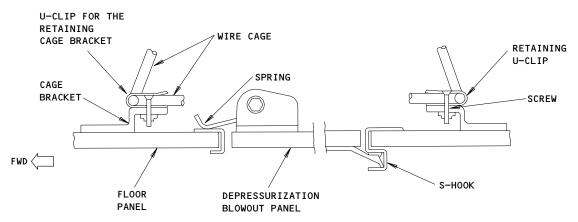
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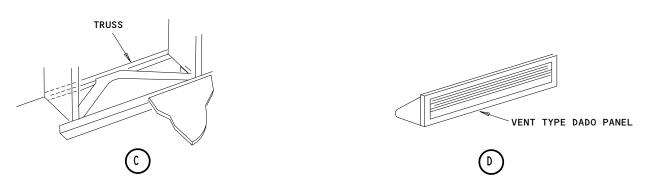
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EXAMPLE A-A



Inflight Depressurization Blowout Panels Figure 601 (Sheet 2)

ALL

O1 Page 603
Oct 10/91

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- (e) Install the blowout panel as follows:
 - 1) Remove the protective cage.
 - 2) Engage the panel in the S-shaped brackets.
 - 3) Move the latch spring to give clearance for the panel.
 - 4) Move the panel up into its position.
 - 5) Engage the latch spring on the panel.
 - 6) Install the protective cage.

s 216-006

- (2) Examine the protective cage:
 - (a) Make sure the wire grill cage is connected to the floor panel through the cage bracket.
 - (b) Make sure the open end of the U-clips for the retaining cage bracket points into the cage.

EFFECTIVITY-

ALL

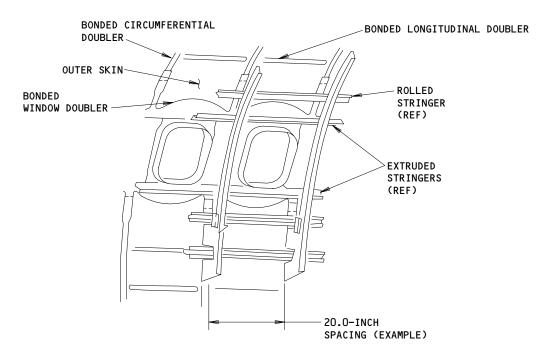
53-21-07



SKIN - DESCRIPTION AND OPERATION

1. General

- A. All exterior fuselage skins are of clad aluminum to provide a surface that is resistant to corrosion. The design of these skins provides for alternate load paths in the event of a local failure.
- B. Thickness of fuselage skins varies according to applicable loads. The heaviest skins are those in lower fuselage surrounding cutout for wing and main landing gear. Doublers and triplers are used with the basic fuselage skins surrounding the main entry doors. The doublers and/or triplers around cutouts are bonded or fay surface sealed and riveted to skin.
- C. Typical reinforcement of skin in areas other than around an opening is with circumferential doublers at each frame and bulkhead and where required, longitudinal doublers between stringers and skin (Fig. 1). Both types of doublers are bonded to skin.



Skin Reinforcements Around Windows (Example)
Figure 1

ALL

O1 Page 1
Oct 10/92



D. Most longitudinal skin splices in the pressurized sections are of lap type. These splices are structural joints and pressure seals. The lap joints are riveted and fay surface sealed. All circumferential skin splices are of butt-joint type. They are either spliced through bulkhead chord at the location or through a circumferential splice strap or doubler.

 53-31-00



ATTACH FITTINGS - DESCRIPTION AND OPERATION

1. General

A. Attach fittings are part of or attached to primary structure. Their purpose is to provide a means of support for equipment necessary to accomplish the required functions of the airplane. These fittings may be of steel, titanium, or aluminum alloy extrusions, forgings, castings, or built-up sheet metal, whichever combination is required for the safety and required life of the airplane.

2. Electrical/Electronic Equipment Supports

A. Supports for the electrical and electronic equipment are found throughout the fuselage. Locations range from the antenna supports on the forward pressure bulkhead to the service light on the aft end of the tail section. Supports for receptacles, switches, batteries, and wiring are also among electrical and electronic equipment supports (Ref 53-41-00).

3. <u>Interior Equipment Supports and Fittings</u>

A. The primary interior equipment supports are the seat tracks. The function of the seat tracks is to support the passenger seats and also to support other equipment such as the stairway, fixed partitions, lavatory modules, and storage closets (Ref 53-42-00).

4. Fuselage Attach Fittings

A. Fuselage attach fittings vary in size from the entry door latch fittings to the wing-to-body fittings of section 44. Locations vary from the nose radome attachments at the forward pressure bulkhead to the APU mounts in the tail section (Ref 53-43-00).

5. Cargo Compartment Attach Fittings

A. Attach fittings in the forward and aft cargo compartments serve as guides to load or move the cargo containers and as restraints in securing the cargo for flight. Nets attach to the fittings in the bulk cargo compartment to separate the cargo (Ref 25-54-00).

6. Landing Gear Attach Fittings

A. The primary nose, wing main, and body main landing gear supports are the trunnion supports which support the weight of the airplane on the ground and also serve as the hinge for gear retraction or extension. Drag or side strut fittings distribute loads encountered in maintaining directional stability (Ref 53-46-00).

53-40-00

01

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ELECTRICAL/ELECTRONIC EQUIPMENT SUPPORTS - DESCRIPTION AND OPERATION

1. General

A. Electrical/electronic equipment supported in the fuselage include electronic equipment racks, lights, switches, antennas, and various other equipment. Locations vary from the antenna support at the forward pressure bulkhead to the tailcone service light in the tail section. The following are some of the supports in each fuselage section.

2. Supports

- A. Contained in section 41 are supports for various antennas within the nose radome, supports for the electronic racks and their cooling equipment in the main equipment center, supports for various switches and lights including emergency lights and their batteries, and main battery and associated equipment.
- B. Section 42 contains supports for lights and switches, racks for the center equipment bay, and supports for additional antennas (VHF, Satellite Communication, ATC, DME).
- C. Supports in section 44 are for equipment concerning the main gear such as service lights and uplock and door warning switches. Additional supports are for the VHF and ADF antennas and emergency lights for the overwing exits.
- D. Section 46 contains supports for service lights, emergency lights, APU battery, and E8 rack.
- E. Equipment supported in section 48 includes APU service light, and tail cone service light and switch.

53-41-00



INTERIOR EQUIPMENT SUPPORTS AND FITTINGS - DESCRIPTION AND OPERATION

1. General

A. Interior equipment supports and fittings are those attachments for the seats, lavatory modules, galleys, and other components that are not electrical or electronic equipment.

2. Seat Attachment Fittings

- A. Eight seat tracks extend nearly the full length of the main deck. Only in the forward and aft ends is the quantity of seat tracks reduced to accommodate the tapered area of the fuselage. Four seat tracks in the upper deck area extend from the forward to the aft end. The seat tracks are attached to the tops of the floor beams or except over the wing center section where they are integral with the floor beams. The seat tracks allow seats to be installed at any of the locations provided in the tracks. Fore and aft spacing may be varied for arrangement of different class accommodations. The tracks also support the lavatory modules, galleys, and other equipment.
- B. All flight crew seats are attached to special seat tracks which provide for movement of the seats in directions required for access or adjustment.
- C. The majority of the flight attendants' seats are attached to the seat tracks; others are attached to closet walls or partitions.

3. <u>Miscellaneous Equipment Attach Fittings</u>

A. Fittings are provided on the fuselage structure for attachment of air conditioning equipment, galley and lavatory equipment, water tanks, safety equipment (slides, ladders, etc.), and oxygen equipment.

ALL

53-42-00



PASSENGER SEAT TRACKS ATTACH FITTINGS - INSPECTION CHECK

1. General

- A. This procedure has one task. The task gives instructions to examine the attach fittings of the passenger seat tracks and main deck floor tracks.
 - (1) You must do these steps to examine the attach fittings:
 - (a) Remove the passenger seats
 - (b) Do a visual inspection of the attach fittings
 - (c) Install the passenger seats.

TASK 53-42-01-206-001

- 2. Passenger Seat Tracks Attach Fittings Inspection
 - A. References
 - (1) 25-25-01/401, Seat Track Removal/Installation
 - (2) 53-42-01/701, Cleaning and Painting
 - B. Access
 - (1) Location Zone

200 Passenger Cabin - Main and Upper Deck

C. Procedure

s 016-002

(1) Remove the passenger seats (25-25-01/401).

s 216-003

- (2) Examine the seat tracks.
 - (a) Examine the seat tracks for cracks, corrosion, damage, and loose fasteners.
 - (b) Clean or paint the seat tracks when it is necessary (53-42-01/701).
- D. Put the Airplane to Its Usual Condition.

s 416-004

ALL

(1) Install the passenger seats (25-25-01/401).

EFFECTIVITY-

53-42-01



PASSENGER SEAT TRACKS ATTACH FITTINGS - CLEANING/PAINTING

1. General

- A. This procedure has one task. The task gives instructions to clean and paint the passenger seat tracks.
- The passenger seat tracks consist of 7178 aluminum alloy extrusions. It is necessary to keep the seat tracks clean and has no moisture. Anodized chromic acid and aluminized primer are the initial finishes on an open part of the track.
- C. The seat track fasteners are installed through the center of the track. The countersunk piece has a layer of a Sealant (BMS 5-95 Type A).

TASK 53-42-01-107-001

2. Passenger Seat Track Cleaning

- Consumable Materials
 - (1) C00064 Alodine Clear MIL-C-5541
 - (2) COO717 Primer Aluminized Epoxy, 463-6-4
 - (3) C00259 Enamel Primer, Yellow, BMS 10-11, X-306, Catalyst
 - (4) C00259 Thinner Enamel, BMS 10-11, TL-52
 - (5) B00083 Solvent TT-N-95, Aliphatic Naphtha
 - (6) G00380 Paper Aluminum oxide, 320-grit
- References
 - (1) 51-21-04/701, Alodized Surfaces
- C. Access
 - (1) Location Zone 200 Upper Half Fuselage
- D. Procedure

s 117-009

WARNING:

DO NOT GET THE SOLVENTS, FINISHES, CLEANERS, OR THINNERS IN YOUR MOUTH OR EYES, OR ON YOUR SKIN. DO NOT BREATHE THE FUMES FROM THEM. USE A PROTECTIVE SPLASH GOGGLE, GLOVES, AND A RESPIRATOR (IN CONFINED AREAS) WHEN YOU USE THESE CHEMICALS. KEEP ALL THE CHEMICALS AWAY FROM ALL SOURCES OF IGNITION (HEAT, FLAME, AND SPARKS). ALL THESE CHEMICALS YOU USE ARE POISONOUS AND FLAMMABLE. IF YOU DO NOT USE THE CORRECT PROCEDURES AND EQUIPMENT, INJURY TO PERSONS OR DAMAGE TO THE EQUIPMENT CAN OCCUR.

CAUTION: DO NOT PERMIT THE SOLVENTS TO TOUCH PLASTICS, CONTROL CABLES, LUBRICATED AREAS, PLASTIC DECALS, OR PAINTS OR MARKINGS. DO NOT PERMIT THE SOLVENTS TO TOUCH AREAS THAT ARE RESISTANT TO HYDRAULIC FLUIDS. IF THE SOLVENTS TOUCHES THESE MATERIALS IT CAN CAUSE DAMAGE.

- (1) Clean the seat tracks:
 - (a) Clean the seat tracks with aliphatic naphtha to remove all the oil or grease.

EFFECTIVITY-

53-42-01

ALL



- (b) Rub the seat tracks with aluminum oxide paper to remove the corrosion.
- (c) Use a vacuum cleaner to remove all the loose unwanted materials.
- (d) Clean the area with aliphatic naphtha one more time.

s 377-005

WARNING: DO NOT GET ALODINE IN YOUR MOUTH OR EYES, OR ON YOUR SKIN. PUT ON A PROTECTIVE SPLASH GOGGLE AND GLOVES WHEN YOU USE ALODINE. ALODINE CONTAINS CHROMATIC ACID WHICH CAN CAUSE INJURY TO PERSONS.

> DO NOT LET CLOTHS THAT ARE SOAKED WITH ALODINE BECOME DRY. SOAK THESE CLOTHS IN WATER WHEN YOU DISCARD THEM. DRY CLOTHS THAT HAVE ALODINE CAN START TO BURN SUDDENLY.

CAUTION: PUT A COVER ON ALL ADJACENT CARPETS WHEN YOU APPLY ALODINE. ALODINE WILL CAUSE A STAIN ON FABRICS.

Do this task to apply the clear alodine to the surfaces of the passenger seat tracks: "Apply Alodine 1000 Solution" (Ref 51-21-04/701).

s 377-004

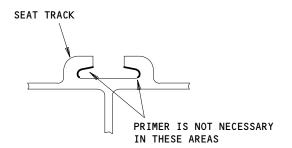
(3) Apply the aluminized primer to the surfaces of the passenger seat tracks.

EFFECTIVITY-

ALL

53-42-01





Seat Track Painting Figure 701

EFFECTIVITY ALL

322981

53-42-01

01

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FUSELAGE ATTACH FITTINGS - DESCRIPTION AND OPERATION

1. General

A. Fuselage attach fittings are primary or secondary structure, depending on their function. Locations vary from the nose radome attachments at the forward bulkhead to the APU mounts in section 48.

2. Attach Fittings

- A. Hinge fittings and eyebolt latch fittings, for the nose radome are attached to the station 134 bulkhead.
- B. Latch fittings and stop fittings are provided for each of the external electrical/electronic equipment access doors, plus hinge fittings at the aft door location.
- C. Hinge fittings, guide plates, stop fittings, and latches are attached to the structure surrounding each entry door, plus the body torque tube attachments and the emergency opening mechanism.
- D. Hinges (piano type), hook pin fittings, latch pin fittings, centering guide fittings and actuator fittings attach to the structure surrounding the forward and aft cargo doors.
- E. The attach fittings surrounding the bulk cargo door are the hinge fittings, centering plates, stop fittings and latch fittings.
- F. Fittings attach the nose gear and main gear doors and their actuators.
- G. Wing-to-body splice/attach fittings combine with the four bulkheads as the prime attach fittings in that area.
- H. Hinge fittings and jackscrew fittings are attachments for the horizontal stabilizer.
- I. Fittings at bulkheads and between bulkheads provide attachment for the vertical fin.

53-43-00



FUSELAGE ATTACH FITTINGS - MAINTENANCE PRACTICES

1. General

- A. This procedure has one task. This task gives instructions for a visual inspection of the attach fittings.
- B. The location and the function of the attach fittings are different.
- C. The condition of the attach fittings must be satisfactory. You must remove or repair the attach fittings that are damaged or have corrosion.

TASK 53-43-00-202-001

- 2. Fuselage Attach Fittings-Inspection
 - A. References
 - (1) 51-21-03/701, Corrosion (Removal and Control)
 - (2) 51-24-00/001, Protective Finishes
 - (3) 51-24-10/801, Coating-Heat, Weather and Oil Resistant
 - (4) 51-24-12/701, Coating-Temporary Tec 558B
 - (5) 51-24-03/701, Conductive Coating System-Exterior Fiberglass
 - (6) 51-24-07/701, Corrosion Control-Skin and Fasteners
 - (7) 51-24-04/701, Finish-Abrasion Resistant Teflon
 - (8) 51-24-04/801, Finish-Abrasion Resistant Teflon
 - (9) 51-24-02/701, Finish-fire Resistant Hydraulic Fluid Resistant
 - (10) 51-24-06/701, Finish-Nonglare
 - (11) 51-24-11/701, Paint System-Decorative
 - (12) 51-24-08/701, Titanium Coating-High Temperature
 - B. Access
 - (1) Location Zone

THRU-OUT FUSELAGE

C. Procedure

s 212-005

(1) Examine the fittings for corrosion, cracks, and loose fasteners.

<u>NOTE</u>: Refer to the Structural Repair Manual for the damage limits and the repair instructions for fittings.

(a) Do this task to remove the corrosion from the fittings: "Corrosion Removal and Control" (Ref 51-21-03/701).

s 212-019

ALL

- (2) Examine the finish on the fittings for damage and deterioration.
 - (a) If there is damage to the weather, oil, and heat resistant coating, repair the coating if it is necessary (Ref 51-24-10/801).

EFFECTIVITY-

53-43-00



- (b) If there is damage to the TEC 558B paint, repair the paint if it is necessary (Ref 51-24-12/701).
- (c) If there is damage to the conductive coating, repair the coating if it is necessary (Ref 51-24-03/701).
- (d) If there is corrosion on the skin and fasteners, repair the corrosion if it is necessary (Ref 51-24-07/701).
- (e) If there is damage to the resistant teflon finish, repair the finish if it is necessary (Ref 51-24-04/701).
- (f) If there is damage to the fire-resistant finish or to the hydraulic fluid-resistant finish, repair the finish if it is necessary (Ref 51-24-02/701).
- (g) If there is damage to the velvet coating for the nonglare areas, repair the coating if it is necessary (Ref 51-24-06/701).
- (h) If there is damage to the high temperature coating, repair the coating if it is necessary (Ref 51-24-08/701).

s 212-007

(3) Examine the area adjacent to the fittings for contamination. Make sure there is no contamination which can cause corrosion.

 53-43-00



CARGO COMPARTMENT ATTACH FITTINGS - MAINTENANCE PRACTICES

1. General

- A. This procedure has one task. This task gives instructions for a visual inspection of the attach fittings in the cargo compartments.
- B. The location and the function of the fittings are different.
- C. The condition of the attach fittings must be satisfactory. You must remove or repair the attach fittings that are damaged or have corrosion.

TASK 53-44-00-202-001

- 2. Cargo Compartment Attach Fittings Inspection
 - A. References
 - (1) 51-21-03/701, Corrosion (Removal and Control)
 - (2) 51-24-00/001, Protective Finishes
 - (3) 53-44-01/701, Cargo Compartment Tracks
 - (4) IPC 53-44-00, Forward Cargo Compartment Attach Fittings
 - (5) IPC 53-45-00, Aft Cargo Compartment Fittings
 - B. Access
 - (1) Location Zones
 - 121 Forward Cargo Container Compartment, Forward Half, Left
 - 122 Forward Cargo Container Compartment, Forward Half, Right
 - 123 Forward Cargo Container Compartment, Aft Half, Left
 - 124 Forward Cargo Container Compartment, Aft Half, Right
 - 141 Aft Cargo Container Compartment, Left
 - 142 Aft Cargo Container Compartment, Right
 - 145 Bulk Cargo Compartment, Left
 - 146 Bulk Cargo Compartment, Right
 - C. Procedure

s 212-005

ALL

(1) Examine the fittings for corrosion, cracks, and loose fasteners.

NOTE: Refer to the Structural Repair Manual for the damage limits and repair instructions for fittings.

(a) Do this task to remove the corrosion from the fittings: "Corrosion Removal and Control" (Ref 51-21-03/701).

EFFECTIVITY-

53-44-00



s 212-006

(2) Examine the protective finish on the fittings for damage and deterioration.

NOTE: Refer to 51-24-00/001 for the repair of the protective finishes.

s 212-007

- (3) Examine the protective finish on the cargo trucks for damage and deterioration.
 - (a) Do this task to repair the protective finish on the cargo tracks: "Cargo Tracks- Cleaning and Painting" (ref 53-44-01/701).

s 212-008

(4) Examine the area adjacent to the fittings for contamination.

EFFECTIVITY-

ALL

53-44-00



CARGO COMPARTMENT CARGO TRACKS - CLEANING/PAINTING

1. General

- A. This procedure has one task. The task gives instructions to clean and paint the cargo tracks in the cargo compartment.
- B. The forward and aft cargo tracks consist of 7178 aluminum alloy extrusions which have been anodized with chromic acid. It is necessary to keep the cargo tracks clean and free of moisture. You must use this procedure to remove the corrosion you find on the cargo tracks.
- C. The cargo track fasteners are installed through the center of the cargo track. Use a brush to apply a layer of the sealant BMS 5-95, Type A to the countersunk piece.

TASK 53-44-01-107-001

2. Cargo Tracks-Cleaning and Painting

- A. Consumable Materials
 - (1) COOO64 Alodine, Clear, MIL-C-5541
 - (2) A00247 Sealant, Chromate, BMS 5-95, Class B
 - (3) B00083 Solvent, TT-N-95, Aliphatic Naphtha
 - (4) G00383 Paper Aluminum Oxide, 320 grit
- B. References
 - (1) 51-21-04/701, Alodized Surfaces
- C. Access
 - (1) Location Zones
 - 121 Forward Cargo Container Compartment, Forward Half, Left
 - 122 Forward Cargo Container Compartment, Forward Half, Right
 - 123 Forward Cargo Container Compartment, Aft Half, Left
 - 124 Forward Cargo Container Compartment, Aft Half, Right
 - 141 Aft Cargo Container Compartment, Left
 - 142 Aft Cargo Container Compartment, Right
 - 145 Bulk Cargo Compartment, Left
 - 146 Bulk Cargo Compartment, Right

D. Procedure

s 117-005

- (1) Clean the cargo tracks:
 - (a) Clean the cargo track with aliphatic naphtha to remove all the oil or grease.
 - (b) Rub the cargo track with the paper-aluminum oxide(320-grit) to remove the corrosion.
 - (c) Use a vacuum cleaner to remove all the loose unwanted materials.

EFFECTIVITY-

53-44-01

ALL

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(d) Clean the area with aliphatic naphtha one more time.

s 377-003

WARNING: DO NOT GET ALODINE IN YOUR MOUTH OR EYES, OR ON YOUR SKIN. PUT ON A PROTECTIVE SPLASH GOGGLE AND GLOVES WHEN YOU USE ALODINE. ALODINE CONTAINS CHROMATIC ACID WHICH CAN CAUSE INJURY TO PERSONS.

> DO NOT LET CLOTHS THAT ARE SOAKED WITH ALODINE BECOME DRY. SOAK THESE CLOTHS IN WATER WHEN YOU DISCARD THEM. DRY CLOTHS THAT HAVE ALODINE CAN START TO BURN SUDDENLY.

(2) Do this task to apply the clear alodine to the surfaces of the cargo track: "Alodized Surfaces - Cleaning/Painting" (Ref 51-21-04/701).

s 347-006

(3) Apply the sealant to the countersunk part of the fasteners in the center of the track.

EFFECTIVITY-

ALL

53-44-01



CENTER OVERHEAD STOWAGE BIN SUPPORT TIE ROD - REMOVAL/INSTALLATION

1. General

- A. This procedure contains two tasks:
 - (1) The removal of the center stowage bin tie rod supports.
 - (2) The installation of the center stowage bin tie rod supports.
- You must remove the ceiling panels to gain access to the tie rods.

TASK 53-45-01-024-001

- Center Overhead Stowage Bin Support Tie Rod Removal (Fig. 401)
 - A. References
 - (1) AMM 25-22-01/401, Main Passenger Ceiling Panels
 - B. Access
 - (1) Location Zone

200 Upper Half of Fuselage (Main and Upper Deck)

C. Procedure

s 024-003

(1) Make sure that the center overhead stowage bins are empty.

s 024-004

(2) Remove the ceiling panels (AMM 25-22-01/401) adjacent to the tie rod to be removed.

S 024-005

CAUTION: REMOVE AND INSTALL ONE TIE ROD AT A TIME ONLY.

(3) Loosen and remove the nut 3. and washer 4. from the bolt 5. on the lower end of the tie rod and truss ladder fitting in Fig. 401.

s 024-006

(4) Remove the bolt 5. and washer 4. from the tie rod end and fitting.

s 024-007

(5) Loosen and remove the nut 3. and washer 4. from the bolt 5. on the top end of the tie rod on Fig. 401.

s 024-008

(6) Remove the bolt 5. and washer 4. from the tie rod end and fitting.

s 024-021

(7) Remove the tie rod.

EFFECTIVITY-

53-45-01



s 024-009

(8) Measure and make a record of the tie rod length between the tie rod end fitting holes as a reference for repair or replacement.

NOTE: If the tie rod is bent or broken, this measurement is not necessary. Replace the tie rod.

TASK 53-45-01-424-010

- Center Overhead Stowage Bin Support Tie Rod Installation (Fig. 401)
 - A. References
 - (1) AMM 25-22-01/401, Main Passenger Ceiling Panels
 - B. Access
 - (1) Location Zone

200 Upper Half of Fuselage (Main and Upper Deck)

C. Procedure

s 424-011

(1) Measure the distance between the hole centerlines on the structure and the truss ladder stow bin support.

s 424-012

- (2) Adjust the new tie rod equally on both ends to the length measured on the removed tie rod or the measured distance between the fitting hole in the structure and the fitting hole in the truss ladder.
 - (a) Make sure the threads are visible in the inspection holes in the tie rod tube.

s 424-013

(3) Install the bolt 5. with washer 4. in the upper end of the tie rod end fitting and through the fitting hole in the structure. Install the washer 4. and nut 3. on the end of the bolt 5.

<u>NOTE</u>: Make sure you tighten the nut 3. after the adjustment is complete.

(a) The collector cuff should be on the lower end of the tie rod.

s 424-014

ALL

(4) Put the lower end of the tie rod in the truss ladder fitting.

EFFECTIVITY-

53-45-01



s 424-015

- (5) If needed, turn the tie rod until the bolt 5. with washer 4. can be easily slipped into the lower end fitting hole in the tie rod and the fitting hole on the truss ladder.
 - (a) Make sure the tie rod end threads are visible through the inspection holes on each end of the tie rod tube to ensure balanced thread engagement.

s 424-016

(6) Install the washer 4. and nut 3. on the bolt 5. on the lower end of tie rod.

s 424-020

(7) Tighten the nut 3. on the bolt 5. on the upper and and lower ends of the tie rod.

s 424-017

CAUTION: INSTALL THE LOCKWIRE TO PREVENT ROTATION OF THE TIE ROD AND KEEP THE CORRECT LENGTH OF THE TIE ROD DURING OPERATION OF THE AIRPLANE.

(8) Install the lockwire 6. on the upper end of the tie rod.

s 424-018

(9) Replace the ceiling panels (AMM 25-22-01/401).

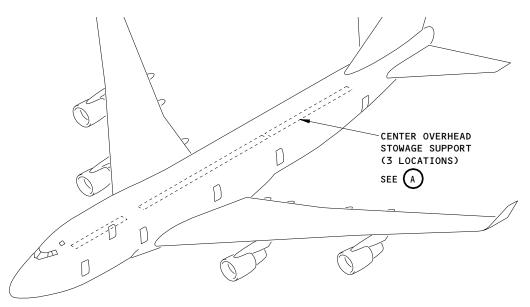
s 414-019

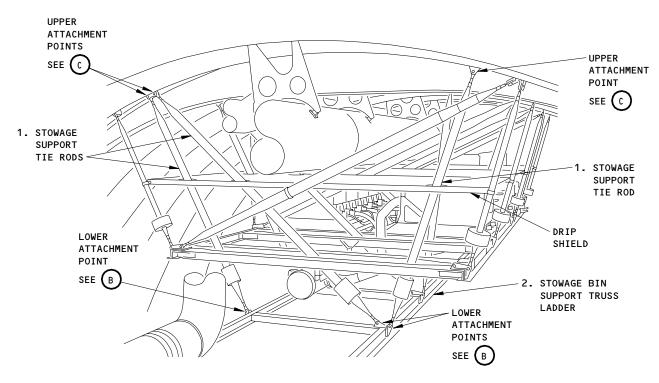
- (10) Open and close the center stowage bins adjacent to the installed tie rod.
 - (a) Make sure the stowage bins operate smoothly and without binding, and lock securely.

EFFECTIVITY-

53-45-01







CENTER OVERHEAD STOWAGE SUPPORT (EXAMPLE)



Center Overhead Stowage Support Tie Rod Figure 401 (Sheet 1)

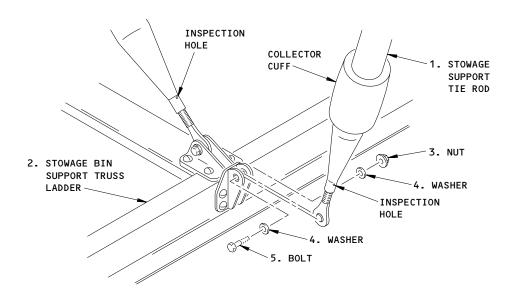
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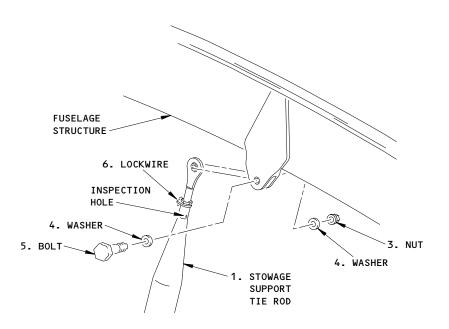
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LOWER ATTACHMENT POINT (EXAMPLE)





UPPER ATTACHMENT POINT (EXAMPLE)



Center Overhead Stowage Support Tie Rod Figure 401 (Sheet 2)

53-45-01

01

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LANDING GEAR ATTACH FITTINGS - DESCRIPTION AND OPERATION

1. General

A. The nose, wing main, and body main landing gears are attached to fittings or reinforced structure in the wheel well areas.

2. Nose Landing Gear Attach Fittings (Fig. 1)

- A. The nose landing gear attach fittings consist of a trunnion support fitting, the drag strut support fitting, and the actuator support.
- B. The trunnion support fitting is a T-shaped, machined-aluminum forging with a recess for the trunnion pins. Each trunnion pin is anchored to its support fitting by a trunnion cap with two large tension bolts. The fittings are located 10 inches forward of the aft wall and on the inside sidewalls of the wheel well (Detail A).
- C. The drag strut support fitting and the actuator support fitting are located at the top of the wheel well and tied into the bulkhead that separates the forward and aft well at body station 340. Both are machined aluminum forgings. The drag strut support is centered at the top of the wheel well and the actuator is alongside the drag strut at RBL 11.00 (Detail B).

3. Wing Main Landing Gear Attach Fittings (Fig. 2)

- A. The upper side strut is the only wing main gear attachment to the fuselage. For attachment of the trunnion and actuator support link to the wing spar and the landing gear beam (Ref 57-43-00).
- B. The upper side strut provides lateral, vertical, fore, and aft support for the shock strut and is attached to the support fitting immediately forward of the body station 1350 bulkhead. Attachment of the side strut to this fitting is with a high heat-treated, steel spindle.

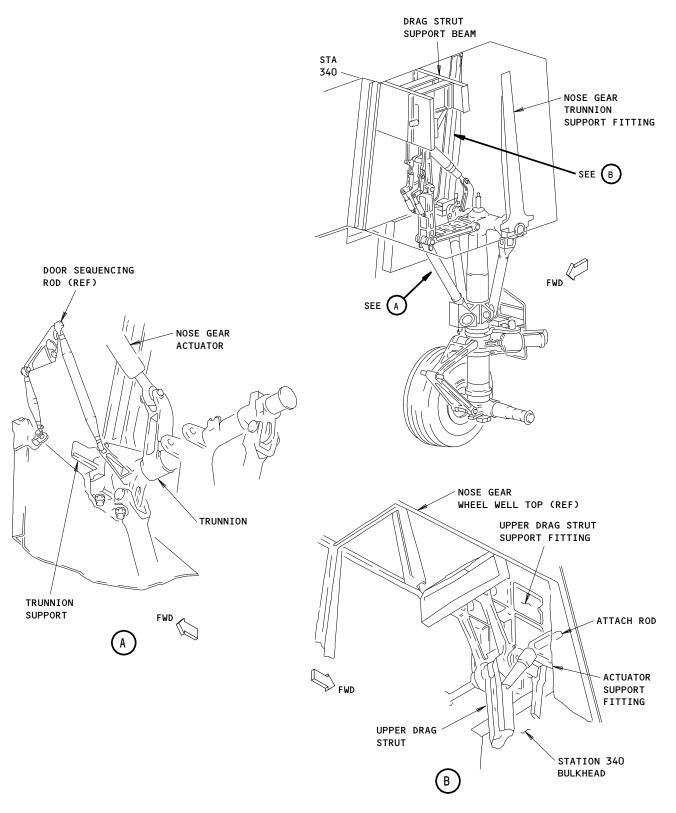
4. Body Main Landing Gear Attach Fittings (Fig. 3)

- A. There are five attach points to the fuselage from each of the two body main landing gears: the drag strut, jury strut, retraction actuator, and inboard and outboard trunnion attachments.
- B. A high heat-treated, steel spindle attaches the drag strut to the fuselage drag strut fitting which is made of forged aluminum (Detail A, Sheet 1). The fuselage drag strut fitting is fastened to the keel beam and distributes the drag strut loads into the fuselage.
- C. Attachment of the jury strut is by a spindle to the aft end of the fuselage drag strut fitting (Detail B, Sheet 1). The jury strut serves as a locking and stabilizing member for the drag strut.
- D. The retraction actuator is attached to an aluminum forged fitting on the body station 1480 bulkhead at BL 84.6 and WL 159.5 (Detail C, Sheet 2). The gear actuation loads are distributed by this fitting into the bulkhead. The upper end of the fitting is at WL 186.2.
- E. The inboard trunnion support fitting is attached to the keel beam by links at its lower inboard end and to the body station 1480 bulkhead (Detail D, Sheet 2). The combined inboard and outboard trunnions provide the hinge for body gear retraction.

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53-46-00

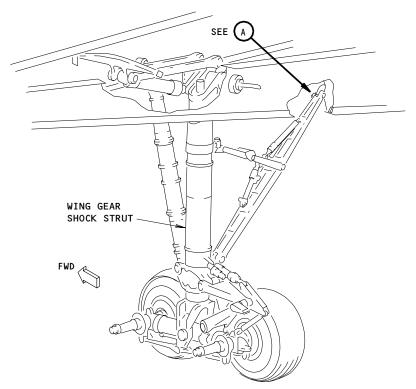


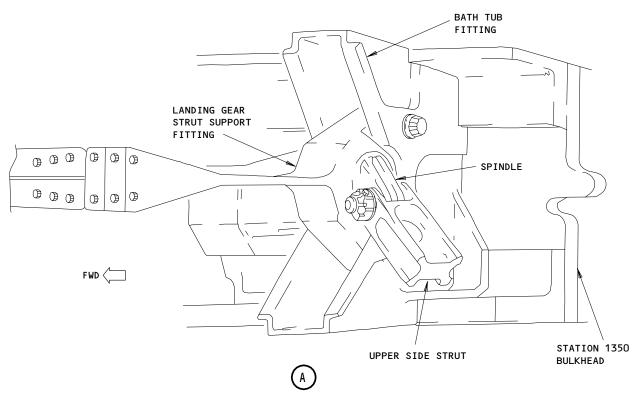


Nose Gear Attachment Figure 1

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Wing Gear Attachment Figure 2

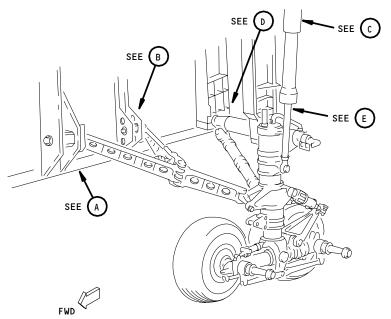
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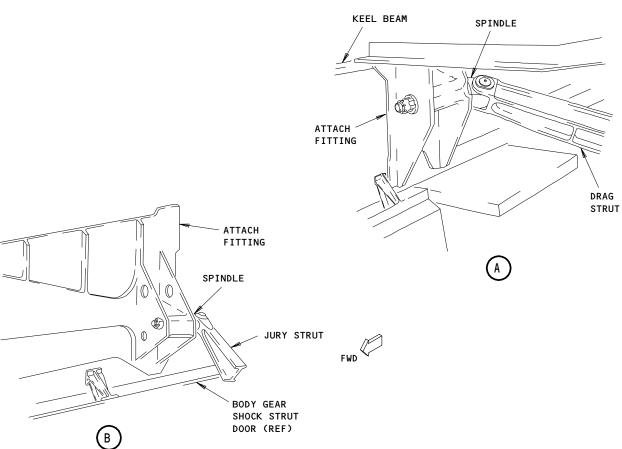
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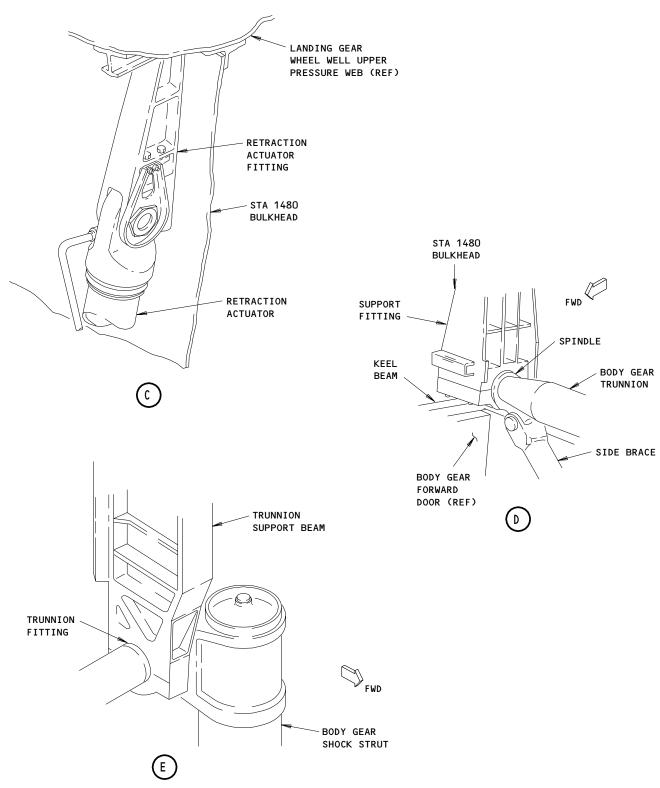
Body Gear Attachments Figure 3 (Sheet 1)

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Body Gear Attachments Figure 3 (Sheet 2)

ALL 53-46-00 Page 5 Jun 10/88

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F. The outboard trunnion support fitting is attached to the body station 1480 bulkhead and is stabilized by stiffeners between the inboard trunnion and itself (Detail E, Sheet 2). The trunnion support fittings are the major load carrying supports when the airplane is not airborne.

ALL

53-46-00



AERODYNAMIC FAIRINGS - DESCRIPTION AND OPERATION

1. General (Fig. 1)

A. Fairings provide aerodynamic smoothness for various areas to the wing-to-body join, to the leading edge of the vertical fin-to-fuselage join, and the forward and aft ends of the fuselage.

Wing-to-Body Fairings

- A. Wing-to-body fairings are attached to the wing surfaces and the fuselage skin to provide an aerodynamically smooth surface. They are of glass fabric sandwich construction with reinforced nomex honeycomb core.

 Aluminum frames are installed to support the fairing panels.
- B. Equipment of all types is housed under the fairings; some antennas and lights are mounted directly to the fairings. Access to equipment beneath the fairings is attained either through specific doors or by removing a portion of the fairing (Ref 53-51-00).

3. Nose Radome

A. The nose radome extends forward from fuselage station 134, serves as a fairing for the forward end of the fuselage, and houses the weather radar antenna. It is a cone-shaped structure of fiberglass honeycomb sandwich construction that is equipped with erosion and lightning protection. The nose radome pivots open to the left on upper and lower hinge arms and is secured in the closed position by six evenly spaced latches (Ref 53-52-00).

4. <u>Dorsal Fin</u>

- A. The dorsal fin is a fairing at the lower forward edge of the vertical fin. It fairs the upper surface of the fuselage with the leading edge of the vertical fin.
- B. Construction is of formed clad aluminum skin with formed aluminum ribs at 10.0 inch spacing.
- C. Attachment is to the fuselage with a formed extruded angle. All edges of the fin are sealed (dorsal fin to fuselage and dorsal fin to vertical fin) with rubber extrusions (Ref 55-30-00).

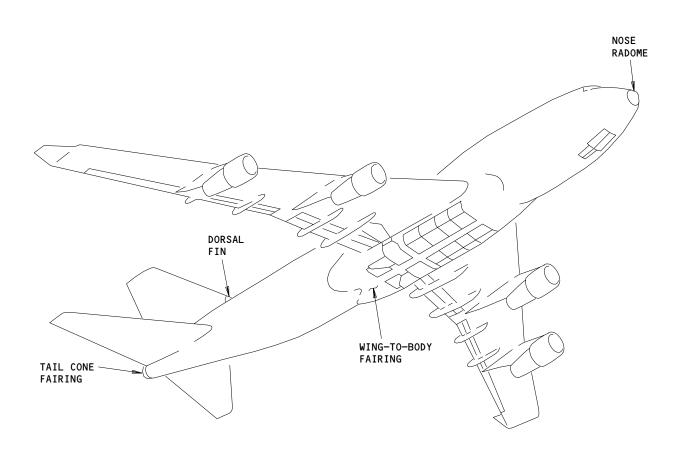
5. Tail Cone Fairing (Fig. 2)

- A. The tail cone fairing forms the extreme aft portion of the fuselage and contains APU exhaust provisions.
- B. Construction is of formed aluminum skin with a laminated fiberglass shroud.
- C. Attachment of the tail cone fairing to fuselage rib at station 2775.3 is by standard rivets.

ALL

53-50-00





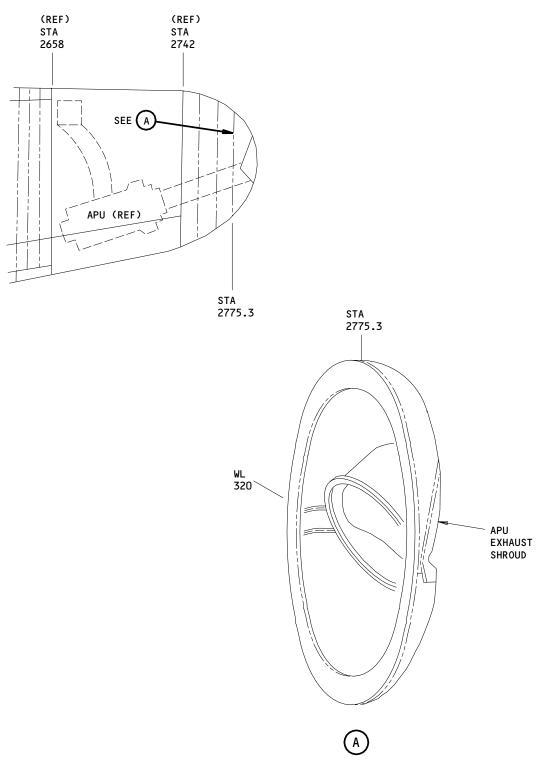
Aerodynamic Fairings Figure 1

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Tail Cone Fairing Figure 2

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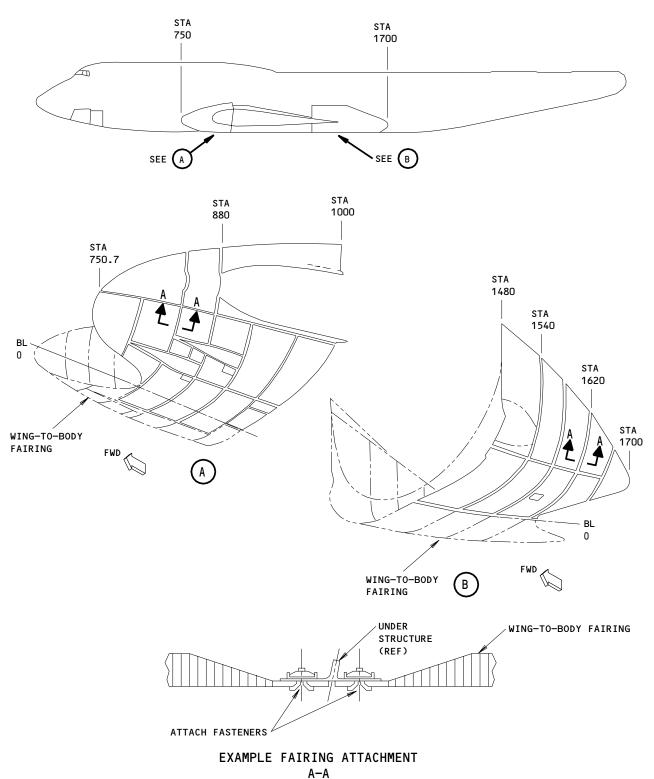
WING-TO-BODY FAIRINGS - DESCRIPTION AND OPERATION

1. General (Fig. 1)

- A. Wing-to-body fairings extend from fuselage station 750 aft to station 1700. In the overwing area forward of the wing front spar, they are attached to the wing surfaces and the fuselage skin. In the overwing area aft of the front spar, the fairing is attached to the fuselage only. The faying surface between the airplane structure and the fairing is coated with a teflon-filled paint that acts as a rubstrip. Under the wing, they are attached to structure supported from the wing lower surface. They provide an aerodynamically smooth surface in the wing-to-fuselage join area.
- B. Construction is of fiberglass sandwich with reinforced nomex honeycomb core. The exterior surface of the panels below the wing surfaces are flame-sprayed aluminum then painted with enamel. The panels above the wing have a conductive coating beneath the enamel.
- C. All fairings are readily removable. Attachment is by countersunk screws with dimpled washers in the periphery of the panel (Section A-A). Doors in the lower fairing allow access for air conditioning systems and potable water. Anti-collision lights and antennas are housed in or supported by the fairings.

 53-51-00





Wing-to-Body Fairings Figure 1

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WING-TO-BODY FAIRING - REMOVAL/INSTALLATION

1. General

- A. This procedure has these tasks:
 - (1) Lower Half Wing-to-Body Fairing Removal.
 - (2) Upper Half Wing-to-Body Fairing Removal.
 - (3) Lower Half Wing-to-Body Fairing Installation.
 - (4) Upper Half Wing-to-Body Fairing Installation.

TASK 53-51-01-004-001

- 2. Wing-to-Body Fairing Removal Lower Half (Fig. 401)
 - A. General
 - (1) The wing-to-body fairing will be referred to as the fairing in this task.
 - B. References
 - (1) IPC 53-51-01 Fig. 1 (Section 42)
 - (2) IPC 53-51-01 Fig. 1 (Section 46)
 - C. Access
 - (1) Location Zone
 - 191 Fairing Wing-to-Body, Forward, Lower Half, Left 192 Fairing - Wing-to-Body, Forward, Lower Half, Right
 - 193 Fairing Wing-to-Body, Aft, Lower Half, Left
 - 194 Fairing Wing-to-Body, Aft, Lower Half, Right
 - D. Procedure

s 034-002

- (1) If it is necessary, remove or disconnect the equipment that is attached to the fairing.
 - (a) Refer to the applicable chapter for the instructions to remove or disconnect the equipment.

s 024-003

(2) Remove the fairing:

ALL

(a) Remove the fasteners which attach the fairing to the structure.

NOTE: Different types of fasteners are used to hold the fairing panels. Stainless steel bolts and dimpled washers are used to hold the fairing panel and also to provide electrical bonding. Make sure you install these fasteners in the same locations when repair and maintenance is completed.

EFFECTIVITY-

53-51-01



(b) Remove the fairing.

TASK 53-51-01-004-024

- Wing-to-Body Fairing Removal Upper Half (Fig. 401)
 - A. General
 - (1) The wing-to-body fairing will be referred to as the fairing in this task.
 - B. References
 - (1) IPC 53-51-01 Fig. 1 (Section 42)
 - (2) IPC 53-51-01 Fig. 1 (Section 46)
 - C. Access
 - (1) Location Zone
 - 291 Fairing Wing-to-Body, Forward, Upper Half, Left
 - 292 Fairing Wing-to-Body, Forward, Upper Half, Right
 - 293 Fairing Wing-to-Body, Aft, Upper Half, Left
 - 294 Fairing Wing-to-Body, Aft, Upper Half, Right
 - D. Procedure

s 034-025

- (1) If it is necessary, remove or disconnect the equipment that is attached to the fairing.
 - (a) Refer to the applicable chapter for the instructions to remove or disconnect the equipment.

S 024-026

- (2) Remove the fairing:
 - (a) Remove the fasteners which attach the fairing to the structure.

NOTE: Different types of fasteners are used to hold the fairing panels. Stainless steel bolts and dimpled washers are used to hold the fairing panel and also to provide electrical bonding. Make sure you install these fasteners in the same locations when repair and maintenance is completed.

(b) Remove the fairing.

TASK 53-51-01-404-004

- 4. Wing-to-Body Fairing Installation Lower Half (Fig. 401)
 - A. General
 - (1) The wing-to-body fairing will be referred to as the fairing in this task.
 - B. Standard Tools and Equipment

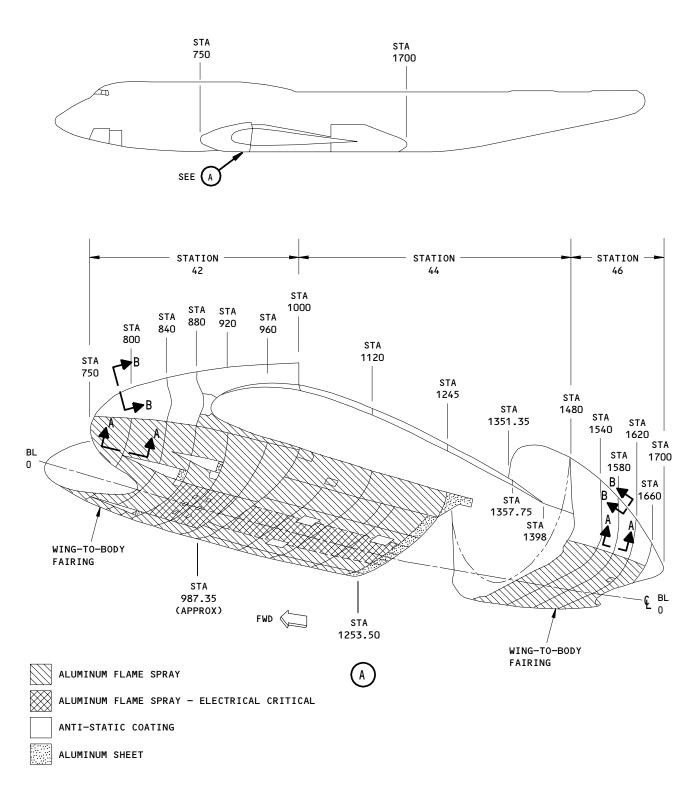
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- (1) Meter Bonding
- C. Consumable Materials
 - (1) G00009 Compound Corrosion inhibiting, BMS 3-23

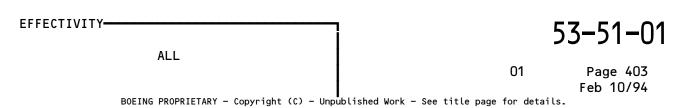
EFFECTIVITY-

53-51-01

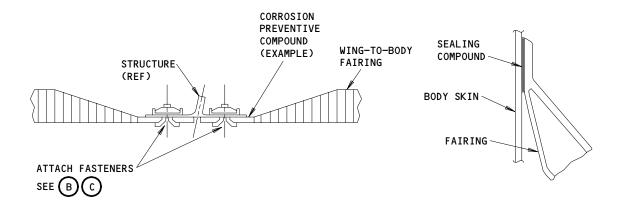




Wing-to-Body Fairing Installation Figure 401 (Sheet 1)

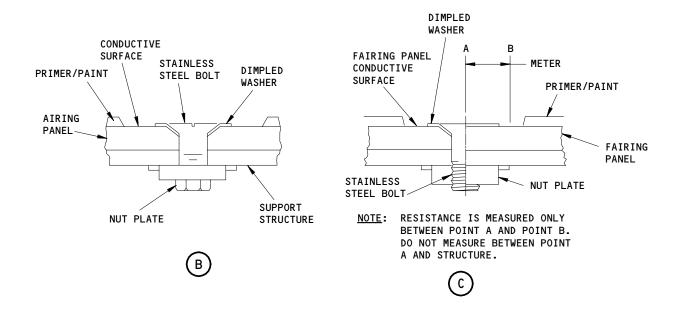






EXAMPLE FAIRING ATTACHMENT A-A

EXAMPLE FAIRING FLANGE ATTACHMENT
B-B



Wing-to-Body Fairing Installation Figure 401 (Sheet 2)

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- (2) A00249 Compound Sealing, BMS 5-26, Type II, Class A-2
- (3) A00247 Sealant Chromate, BMS 5-95, Type I
- D. References
 - (1) AMM 20-22-01/601, Electrical Bonding
 - (2) AMM 51-51-00/801, Bonded Rub Pads
 - (3) AMM 51-24-07/701, Skin and Fasteners
 - (4) AMM 51-24-13/701, Water Displacing Corrosion Preventive Compound
 - (5) IPC 53-51-01 Fig. 1 (Section 42)
 - (6) IPC 53-51-01 Fig. 1 (Section 46)
- E. Access
 - (1) Location Zones
 - 191 Fairing Wing-to-Body, Forward, Lower Half, Left
 - 192 Fairing Wing-to-Body, Forward, Lower Half, Right
 - 193 Fairing Wing-to-Body, Aft, Lower Half, Left
 - 194 Fairing Wing-to-Body, Aft, Lower Half, Right

F. Procedure

s 214-005

- (1) Examine the mating surfaces on the structure and the fairing panel.
 - (a) Make sure all mating surfaces are clean and free from any contamination or painting.

s 214-013

- (2) Make sure the teflon rubstrip is in a good condition.
 - (a) If it is necessary, repair the teflon rubstrip (AMM 51-51-00/801).

s 214-006

(3) Make sure the fasteners and the area around the fastener holes are clean.

<u>NOTE</u>: Fastener locations with stainless steel fasteners are usually at 4 locations per panel, (1) at each corner.

s 024-016

(4) Remove any paint or primer covering the conductive surface at the panel in the area underneath dimpled washer (Fig. 401).

s 214-017

ALL

- (5) If the conductive surface is flame sprayed aluminum, do the following:
 - (a) Apply alodine over exposed aluminum
 - (b) Install fasteners (stainless bolt and dimpled washer).
 - (c) Measure the resistance as shown in Figure 401.
 - 1) Maximum resistance shall not exceed 0.5 OHMs.

EFFECTIVITY-

53-51-01



(d) Touch up finish

s 214-018

- (6) If the conductive surface is anti-static coating, do the following:
 - (a) Apply anti-static paint over exposed area
 - (b) Install fasteners (stainless steel bolt and dimpled washer)
 - (c) Measure the resistance as shown in Figure 401.
 - 1) Maximum resistance shall not exceed 300,000 OHMs.
 - (d) Touch up finish.

<u>NOTE</u>: Do not apply anti-static paint to flame sprayed aluminum.

s 114-014

(7) Clean the body skin and the fasteners (AMM 51-24-07/701) for correct electrical bonding after the installation of the fairing.

s 374-007

(8) Apply the corrosion preventive compound, MIL-C-11796, to the flanges on the fairing which touches the structure.

s 394-049

CAUTION: DO NOT APPLY SEALANT BETWEEN FAIRING THAT HAVE HI-FLOAT NUTPLATES. STRUCTURAL DAMAGE TO THE FAIRING PANELS CAN RESULT DURING FLIGHT IF YOU APPLY SEALANT INCORRECTLY.

DO NOT APPLY SEALANT IN THE FAIRING-TO-SKIN JOINTS WHERE THERE ARE FLEXIBLE SEALS INSTALLED. STRUCTURAL DAMAGE TO THE FAIRINGS CAN RESULT IF YOU APPLY SEALANT INCORRECTLY.

(9) Apply the sealing compound, BMS 5-26 or BMS 5-95, to the flanges on the fairing which touches the body skin.

s 374-009

(10) Apply the corrosion inhibitive compound, BMS 3-23, to the area on the structure and the body skin which touches the fairing (AMM 51-24-13/701).

s 424-010

ALL

(11) Install the fasteners which attach the fairing to the structure.

NOTE: Make sure you install the stainless steel bolts and dimpled washers at the same locations on the fairing panel as they were prior to removal of the panels. Installing different hardware in these locations may result in unacceptable electrical bonding.

EFFECTIVITY-

53-51-01



s 434-012

(12) Connect or install the equipment to the fairing and do an operational test if the equipment was disconnected or removed.

(a) Refer to the applicable chapter for the instructions to connect, install or do an operational test of the equipment.

TASK 53-51-01-404-043

- 5. Wing-to-Body Fairing Installation Upper Half (Fig. 401)
 - A. General
 - (1) The wing-to-body fairing will be referred to as the fairing in this task.
 - B. Standard Tools and Equipment
 - (1) Meter Bonding
 - C. Consumable Materials
 - (1) G00009 Compound Corrosion inhibiting, BMS 3-23
 - (2) A00249 Compound Sealing, BMS 5-26, Type II, Class A-2
 - (3) A00247 Sealant Chromate, BMS 5-95, Type I
 - D. References
 - (1) AMM 20-22-01/601, Electrical Bonding
 - (2) AMM 51-51-00/801, Bonded Rub Pads
 - (3) AMM 51-24-07/701, Skin and Fasteners
 - (4) AMM 51-24-13/701, Water Displacing Corrosion Preventive Compound
 - (5) IPC 53-51-01 Fig. 1 (Section 42)
 - (6) IPC 53-51-01 Fig. 1 (Section 46)
 - E. Access
 - (1) Location Zones

291 Fairing - Wing-to-Body, Forward, Upper Half, Left

292 Fairing - Wing-to-Body, Forward, Upper Half, Right

293 Fairing - Wing-to-Body, Aft, Upper Half, Left

294 Fairing - Wing-to-Body, Aft, Upper Half, Right

F. Procedure

s 214-027

(1) Examine the mating surfaces on the structure and the fairing panel.

(a) Make sure all of the mating surfaces are clean and free from any contamination or painting.

s 214-028

(2) Make sure the teflon rubstrip is in a good condition.

(a) If it is necessary, repair the teflon rubstrip (AMM 51-51-00/801).

s 214-029

(3) Make sure the fasteners and the area around the fastener holes are clean.

NOTE: Fastener locations with stainless steel fasteners are usually at 4 locations per panel, (1) at each corner.

EFFECTIVITY-

53-51-01

ALL



s 024-030

(4) Remove any paint or primer covering the conductive surface at the panel in the area underneath dimpled washer (Fig. 401).

s 214-031

- (5) If the conductive surface is flame sprayed aluminum, do the following:
 - (a) Apply alodine over exposed aluminum
 - (b) Install fasteners (stainless bolt and dimpled washer).
 - (c) Measure the resistance as shown in Figure 401.

NOTE: Maximum resistance shall not exceed 0.5 OHMs.

(d) Touch up finish

s 214-032

- (6) If the conductive surface is anti-static coating, do the following:
 - (a) Apply anti-static paint over exposed area
 - (b) Install fasteners (stainless steel bolt and dimpled washer)
 - (c) Measure the resistance as shown in Figure 401.

NOTE: Maximum resistance shall not exceed 300,000 OHMs.

(d) Touch up finish.

<u>NOTE</u>: Do not apply anti-static paint to flame sprayed aluminum.

s 114-033

(7) Clean the body skin and the fasteners (AMM 51-24-07/701) for correct electrical bonding after the installation of the fairing.

s 374-034

ALL

(8) Apply the corrosion preventive compound, MIL-C-11796, to the flanges on the fairing which touches the structure.

EFFECTIVITY-

53-51-01



s 394-050

CAUTION: DO NOT APPLY SEALANT BETWEEN FAIRING THAT HAVE HI-FLOAT NUTPLATES. STRUCTURAL DAMAGE TO THE FAIRING PANELS CAN RESULT DURING FLIGHT IF YOU APPLY SEALANT INCORRECTLY.

DO NOT APPLY SEALANT IN THE FAIRING-TO-SKIN JOINTS WHERE THERE ARE FLEXIBLE SEALS INSTALLED. STRUCTURAL DAMAGE TO THE FAIRINGS CAN RESULT IF YOU APPLY SEALANT INCORRECTLY.

(9) Apply the sealing compound, BMS 5-26 or BMS 5-95, to the flanges on the fairing which touches the body skin.

s 374-036

(10) Apply the corrosion inhibitive compound, BMS 3-23, to the area on the structure and the body skin which touches the fairing (AMM 51-24-13/701).

s 424-037

(11) Install the fasteners which attach the fairing to the structure.

NOTE: Make sure you install the stainless steel bolts and dimpled washers at the same locations on the fairing panel as they were prior to removal of the panels. Installing different hardware in these locations may result in unacceptable electrical bonding.

s 434-042

ALL

(12) Connect or install the equipment to the fairing and do an operational test if the equipment was disconnected or removed.(a) Refer to the applicable chapter for the instructions to connect, install or do an operational test of the equipment.

EFFECTIVITY-



WING-TO-BODY FAIRING - ADJUSTMENT/TEST

1. General

- A. This procedure has one task. The task gives instructions to adjust the wing-to-body fairing.
- B. You must adjust the seal clearance between the wing skin and the seal edge which is shown in (Fig.501). You must do this to prevent possible damage to the fillet blade seal below the wing.
- C. Two procedures are used to measure the seal clearances. The first procedure measures the seal clearances with the fairing panel installed. The second procedure measures the seal clearances with the fairing panel removed.

TASK 53-51-01-825-001

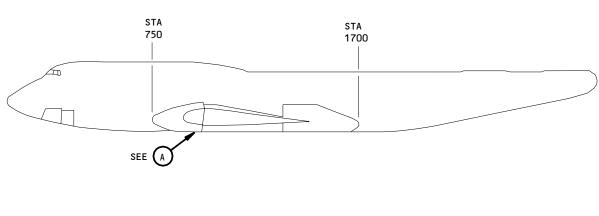
- 2. Wing-to-Body Fairing Adjustment (Fig. 501)
 - A. References
 - (1) 53-51-01/401, Wing-to-Body Fairing
 - (2) IPC 53-51-01 Fig. 1
 - B. Access
 - (1) Location Zones
 - 191 Wing-to-Body Fairing, Left
 - 192 Wing-to Body Fairing, Right
 - 193 Wing-to-Body Fairing, Left
 - 194 Wing-to-Body Fairing, Right

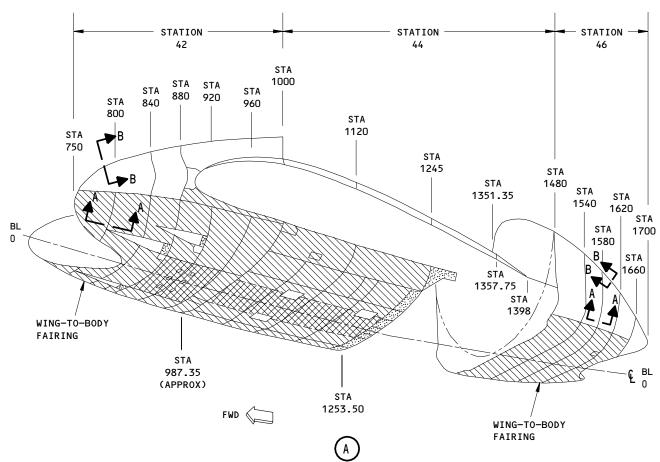
EFFECTIVITY-

ALL

53-51-01







ALUMINUM FLAME SPRAY

ALUMINUM FLAME SPRAY - ELECTRICAL CRITICAL

ANTI-STATIC COATING

ALUMINUM SHEET

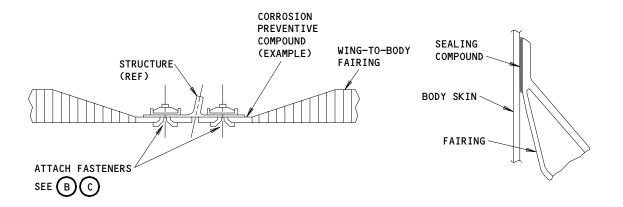
Wing-to-Body Fairing Adjustment Figure 501 (Sheet 1)

ALL

O1 Page 502
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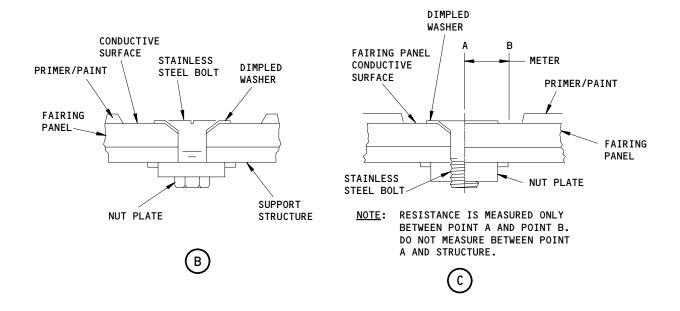
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EXAMPLE FAIRING ATTACHMENT A-A

EXAMPLE FAIRING FLANGE ATTACHMENT B-B



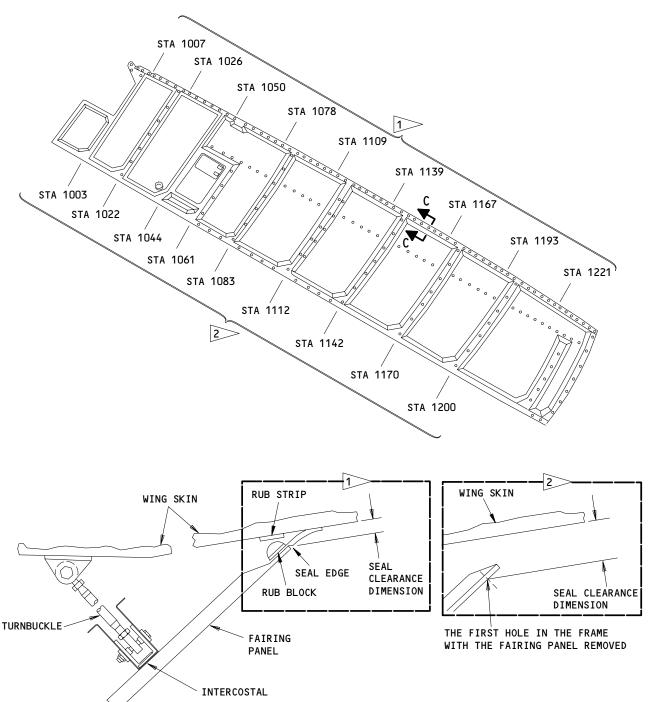
Wing-to-Body Fairing Adjustment Figure 501 (Sheet 2)

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UNDERWING FAIRING SEAL CLEARANCE (EXAMPLE) C-C

1 THE MEASUREMENT LOCATIONS WITH THE FAIRING PANEL INSTALLED

2 THE MEASUREMENT LOCATIONS WITH THE FAIRING PANEL REMOVED

Wing-to-Body Fairing Adjustment Figure 501 (Sheet 3)

ALL

278261

53-51-01

01

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C. Measure the Seal Clearances with the Fairing Panel Installed.

s 225-012

(1) Use the chart below to measure the seal clearance (Fig.501):

THE FAIRING PANEL INSTALLED

Body Station	Seal Clearance Dimension (+/- 0.03 inch)
1007	0.55
1026	0.56
1050	0.54
1078	0.53
1109	0.53
1139	0.58
1167	0.60
1193	0.64
1221	0.67

s 225-008

- (2) Measure the seal clearances with the fairing panel removed if it is necessary.
- Measure the Seal Clearances with the Fairing Panel Removed.

ALL

(1) Remove the fairing panel (Ref 53-51-01/401).

EFFECTIVITY-

53-51-01

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s 225-007

(2) Use the chart below to measure the seal clearance (Fig.501):

<u>NOTE</u>: Measure the clearance from the first fastener hole in the frame.

FAIRING PANEL REMOVED

Body Station	Seal clearance Dimension (+/- 0.03 inch)
1003	1.09
1022	1.09
1044	1.13
1061	1.18
1083	1.14
1112	1.26
1142	1.40
1170	1.48
1200	1.61

s 825-009

(3) Adjust the turnbuckle to get the dimensions in the chart.

s 425-010

(4) Connect the fairing panel to the wing skin but do not install all of the fasteners.

s 215-013

(5) At fastener locations with stainless steel fasteners, usually 4 locations per panel, (1) at each corner.

s 025-014

(6) Remove any paint or primer covering the conductive surface at the panel in the area underneath dimpled washer per View B.

EFFECTIVITY-

53-51-01

ALL



s 215-015

- (7) If the conductive surface is flame sprayed aluminum, do the following:
 - (a) Apply alodine over exposed aluminum
 - (b) Install fasteners (stainless bolt and dimpled washer)
 - (c) Measure resistance in accord with View C
 - (d) Maximum resistance shall not exceed 0.5 OHMS
 - (e) Touch up finish

s 215-016

- (8) If the conductive surface is anti-static coating, do the following:
 - (a) Apply anti-static paint over exposed area
 - (b) Install fasteners (stainless steel bolt and dimpled washer)
 - (c) Measure resistance in accord with View C
 - (d) Maximum resistance shall not exceed 300,000 OHMs.
 - (e) Touch up finish

NOTE: Do not apply anti-static paint to flame sprayed aluminum.

s 225-011

(9) Measure the seal clearances with the fairing panel installed (Fig.501).

s 425-005

(10) Install all of the fasteners to complete the installation of the fairing panel (Ref 53-51-01/401).

NOTE: Make sure the stainless steel bolts and dimpled washers are installed at the same location(s) on the fairing panel as they were prior to removal of the panels. Installing different hardware in these location(s) may result in unacceptable electrical bonding.

s 765-017

(11) Measure electrical bonding resistance between conductive fasteners and the fairing panel conductive surface, see View C.

s 765-019

ALL

(12) Maximum resistance shall not exceed 300,000 OHMS for conductive paint.

EFFECTIVITY-

53-51-01

i



s 765-018

(13) Maximum resistance shall not exceed 0.5 OHMS for flame spray.

NOTE: Make resistance measurement prior to painting the panel and the mounting hardware. If the fairing panel(s) and bolt(s) have been covered with paint, you may not get correct reading. In that case, use two sharp probes and make sure the probes contact the conductive finish on the panel and the matel on the mounting hardward and then measure the resistance.

 53-51-01

01

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WING-TO-BODY FAIRINGS - CLEANING/PAINTING

1. General

- A. This procedure has one task. The task gives instructions to clean and paint the wing-to-body fairing.
- B. The underwing fairings have one layer of flame-sprayed aluminum, clear alodine, primer, and then polyurethane enamel.
- C. The overwing fairings have one layer of the conditioner and the conductive coating, primer, and then polyurethane enamel.

TASK 53-51-01-307-001

- 2. Wing-to-Body Fairing Cleaning and Painting
 - A. Consumable Materials
 - (1) C00064 Alodine Clear, MIL-C-5541
 - (2) C00584 Primer BMS 10-79, Type II
 - (3) C00032 Enamel Boeing color 7025 gray glass BMS 10-60
 - (4) CO0058 Conditioner Surface Static, Magna 28-C-1
 - (5) C00059 Surfacer Magna, 9-W-5
 - (6) C00313 Coating Conductive, Desoto 3202009, Base
 - (7) COO313 Coating Conductive, Desoto 6108101, Catalyst
 - B. References
 - (1) 51-21-01/701, Interior and Exterior Finishes (Prepaint Cleaning and Pretreatment)
 - (2) 51-21-04/701, Alodized Surfaces
 - (3) 51-24-03/701, Conductive Coating System for Exterior Fiberglass
 - (4) 51-24-11/701, Decorative Paint System
 - (5) SRM 51-70-14, Typical Fiberglass-Cloth Reinforced Plastic Repair
 - C. Access
 - (1) Location Zones
 - 191 Fairing Wing-to-Body, Forward, Lower Half, Left 192 Fairing - Wing-to-Body, Forward, Lower Half, Right
 - 193 Fairing Wing-to-Body, Aft, Lower Half, Left
 - 194 Fairing Wing-to-Body, Aft, Lower Half, Right
 - 291 Fairing Wing-to-Body, Forward, Upper Half, Left
 - 292 Fairing Wing-to-Body, Forward, Upper Half, Right
 - 293 Fairing Wing-to-Body, Aft, Upper Half, Left
 - 294 Fairing Wing-to-Body, Aft, Upper Half, Right

EFFECTIVITY-

53-51-01

ALL



D. Paint the Underwing Wing-to-Body Fairings

s 117-002

(1) Clean the wing-to-body fairing (Ref 51-21-02/701).

s 377-003

(2) Repair the aluminum flame spray (SRM 51-70-14).

s 377-004

(3) Apply the clear alodine to the flame spray (Ref 51-21-04/701).

s 377-005

(4) Apply the primer (Ref 51-24-11/701).

s 377-006

(5) Apply the polyurethane enamel (Ref 51-24-11/701).

E. Paint the Overwing Wing-to-Body Fairing

s 117-007

(1) Clean the wing-to-body fairing (Ref 51-21-02/701).

s 377-008

(2) Apply the conditioner and the conductive coating (Ref 51-24-03/701).

s 377-009

(3) Apply the primer (Ref 51-24-11/701).

s 377-010

(4) Apply the polyurethane enamel (Ref 51-24-11/701).

EFFECTIVITY-

53-51-01



NOSE RADOME - DESCRIPTION AND OPERATION

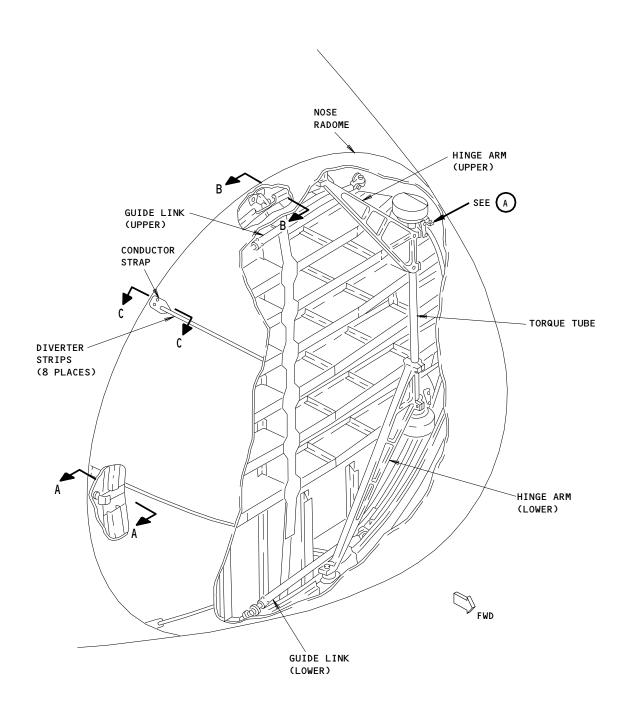
1. General (Fig. 1)

- A. The nose radome is a fairing that extends forward from body station 134. Its functions are to house the weather radar antenna and to fair in the forward end of the fuselage.
- B. The cone-shaped nose radome is constructed of preimpregnated epoxy resin glass fabric material forming inner and outer skins with a honeycomb core. The exterior finish is an erosion-resistant coating.
- C. Twenty-four alignment fittings distributed about the aft periphery of the radome provide for adjustment of the radome to fuselage gap and mismatch. Each alignment fitting roller on the radome nests in a mating fitting on the forward bulkhead ring. Six hook-and-eye bolt latches are distributed among the alignment fittings. These latches secure the radome in the closed position.
- D. The radome pivots on upper and lower hinge arms attached to the left side of the bulkhead. Upper and lower guide links control the radome rotation allowing it to pivot slightly forward, then to the left and aft until the hinge arms strike the rubber bumpers attached to the bulkhead. Snubbers restrict any quick movement of the radome. Quick-release pins installed in hold-open fittings on the bulkhead and the hinge arms secures the radome in the open position.
- E. Aluminum diverter strips, installed longitudinally on the radome exterior, provide the radome with lightning strike protection. They extend approximately over the aft two-thirds of the radome surface. A conductor strap makes contact with the diverter strip and conductor spring on the inside of the radome. The conductor spring contacts a channel on the forward fuselage bulkhead, completing the grounding circuit from the diverter strip to the fuselage structure. The faying surfaces of the diverter strip, conductor strap, conductor spring, and the bulkhead conductor channel should remain unpainted and clean. The conductor spring must make positive contact with the channel on the bulkhead when the radome is closed.
- F. An extruded rubber seal extends around the periphery of the aft end of the radome, except for a short distance at the bottom. The seal is attached to the forward bulkhead ring by an aluminum retainer.

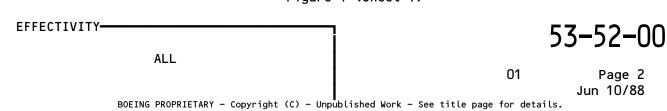
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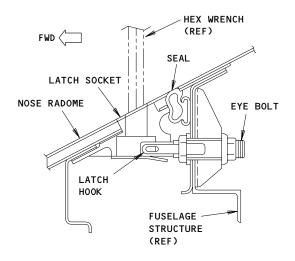




Nose Radome Figure 1 (Sheet 1)





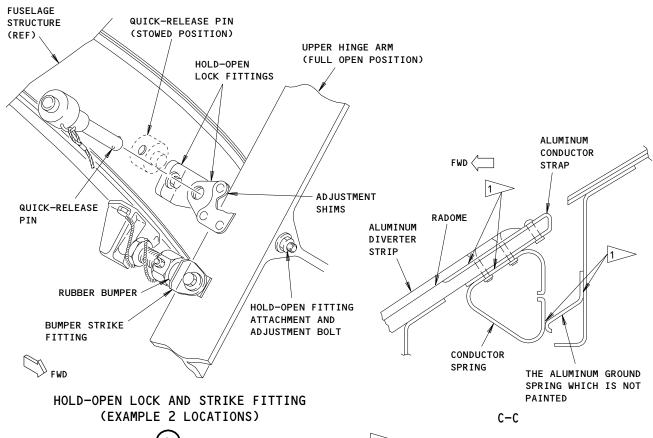


NOSE RADOME

ALIGNMENT FITTING
ROLLER

LATCH
(EXAMPLE 6 LOCATIONS)
A-A

ALIGNMENT FITTINGS (EXAMPLE 24 LOCATIONS) B-B



A

281321

> ALL MATING SURFACES MUST BE CLEAN AND NOT PAINTED TO GIVE A CORRECT GROUND.

Nose Radome Figure 1 (Sheet 2)

ALL

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NOSE RADOME - MAINTENANCE PRACTICES

1. General

- A. This section contains five tasks:
 - (1) nose radome opening,
 - (2) nose radome closing,
 - (3) nose radome removal,
 - (4) nose radome installation.
 - (5) nose radome temporary repair
- B. The removal of the nose radome must be done in a hangar or equivalent area for the protection of the components in the radome.

TASK 53-52-01-012-001

2. Nose Radome Opening

- A. Access
 - (1) Location Zone

111 Radome

B. Procedure

s 012-002

(1) Open the nose radome (Fig. 201):

CAUTION: WHEN YOU RELEASE THE NOSE RADOME LATCHES, MAKE SURE THE HEX WRENCH IS INSERTED FULLY INTO THE LATCH BEFORE YOU TURN THE WRENCH (SEE SECTION D-D).

DO NOT USE FORCE OR A HAMMER TO PUSH THE WRENCH INTO THE LATCH.

IF YOU DO NOT FOLLOW THESE STEPS, DAMAGE TO THE LATCH CAN OCCUR.

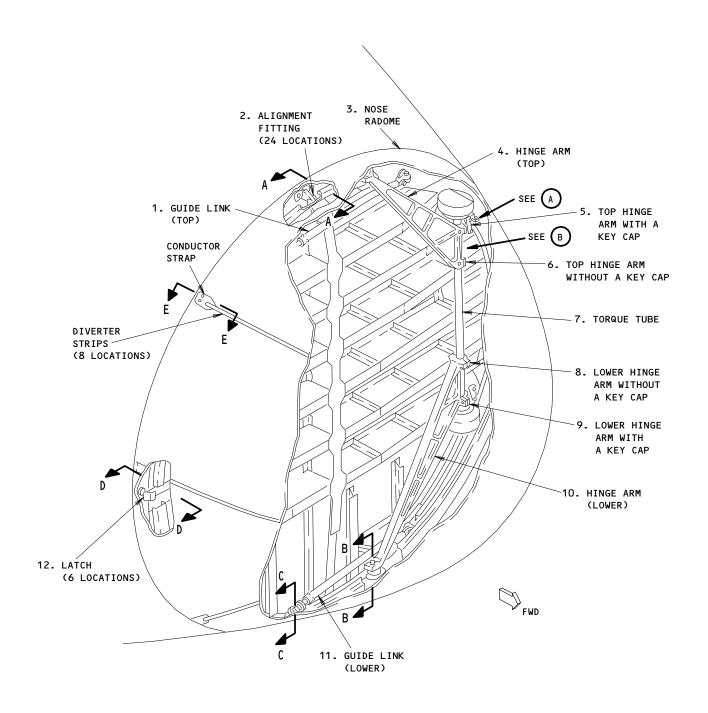
- (a) Put a 5/16-inch hex wrench into the latch socket (Section D-D).
- (b) Push the hex wrench and turn it counterclockwise until the latch hook disengages from the latch eye bolt.

EFFECTIVITY-

53-52-01

01.1





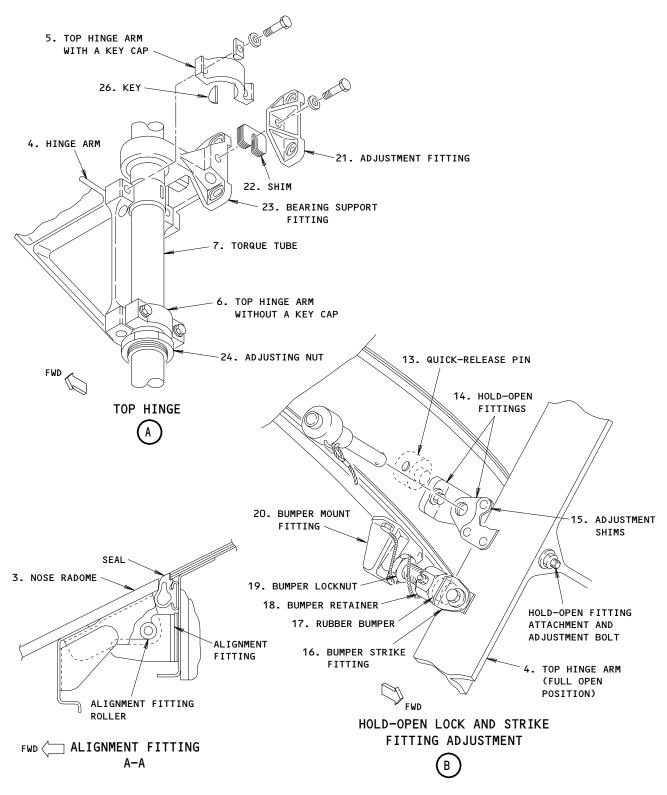
Nose Radome Installation Figure 201 (Sheet 1)

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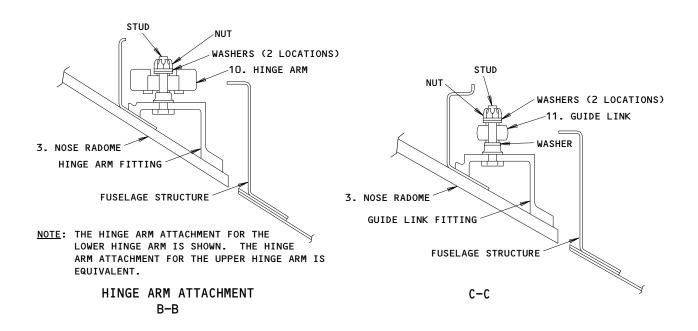
Nose Radome Installation Figure 201 (Sheet 2)

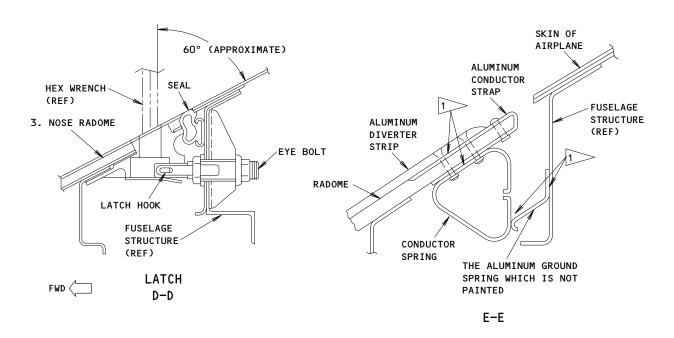
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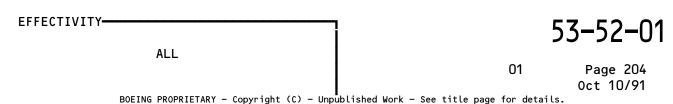






ALL MATING SURFACES MUST BE CLEAN AND NOT PAINTED TO SUPPLY A CORRECT GROUND.

Nose Radome Installation Figure 201 (Sheet 3)





- (c) Repeat the two steps given before for the five remaining latches.
- (d) Open the nose radome until the bumper strike fitting on the upper and lower hinges touches the rubber bumper on the bulkhead (Detail B).
- (e) Push the plunger on the quick-release pins found near each rubber bumper, and remove the pin from the recess.
- (f) Install a quick-release pin in each hold-open fitting.

TASK 53-52-01-412-003

3. Nose Radome Closing

- A. Access
 - (1) Location Zone 111 Radome
- B. Procedure

s 412-004

- (1) Close the nose radome (Fig. 201):
 - (a) Push the plunger on the quick-release pins and remove the pin from each hold-open fitting (Detail B).
 - (b) Put a quick-release pin in each recess that is found near a rubber bumper.
 - (c) Close the nose radome.
 - (d) Put a 5/16-inch hex wrench into the latch socket (Section D-D).
 - (e) Push the hex wrench and turn it clockwise until the latch hook is tightly engaged in the latch eye bolt.
 - (f) Repeat steps (d) and (e) for the five remaining latches.

TASK 53-52-01-002-020

- 4. Nose Radome Removal
 - A. Special Tools and Equipment
 - (1) 20HME65B07930 Sling Nose Radome Overhead Mechanical Equipment
 - B. Standard Tools and Equipment
 - Lift Mobile Mechanical (or equivalent overhead crane)

<u>NOTE</u>: The lift must extend to a height of 26 feet and lift 200 pounds.

EFFECTIVITY-

53-52-01

01.1



- C. References
 - (1) IPC 53-52-04 Fig. 1
- Access
 - (1) Location Zone 111 Radome
- E. Procedure

s 012-006

Open the nose radome (Ref par. "Nose Radome Opening").

s 492-007

(2) Install the sling around the nose radome and attach the sling to the lift or crane (Fig. 202).

s 022-008

- (3) Remove the nose radome:
 - Remove the cotter pin, nut and washers to disconnect the guide links (1 and 11) from the guide link fitting on the nose radome (Fig. 201, Detail C-C).
 - (b) Disconnect the top and lower hinge arms from the hinge arm fittings on the nose radome:
 - Remove the cotter pin, nut and two washers (Fig. 201, Section B-B) from the top and lower hinge arm fittings.
 - 2) Loosen the bolts through the cap without a key on the lower hinge arm.
 - Remove the cap (9) with a key (26) on the lower hinge arm. 3)
 - 4) Lift the lower hinge arm (10) along the torque tube (7) and remove the hinge arm from the stud on the hinge arm fitting (Section B-B).
 - 5) Lift the nose radome to lift the stud out of the bearing on the top hinge arm.
 - (c) Remove the nose radome from the airplane.

TASK 53-52-01-402-019

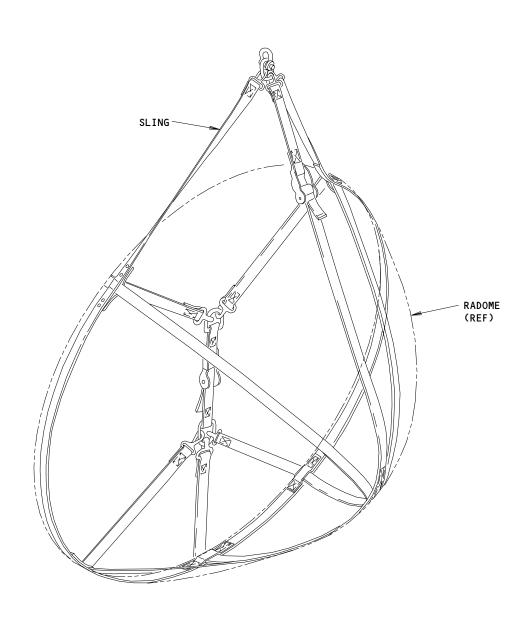
- 5. Nose Radome Installation (Fig. 201)
 - Special Tools and Equipment
 - (1) 20HME65B07930 Sling - Nose Radome Overhead Mechanical Equipment

EFFECTIVITY-

53-52-01

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Sling Installation Figure 202

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- B. Standard Tools and Equipment
 - (1) Lift Mobile Mechanical (or equivalent overhead crane)

NOTE: The lift must extend to a height of 26 feet and lift 200 pounds.

- (2) Meter Bonding (Ref 20-22-01/601)
- C. Consumable Materials
 - (1) E00000 Abrasive Paper
 - (2) G00000 Putty or equivalant material
- D. References
 - (1) 20-22-01/601, Electrical Bonding
 - (2) 53-52-01/701, Nose Radome
 - (3) IPC 53-52-04 Fig. 1
- E. Access
 - (1) Location Zone

111 Radome

F. Procedure

s 372-010

(1) If a new nose radome will be installed, apply the erosion protection to the radome if it is necessary (Ref 53-52-01/701).

s 492-011

(2) Install the sling around the nose radome and attach the sling to the lift or crane (Fig. 202).

s 422-012

- (3) Install the nose radome:
 - (a) Attach the nose radome to the top and lower hinge arms (Fig. 201):
 - 1) Put the stud on the fitting for the top hinge arm at BL 6.0 through the bearing at the end of the top hinge arm (4).
 - 2) Install the two washers, nut and cotter pin on the stud.
 - 3) Loosen the bolts through the cap (8) without a key on the lower hinge arm.
 - 4) Remove the cap (9) and the key (26) from the lower hinge arm.
 - 5) Lift the lower hinge arm (10) along the torque tube (7), then lower the bearing over the stud on the lower hinge arm fitting at BL 6.0. Lower the lower hinge arm (10) until it touches the shoulder on the retainer of the hinge arm fitting.

EFFECTIVITY-

53-52-01

01.1



- 6) Adjust the lower adjustment nut if it is necessary.
- 7) Install the two washers, nut and cotter pin on the stud (Section B-B).
- 8) If it is necessary to replace the lower snubber, do this step:
 - a) Turn the tooth on the index shaft of the lower snubber 180 degrees from the installed position of the tooth on the index shaft of the upper snubber.

s 092-013

(4) Remove the sling.

s 822-014

- (5) Adjust the nose radome:
 - (a) Close the nose radome.
 - (b) Make sure each latch (12) operates with less than 100 pound-inches of torque.
 - (c) Make sure the rollers on the adjacent alignment fitting is installed correctly in the radii of the mating fittings.
 - (d) Adjust the eyebolt nuts if it is necessary and install the lockwire to the adjacent structure (Fig. 201, Section D-D).

NOTE: You can do a check of the fit with putty or an equivalent material.

- (e) Close the nose radome and make sure the latch engages.
- (f) Make sure the nose radome and seal mismatch are in the tolerances shown in Fig. 203.
 - If the nose radome or seal mismatch is not within the tolerances, adjust the alignment fittings and do steps (e) and (f) again if it is necessary (Fig. 201, Section A-A).
- (g) Adjust the hinges and supports:

NOTE: Do steps 3) thru 6) from within the nose radome.

1) Remove the shims (22, Fig. 201, Detail A) between the bearing support fittings (23) and their adjustment fittings (21).

<u>NOTE</u>: The installation of the shim is equivalent on the top and lower hinge.

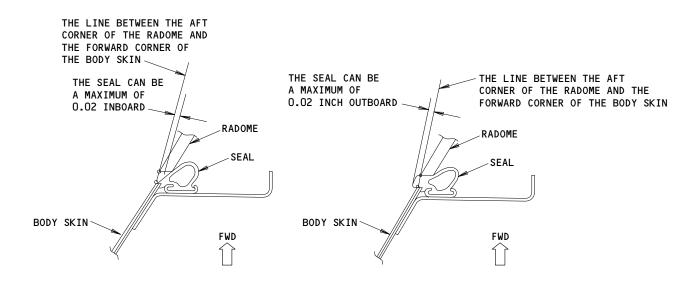
- Loosen the attach screws through the bearing support fitting (23) at the top and lower hinges.
- 3) Install the shims (22, Fig. 201, Detail A) if it is necessary between the bearing support fittings (23) and their adjustment fittings (21).
- 4) Tighten the shim retainer bolts and the top and lower attachment bolts.
- 5) Install the cap (9, Fig. 201) with a key on the lower hinge arm.

EFFECTIVITY-

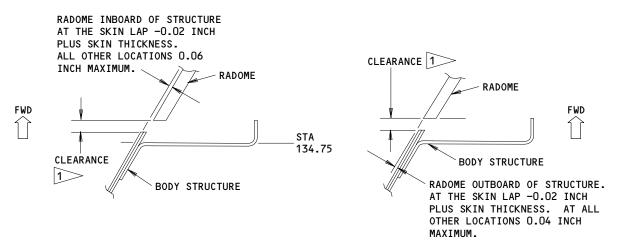
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SEAL ADJUSTMENT LIMITS



RADOME ADJUSTMENT LIMITS

THE CLEARANCE IS 0.25 ±0.06 INCH AT THE BOTTOM OF THE RADOME WHERE THERE IS AN OVERLAP OF THE SKIN. AT ALL OTHER LOCATIONS THE CLEARANCE IS 0.34 ±0.06 INCH.

Nose Radome Adjustment Limits Figure 203

ALL

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- 6) Tighten all of the screws through the caps.
- 7) Lift the top and lower adjusting nuts (24) on the torque tube (7) until contact is made with the top and lower hinge arms.
- 8) Install the lockwire on the adjusting nuts (24) to the adjacent bolts on the caps.
- (h) Adjust the guide links:.

NOTE: Do these steps from in closed nose radome cavity.

- 1) Adjust the length of the guide links to attach it to the mating stud of the top and lower the attachment fitting at RBL 15.0.
- 2) Install a lockwire to the guide links.
- 3) Attach the guide links to the nose radome and install the nuts and cotter pins (Fig. 201, Section C-C).
- (i) Adjust the bumper retainers (18, Fig. 201, Detail B) fully in the aft direction.
- (j) Open the nose radome sufficiently to permit the installation of the hold-open quick-release pin (13) through the mating hold-open fittings (14).
- (k) Adjust the shims (15) on the top and lower hold-open fitting until you can install the pin.
- (1) Adjust the bumper retainers (18) until the rubber bumper (17) touches the strike fittings (16) on hinge arms.
- (m) Remove the pins (13) and continue to adjust the bumper retainers in the forward direction for one completed turn.
- (n) Tighten the locknuts (19) on the rubber bumper and install a lockwire to the hole in the bumper mount fitting (20).

s 222-015

- (6) Do a check of the bonding resistance on the nose radome:
 - (a) With the nose radome open, measure the bonding resistance between the bottom of the diverter strips, at the end which is adjacent to the bulkhead, and the conductor spring.

s 412-016

(7) Close the nose radome (Ref. par. "Nose Radome Closing").

s 762-017

- (8) With the nose radome closed, measure the bonding resistance between the diverter strips on the nose radome and body skin.
 - (a) Make sure the maximum resistance is not more than 0.01 ohms (Section E-E) (Ref 20-22-01/601).

s 142-018

- (9) If the bonding resistance is not satisfactory, do these steps:
 - (a) Clean the mating surfaces between the conductor spring on the nose radome and the conductor channel on the bulkhead with fine abrasive paper.

EFFECTIVITY-

53-52-01

ALL



(b) Do the check of the bonding resistance again.

ALL ALL

53-52-01

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TASK 53-52-01-302-022

- 6. Nose Radome Approved Repairs
 - A. Consumable Materials
 - (1) GOO619 Scotchcal Tape No. 850 (clear), No. 853, or Permacel P95
 - B. References
 - (1) SRM 53-10-72, Nose Radome
 - C. Access
 - (1) Location Zone

111 Radome

D. Procedure

s 352-021

- (1) Repair the nose radome.
 - (a) Do these steps if the damage is less than one square inch:
 - 1) Put tape on the area that has damage.
 - 2) Do the permanent repairs in the Structural Repair Manual (SRM 53-10-72) as soon as possible.
 - (b) If the damage is more than one square inch, do the permanent repairs in the Structural Repair Manual (SRM 53-10-72).

EFFECTIVITY-

53-52-01

ALL



NOSE RADOME - INSPECTION/CHECK

1. General

- A. This procedure contains a task to do a check of the nose radome.
- B. To do a check of the nose radome you must do these steps:
 - (1) Do a visual check of the radome for damage.
 - (2) Do a check for moisture in the radome.
 - (3) Do a visual check of the diverter strips for damage.
 - (4) Do a check of the diverter strips for conductance.
- C. You must make sure the installation of the nose radome is correct.

TASK 53-52-01-206-001

- 2. Nose Radome Inspection
 - A. Standard Tools and Equipment
 - (1) Meter Bonding (Ref 20-22-01/601)
 - (2) Detector Moisture Register (Model: A8-AF).

Penta Engineering

Moisture Register Products

P.O.BOX 369

La Verne CA 91750-0369

Phone (714) 392-5833

Fax (714) 392-5838

- B. References
 - (1) 53-52-01/201, Nose Radome
- C. Access
 - (1) Location Zone

111 Radome

D. Procedure

s 216-002

(1) Examine the nose radome for holes, scuffs, cracks, blisters, and delamination.

NOTE: To find the delamination, lightly hit the radome skin with a small metal object. For example, you can use a short socket handle.

s 216-012

(2) Look for signs of lightning strikes (Ref 05-51-13/201).

EFFECTIVITY-

53-52-01



s 286-003

(3) Do a check for moisture.

NOTE: The moisture register detector measures the conductance of the radome material to find moisture. The register contains two major parts, the gun and the case. The gun contains the electrodes and the oscillator circuits. The case contains the ON-OFF switch, the meter control to adjust to zero, and the batteries.

- (a) Adjust the meter until it shows zero:
 - Move the gun part of the moisture register detector to a minimum of 3 inches from an object.

NOTE: An object near the gun will cause the zero adjustment on the meter to change.

2) Push the ON-OFF button on the case of the moisture register detector to ON.

NOTE: The moisture register detector must be on during the full check.

- a) Permit the moisture register detector to become stable.
- b) Use the adjustment knob on the left of the handle to adjust the needle to zero on the dial.
- (b) Do a check of the radome:
 - 1) Open the nose radome.
 - 2) Move the gun of the moisture register detector until the gun electrodes touch the inner surface of the radome.
 - 3) Make sure the eight electrodes touch the surface of the nose radome.
 - 4) Move the gun along all the inner surface and make sure the meter stays in the GOOD (0-5) range.
 - 5) Do a check again of the areas which cause the meter to read more than one.
 - 6) If there is an indication of moisture (above 5 on the scale), remove moisture and seal in accordance with SRM 53-10-72/201 Paragraph 4.

S 216-004

(4) Make sure the attachment of the aluminum diverter strips is tight.

<u>NOTE</u>: Sharp corners or points along a conductive strip can cause the radio transmission to not operate correctly.

s 216-006

(5) Do a check for burned areas and corrosion.

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s 416-007

(6) Close the nose radome.

s 766-014

- Measure the resistance between the diverter strips and the body (7) structure skin.
 - (a) Maximum reading should be 0.01 Ohms although in-service values up to 0.1 Ohms are common.

Resistances above 0.01 Ohms can indicate potential NOTE: corrosion build-up on faying surfaces. High readings can be reduced by cleaning those surfaces as indicated below.

1) If resistance requirement is not met, clean fayings surfaces between radome conductor spring and conductor channel on bulkhead with fine abrasive paper and recheck reading

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NOSE RADOME - CLEANING/PAINTING

1. General

- A. This procedure has one task. This task gives instructions to clean and paint the nose radome.
- B. Moisture can cause damage to the nose radome if it is not protected. The primer and the paint on the surface of the radome protect it from moisture. It is not satisfactory for untreated radome surfaces to be exposed to the weather.

TASK 53-52-01-307-001

2. Nose Radome - Painting

- A. References
 - (1) 51-21-02/701, Interior and Exterior Finishes (Prepaint Cleaning and Pretreatment)
 - (2) 51-24-11/701, Decorative Paint System
- B. Access
 - (1) Location Zone 111 Radome
- C. Procedure

s 117-005

(1) Do this task to clean and pretreat the nose radome: "Interior and Exterior Finishes (prepaint cleaning and pretreatment) Cleaning and Painting" (Ref 51-21-02/701).

s 377-006

(2) Do this task to paint the nose radome: "Decorative Paint System" (Ref 51-24-11/701).

s 227-008

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(3) Examine the thickness of the paint in the rain erosion area of the nose radome.

NOTE: The thickness of the paint must be between 4 to 6 mils.

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NOSE RADOME SNUBBER - REMOVAL/INSTALLATION

1. General

A. This procedure has two tasks to remove and install the higher and lower nose radome snubbers.

TASK 53-52-03-004-006

- 2. Remove the Nose Radome Snubber
 - A. References
 - (1) 12-12-03/301, Nose Radome Hinge Snubber
 - (2) IPC 53-52-03 Fig. 1
 - B. Access
 - (1) Location Zone

111 Radome

C. Procedure

s 034-011

CAUTION: WHEN YOU OPEN THE NOSE RADOME LATCHES, MAKE SURE YOU ALIGN THE HEX WRENCH WITH THE WRENCH RECESS (APPROXIMATELY 60 DEGREES TO THE RADOME SURFACE). DAMAGE CAN EASILY OCCUR TO THE LATCH MECHANISM IF THE HEX WRENCH IS INCORRECTLY ALIGNED DURING THE LATCH OPERATION.

(1) Use the 5/16-inch Allen Wrench to release the six latches.

s 014-007

(2) Move the radome open.

s 014-008

(3) Hold the radome open with the hold-open lock.

s 024-012

- (4) Remove the snubber:
 - (a) Examine the dimension between the top face of the lower bearing and the shoulder on the torque shaft.
 - 1) Make sure the dimension is approximately 2 inches.

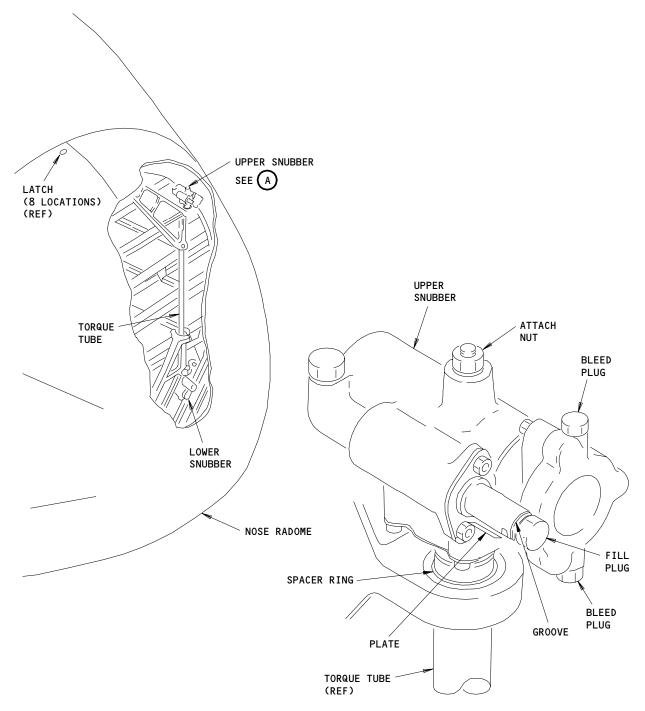
CAUTION: PUT THE SPACER IN THE CORRECT LOCATION BEFORE YOU LOOSEN THE NUT ABOVE THE HIGHER SNUBBER. IF THE SPACER IS ON THE INCORRECT LOCATION, THE RADOME ASSEMBLY CAN MOVE DOWN AND CAUSE DAMAGE TO THE EQUIPMENT.

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NOSE RADOME SNUBBER (UPPER SNUBBER SHOWN, LOWER SNUBBER ALMOST THE SAME)



Nose Radome Snubber Installation Figure 401

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- (b) Install spacer sections between the lower bearing and the shoulder on the torque shaft.
- (c) Install a clamp on the torque shaft.
- (d) Remove the nut that holds the snubber.
- (e) Remove the snubber.

TASK 53-52-03-404-014

- 3. <u>Install the Nose Radome Snubber.</u>
 - A. References
 - (1) 12-12-03/301, Nose Radome Hinge Snubber
 - (2) IPC 53-52-03 Fig. 1
 - B. Access
 - (1) Location Zone

111 Radome

- C. Procedure
 - s 424-009
 - (1) Install the snubber.
 - (a) Align the spline on the snubber with the spline on the torque shaft.
 - (b) Install the snubber.
 - (c) Install the attach nut.
 - (d) Remove the clamp and the spacers from the torque shaft.

s 414-010

CAUTION: WHEN YOU CLOSE THE NOSE RADOME LATCHES, MAKE SURE YOU ALIGN THE HEX WRENCH WITH THE WRENCH RECESS (APPROXIMATELY 60 DEGREES TO THE RADOME SURFACE). DAMAGE CAN EASILY OCCUR TO THE LATCH MECHANISM IF THE HEX WRENCH IS INCORRECTLY ALIGNED DURING THE LATCH OPERATION.

(2) Use the 5/16-inch hex wrench to close and latch the nose radome.

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LIGHTNING DIVERTER STRIPS - MAINTENANCE PRACTICES

1. General

- A. This procedure contains three tasks:
 - (1) The removal of the lightning diverter strips of the nose radome
 - (2) The installation of the lightning diverter strips
 - (3) The inspection of the lightning diverter strips.
 - (4) You must do these steps to remove a diverter strip:
 - (a) Open the nose radome
 - (b) Pull the diverter strip from the radome
 - (c) Clean the sealant from the radome.
 - (5) You must do these steps to install a diverter strip:
 - (a) Prepare a radome surface
 - (b) Bond the diverter strip to the radome
 - (c) Examine the electrical resistance.
 - (6) You must do these steps to examine the diverter strips:
 - (a) Visually inspect for the damage
 - (b) Examine the electrical resistance.

TASK 53-52-04-002-001

- 2. Nose Radome Lightning Diverter Strip Removal
 - A. Consumable Materials
 - (1) B00148 Solvent Methyl Ethyl Ketone (MEK), TT-M-261
 - (2) G00033 Cheesecloth BMS 15-5
 - B. References
 - (1) 53-52-01/201, Nose Radome
 - C. Procedure

s 012-002

(1) Open the nose radome and keep it in the open position or remove the radome (Ref 53-52-01/201).

s 022-003

- (2) Remove the lightning diverter strip (Fig. 201).
 - (a) Remove the screws that attach the diverter strip to the radome.

NOTE: Remove the nuts from the inner side of the radome where the diverter strip attaches to the conductor spring and the lower ring segment.

(b) Pull the diverter from the radome.

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s 112-015

WARNING: DO NOT GET SOLVENTS IN YOUR MOUTH, OR YOUR EYES, OR ON YOUR SKIN. DO NOT BREATHE THE FUMES FROM SOLVENTS. SOLVENTS ARE HAZARDOUS MATERIALS. SOLVENTS MAY BE FLAMMABLE OR HARMFUL TO THE ENVIRONMENT. REFER TO PRODUCT MATERIAL SAFETY DATA SHEETS (MSDS) AND LOCAL REQUIREMENTS FOR PROPER HANDLING PROCEDURES.

(3) Remove all the remaining sealant with the cheesecloth that is moist with BMS 11-7, FCC-55, MEK:sec-butyl alcohol (42:58), MEK, or MPK.

TASK 53-52-04-402-004

- 3. Nose Radome Lightning Diverter Strip Installation
 - A. Consumable Materials
 - (1) A00247 Sealant Chromate, BMS 595
 - (2) B00083 Aliphatic Naphtha, TT-N-95
 - B. References
 - (1) 53-52-01/201, Nose Radome
 - (2) 53-52-01/701, Nose Radome
 - C. Procedure

s 372-005

(1) Repair the radome protective finish, when it is necessary (Ref 53-52-01/701).

s 142-006

(2) Clean the mating surfaces of the grounding plate and the diverter strip to make sure you have a satisfactory electrical bond.

s 102-018

(3) Clean the surface with a rag moistened with aliphatic naphtha and let dry.

s 102-019

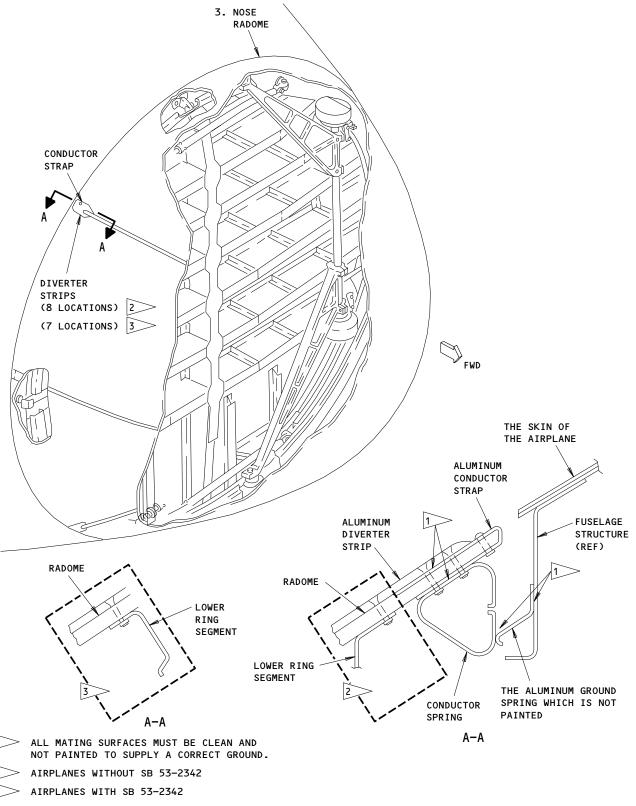
(4) Clean the radome surface around the insert hole with a rag moistened with solvent and let dry

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Lightning Diverter Strip Installation Figure 201



s 392-020

(5) Apply BMS5-95 sealant on and around the insert hole in the nose radome and the mating surface of the insert. Completely coat the honeycomb core cells with sealant (Fig. 202).

s 422-021

(6) Install the insert immediately before the sealant has a chance to set-up.

s 392-022

(7) Make sure there is squeeze out of the sealant all around the insert on both surfaces of the nose radome. The sealant squeeze out on the aerodynamic surface of the nose radome needs to be flush with the surface. This is to accommodate the fit-up of the diverter strips.

s 392-023

(8) Apply a fillet seal of BMS5-95 sealant around the flange of the diverter strip insert that is exposed to the interior side of the nose radome.

NOTE: It is important to make sure that the diverter strip attach inserts are completely sealed to prevent moisture ingress into the nose radome.

s 422-007

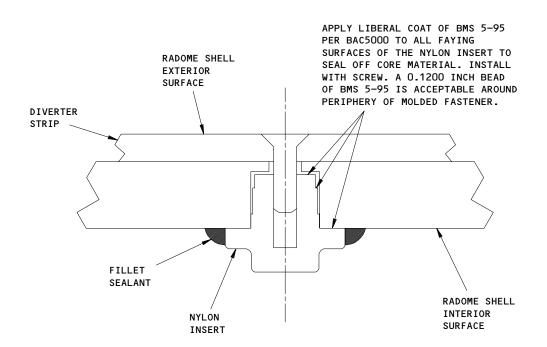
- (9) Install the lightning diverter strip (Fig. 201).
 - (a) Fill the empty spaces around the grounding plate with the sealant.
 - (b) Install the diverter strip on the radome and install the screws and the nuts (where used).
 - (c) Fill all of the empty spaces around the diverter strip fasteners with the sealant.
 - (d) Do a test of the electrical resistance (Ref Nose Radome Lightning Diverter Strips Examination).

TASK 53-52-04-702-009

- 4. Nose Radome Lightning Diverter Strips Examination
 - A. General
 - (1) This procedure gives instructions to do an electrical continuity test for all parts that are related to the lightning diverter strips. You must do this test after you install the new diverter strips or when the inspection shows deterioration. The deterioration of the lightning diverter strips can cause radio noise interference.
 - B. Standard Tools and Equipment
 - (1) Bonding meter (Ref 20-22-01/601)
 - C. References
 - (1) 20-22-01/601, Bonding Meter
 - (2) 53-52-01/201, Nose Radome

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Insert/Sealant Installation Figure 202

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D. Examine the diverter strips visually.

s 212-010

(1) Examine the diverter strips and make sure that they are correctly installed.

<u>NOTE</u>: Sharp corners or points on locations along a diverter strip will cause radio interference.

s 212-016

- (2) Make sure that there are no burns, burned areas and corrosion.
- E. Examine the electrical resistance of the diverter strips, with a bonding meter.

s 012-011

(1) Open the nose radome (Ref 53-52-01/201).

s 762-012

- (2) Make sure that the electrical resistance between each of these pairs of the components is no more than 0.01 ohm (Ref 20-22-01/601).
 - (a) The diverter strip and the conductor strap
 - (b) The conductor strap and the conductor spring
 - (c) The diverter strip and the lower ring segment.

s 412-013

(3) Close the nose radome (Ref 53-52-01/201).

s 762-014

- (4) Measure the resistance between the diverter strips and the body structure skin.
 - (a) Maximum reading should be 0.01 Ohms although in-service values up to 0.1 Ohms are common.

NOTE: Resistances above 0.01 Ohms can indicate potential corrosion build-up on faying surfaces. High readings can be reduced by cleaning those surfaces as indicated below.

1) If resistances are not met, clean faying surfaces between radome conductor spring and conductor channel with fine abrasive paper and recheck reading.

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