



A Textron Company

TECHNICAL BULLETIN

407-12-96

14 February 2012

Revision A, 22 June 2012

MODEL AFFECTED: 407

SUBJECT: AFT FUSELAGE UPPER LEFT LONGERON
ASSEMBLY P/N 206-031-314-237B,
INTRODUCTION OF.

HELICOPTERS AFFECTED: Serial number 53000 through 53900, 53911
through 54061 and 54300.

[Serial number 54062 through 54299, 54301 and
subsequent will have the intent of this bulletin
accomplished prior to delivery.]

COMPLIANCE: At customer's option.

DESCRIPTION:

-NOTE-

Compliance with this bulletin meets the intent of PART V of
[ASB 407-11-95](#).

Bell Helicopter Textron is introducing a new left upper longeron assembly P/N 206-031-314-237B to the 407 model which is not affected by the recurring inspections imposed by Alert Service Bulletin (ASB) [407-11-95](#). This bulletin provides instructions to replace the existing upper left fitting/longeron assembly using new assembly P/N 206-031-314-237B and installing three external strap doublers on left side of the aft fuselage section at FS. 217.84. Revision A corrects rivets requirements in parts list and affected figures. |

APPROVAL:

The engineering design aspects of this bulletin are Transport Canada Civil Aviation (TCCA) approved.

CONTACT INFO:

For any questions regarding this bulletin, please contact:

Bell Helicopter Product Support Engineering - Light Helicopters
Tel: 450-437-2862 / 1-800-363-8023 / pselight@bh.com

MANPOWER:

Approximately 35 man-hours are required to complete this bulletin. This estimate is based on hands-on time, and may vary with personnel and facilities available.

WARRANTY:

There is no warranty credit applicable for parts or labor associated with this bulletin.

MATERIAL:

Required Material:

The following material is required for the accomplishment of this bulletin and may be obtained through your Bell Helicopter Textron Supply Center.

The following material can be procured under Kit # CT-407-12-96

| <u>Part Number</u> | <u>Nomenclature</u> | <u>Qty</u> |
|--------------------------|--------------------------|-------------|
| 206-031-314-237B | L/H upper longeron assy. | 1 |
| 407-530-020-115 (Note 3) | Doubler | 1 (Note 2) |
| 407-530-020-117 (Note 4) | Doubler | 1 (Note 2) |
| 407-530-020-119 (Note 5) | Doubler | 1 (Note 2) |
| NAS627-30 | Bolt | 2 |
| 42FLW-720 | Nut | 2 |
| NAS626-26 | Bolt | 2 |
| 42FLW-624 | Nut | 2 |
| (MS20470AD4-3 | Rivet | 10 (Note 1) |
| MS20470AD4-3-5 | Rivet | 15 (Note 1) |
| MS20470AD4-4 | Rivet | 20 (Note 1) |
| MS20470AD4-4-5 | Rivet | 15 (Note 1) |
| MS20470AD4-5 | Rivet | 15 (Note 1) |
| MS20470AD4-5-5 | Rivet | 10 (Note 1) |
| MS20470AD4-6 | Rivet | 20 (Note 1) |
| MS20470AD5-4 | Rivet | 10 (Note 1) |
| MS20470AD5-4-5 | Rivet | 15 (Note 1) |
| MS20470AD5-5 | Rivet | 10 (Note 1) |
| MS20470AD5-5-5 | Rivet | 5 (Note 1) |
| MS20470AD5-6 | Rivet | 5 (Note 1) |
| MS20615-4MP4R | Rivet | 10 (Note 1) |
| MS20426AD4-3-5 | Rivet | 10 (Note 1) |

| | | |
|------------------|--------|-------------|
| MS20426AD4-4 | Rivet | 10 (Note 1) |
| MS20426AD4-4-5 | Rivet | 10 (Note 1) |
| MS20426AD4-5 | Rivet | 10 (Note 1) |
| 100-145-6—6 | Pin | 2 |
| 100-145-6-7 | Pin | 2 |
| 30-277-6 | Collar | 4 |
| NAS1149E0332R | Washer | 4 |
| NAS9307M-4-02 | Rivet | 15 (Note 1) |
| NAS9307M-4-03 | Rivet | 25 (Note 1) |
| NAS9307M-4-04 | Rivet | 15 (Note 1) |
| NAS9307M-4-05 | Rivet | 15 (Note 1) |
| NAS9307M-4-06 | Rivet | 10 (Note 1) |
| NAS9307M-5-02 | Rivet | 10 (Note 1) |
| NAS9307M-5-03 | Rivet | 10 (Note 1) |
| NAS9307M-5-04 | Rivet | 25 (Note 1) |
| NAS9307M-5-05 | Rivet | 20 |
| NAS9307M-5-06 | Rivet | 10 (Note 1) |
| NAS9307M-5-07 | Rivet | 10 (Note 1) |
| NAS9301B-4-02 | Rivet | 15 (Note 1) |
| NAS9311M-4-02 | Rivet | 15 (Note 1) |
| NAS9309M-4-03 | Rivet | 20 (Note 1) |
| NAS9309M-4-04 | Rivet | 10 (Note 1) |
| NAS9309M-4-05 | Rivet | 10 (Note 1) |
| NAS9309M-4-06 | Rivet | 10 (Note 1) |
| NAS9309M-4-07 | Rivet | 10 (Note 1) |
| NAS9309M-5-04 | Rivet | 10 (Note 1) |
| NAS9309M-5-05 | Rivet | 10 (Note 1) |
| NAS9309M-5-06 | Rivet | 10 (Note 1) |
| NAS9309M-5-07 | Rivet | 5 (Note 1) |
| 206-032-307-023S | Clip | 1 |
| 206-032-307-025 | Clip | 1 |
| MS20615-4MP5R | Rivet | 10 (Note 1) |
| MS20615-4MP5 | Rivet | 10 (Note 1) |
| MS20615-4MP4R | Rivet | 10 (Note 1) |

Notes

1. Length of rivets may vary from one aircraft to another. The correct length of rivets must be determined at installation.
2. Doublers may not be required if already installed per instructions of [ASB 407-11-95](#).
3. Doubler 407-030-700-191 may be used as an alternate.
4. Doubler 407-030-700-193 may be used as an alternate.
5. Doubler 407-030-700-195 may be used as an alternate.

Consumable Material:

The following material is required to accomplish this bulletin, but may not require ordering, depending on the operator's consumable material stock levels. This material may be obtained through your Bell Helicopter Textron Supply Center.

| <u>Part Number</u> | <u>Nomenclature</u> | <u>Qty</u> | <u>Reference *</u> |
|-----------------------|---|------------|-----------------------|
| MIL-PRF-81733 TYII | Sealant | 1 | C-251 |
| TT-N-95, TYII 1GAL | Aliphatic Naphtha | 1 | C-305 |
| TT-I735 ISOPROPYL | Isopropyl Alcohol (Note 1) | 1 | C-385 |
| MIL-P-85582, TY1, CL2 | Primer | 1 | C-204 |
| MIL-C-81706 1 QT | Chem. film. Alodine 1200 | 1 | C-100 |
| QQ-A-250/12 T6 .032 | Al Alloy flat stock, 0.032 inch (0.813 mm) thick | A/R | (Note 2) |

* C-XXX numbers refer to the consumables list in [BHT-ALL-SPM](#) Standard Practices Manual

Notes:

1. Toluene ([C-306](#)) or Ethyl Alcohol ([C-339](#)) can be used as substitute.
2. Obtain commercially. Can also be procured direct from BHT spares using part number shown.

SPECIAL TOOLS:

Tailboom attachment drill plate (See Figure 4).
Drill bushings.

WEIGHT AND BALANCE:

Not affected.

REFERENCES:

[BHT-407-IPB](#) Illustrated Parts Breakdown
[BHT-407-MM](#) Maintenance Manual
[BHT-206-SRM-1](#) Structural Repair Manual
[BHT-ALL-SRM](#) Structural Repair Manual
 Alert Service Bulletin [407-10-93](#), Tailboom attachment hardware, Replacement of.
 Alert Service Bulletin [407-11-95](#), Revision A, Upper left longeron (channel) 206-031-314-037, /177 and spare assembly 206-031-314-219B, Inspection of.
 General [Information Letter GEN-04-99](#), Superseded rivets.
 Installation Instruction [BHT-407-II-33](#), Oil cooler support kit.

PUBLICATIONS AFFECTED:

[BHT-407-MM](#) Maintenance Manual
[BHT-407-IPB](#) Illustrated Parts Breakdown

ACCOMPLISHMENT INSTRUCTIONS:

-NOTE-

If the replacement of existing longeron assembly is associated with incident/accident damage, the longeron shall be replaced with the aircraft installed in a BHT-Approved fuselage fixture holding a valid and current BHT certification tag.

-NOTE-

The following procedure provides instruction to replace the longeron/fitting assembly without removing the left side fuselage skin panel.

1. Prepare helicopter for maintenance.
2. Disconnect the battery.
3. Refer to your Maintenance Manual and get access to the aft upper left longeron assembly by removing the following items:
 - a. Upper engine cowling and side doors assembly.
 - b. Oil cooler blower fairing.
 - c. Engine.
 - d. Engine oil reservoir.
 - e. Segmented short shaft assembly.
 - f. Oil cooler and blower assemblies.
 - g. Tailboom access cover.
 - h. Tailboom assembly. (Ref. [ASB 407-10-93](#)).
 - i. Remove any ducts, doors, or equipment in the aft cabin closure.
 - j. Remove baggage compartment door and aft baggage compartment liner.
 - k. Stabilize the fuselage with jacks.
 - l. Protect or remove any electrical, electronic, air conditioning and heating equipment that may be mounted on canted web.
4. Remove the air dam cover (2, Figure 1) (Ref. [BHT-407-MM-5, Chapter 53](#)).
5. If not already done, remove all traces of sealant covering the longeron (3, Figure 1) on either side of the frame (4) at station 217.84. Clean sealant using a plastic scraper.

-NOTE-

Rivets layout for left and right oil cooler fairing retainers is identical.

6. Remove all fasteners securing the left and right oil cooler fairing retainers (1, 2, Figure 2). Break sealant between faying surfaces using a thin blade warm putty knife. Remove the retainers (1, 2).

-NOTE-

Additional access to the upper left longeron assembly can be done by removing the aft fuselage top skin (1, Figure 6)

7. Remove the aft fuselage top skin (1, Figure 6)
8. Remove fasteners securing the round aft fuselage bulkhead (3, Figure 3) located at fuselage station 231.472.
9. Manufacture locally or get a similar drill plate shown in Figure 4.

-NOTE-

Four spacers (7, Figure 5) of equivalent thickness (+/- 0.001 inch) may be required between each tailboom attachment fitting (2, 3, 4 and 5) and the drill plate (8) to prevent interference with the fuselage skins.

10. Verify that the fuselage-to-tailboom four attachment bolts hole pattern in aft fuselage match with the drill plate as follows;
 - a. Position and align the drill plate (8, Figure 5) (and the four spacers (7) if used) against the four longeron assemblies (2, 3, 4 and 5) using all four attachment bolts. Do not install the bulkhead (6) between the longeron assemblies (2, 3, 4 and 5) and the drill plate (8) as seen at this time.
 - b. Verify that each attachment hole in each of the fitting of each longeron assemblies (2, 3, 4 and 5) matches the hole in the drill plate (8).
 - c. The bolt at each position should move freely without any binding or interference while the other 3 are still installed in the adjacent longeron assemblies.
 - d. If interference exists at any of the four longerons assemblies (2, 3, 4 or 5), contact Product Support Engineering for assistance.

- e. If each hole in the aft fuselage-to-tailboom attachment fitting matches the drill plate (8) without any interference, remove the drill plate (8).

-NOTE-

It is not necessary to disassemble the left fuselage-to-tailboom attachment fitting from the main channel and the inboard angle. The new longeron channel, angle, clips and fitting procured under assembly P/N 206-031-314-237B will replace existing parts as a unit.

11. Remove all fasteners securing the aft fuselage top skin (1, Figure 6) to the aft fuselage. Break sealant between faying surfaces using a thin blade warm putty knife. Remove the top skin.
12. Drill all remaining rivets securing the longeron assembly (1, Figure 7) to the aft fuselage. Remove existing splices joining bulkhead sections as required and retain for reinstallation later.
13. Use a thin blade warm putty knife to break sealant between the upper flange of the longeron assembly (1) and between each bulkhead interface. Remove longeron assembly (1) from aft fuselage assembly by gently sliding (pulling) out of position toward the aft of the aircraft.

-NOTE-

Do not remove the Hi-Lock fasteners (QTY 15) on new longeron P/N 206-031-314-237B. These fasteners are installed in cold worked holes.

14. Clean any cured sealant from aft fuselage faying surfaces for installation of the new longeron P/N 206-031-314-237B.
15. Carry out a first fit check of the new replacement longeron assembly (1) in place in the aft fuselage. Make sure a 2D minimum edge distance exists at all places. If the positions of the upcoming fasteners in the longeron assembly (1) are all acceptable at all locations, keep the longeron assembly (1) in place in aft fuselage.

-NOTE-

Four spacers (7, Figure 5) of equivalent thickness (+/- 0.001 inch) may be required between each tailboom attachment fitting (2, 3, 4 and 5) and the drill plate (8) to prevent interference with the fuselage skins.

16. Temporarily secure the drill plate (8, Figure 5) to the right longeron assembly (4) and both lower longeron assemblies (3, 5) using existing bolts, washers, and nuts. Do not install the bulkhead (6) at this time. Torque each nut to 50 inch-pounds.

-NOTE-

It is acceptable to hold the longeron (2) against the drill plate (8) using a C-clamp until it is completely riveted to the fuselage structure.

17. Secure the new left upper longeron assembly (2) to the drill plate (8) using a 3/16" diameter bolt, washer and a nut through existing pilot hole already drilled in the stainless steel fitting of the new longeron assembly (2). Torque nut to 50 inch-pounds. Verify that no gap exists between longeron assembly (2) and the drill plate (8) and/or the spacer (7).
18. Position the forward portion of the longeron (1, Figure 7) tight against the lower surface of the oil cooler blower support panel (21). Temporarily clamp the new longeron assembly (1) to the forward longeron assembly (13). Mark all rivet holes using a felt pen, including the lower splice (14) at fuselage station 192.00 as shown in View I.
19. Remove the longeron assembly (1) from the fuselage and inspect each hole for proper edge distance (minimum edge distance of 2D) at all rivets location. If all fasteners holes are acceptable, re-install the longeron assembly (1) in place and repeat steps 16 through 18.
20. Verify and record gaps at areas forward and aft of the bulkhead at station 217.84 as shown in Figure 8. Verification must be done over 4 rivets minimum each side of the bulkhead;
 - a. Gap(s) should not exceed 0.032 inch (0.813 mm) thick.
 - b. Prepare applicable flat or tapered shim(s) taking into account of the aft fuselage skin (1, Figure 6) not being present if removed.
 - c. Minimum thickness of a tapered shim could not be less than 0.005 inch (0.127 mm) thick.
 - d. Secure shim(s) in place between skin panel (16, Figure 7) and upper flange of longeron (1) before drilling affecting holes.
21. Transfer all fasteners holes while installing clecos after each drilling operation.

22. Remove all clecos, the drill plate (8, Figure 5), the longeron (2) and if needed, the shims from the aft fuselage structure. Deburr all rivets holes and clean with Isopropyl Alcohol (C-395).

-NOTE-

It is acceptable to re-install the existing sheet metal aft bulkhead (6). However it is recommended to install the new improved machined aft bulkhead per TB 407-07-78. If new machined bulkhead is installed on ship S/N 53000 through 53714, a quantity of 16 holes for rivets on left side of bulkhead will have to be increased to next available diameter.

23. Apply a coat of sealant (C-251) to faying surfaces of longeron assembly (2), aft fuselage bulkhead (6), the splices joining affected bulkhead sections and if needed the shims made in Step 20 before installing in place with drill plate (8). Secure longeron assembly (2) and bulkhead (6) with applicable rivets wet with sealant (C-251). Do not install rivets common to oil cooler fairing retainers (1, 2, Figure 2), the side skin panel (16, Figure 7) and the top skin (1, Figure 6) at this time, but secure any applicable shims made earlier with clecos.
24. Re-install the aft fuselage top skin (1) if removed earlier using rivets wet with sealant (C-251) as identified in Figure 6. Ensure any shim made in step 20 will be located between the top flange of longeron (1, Figure 3) and underside of aft fuselage skin (6). Do not install the rivets at this time at the location where the three external strap doublers (4, 5 and 6, Figure 9) already exist (ref. ASB 407-11-95), or are to be installed.
25. Coat mating surface of both left and right oil cooler fairing retainers (1 and 2, Figure 2) with sealant (C-251) before installing back in place with rivets wet with sealant (C-251). Rivets layout is identical for both retainers (1 and 2).

-NOTE-

L/H upper fitting is made of CRES material and is difficult to drill. Low speed drilling is required to avoid overheating material. Drill by increasing size of drill bit in sequence until final reamed dimension can be achieved. Drilling by step increments will require a variety of bushing sizes that are not listed in this bulletin; it is the responsibility of the operator to use proper tooling.

26. Remove 3/16" diameter bolt washers and nut (or C-clamp if used), from upper L/H longeron assembly (1, Figure 7) and use appropriate drill bushings as required to

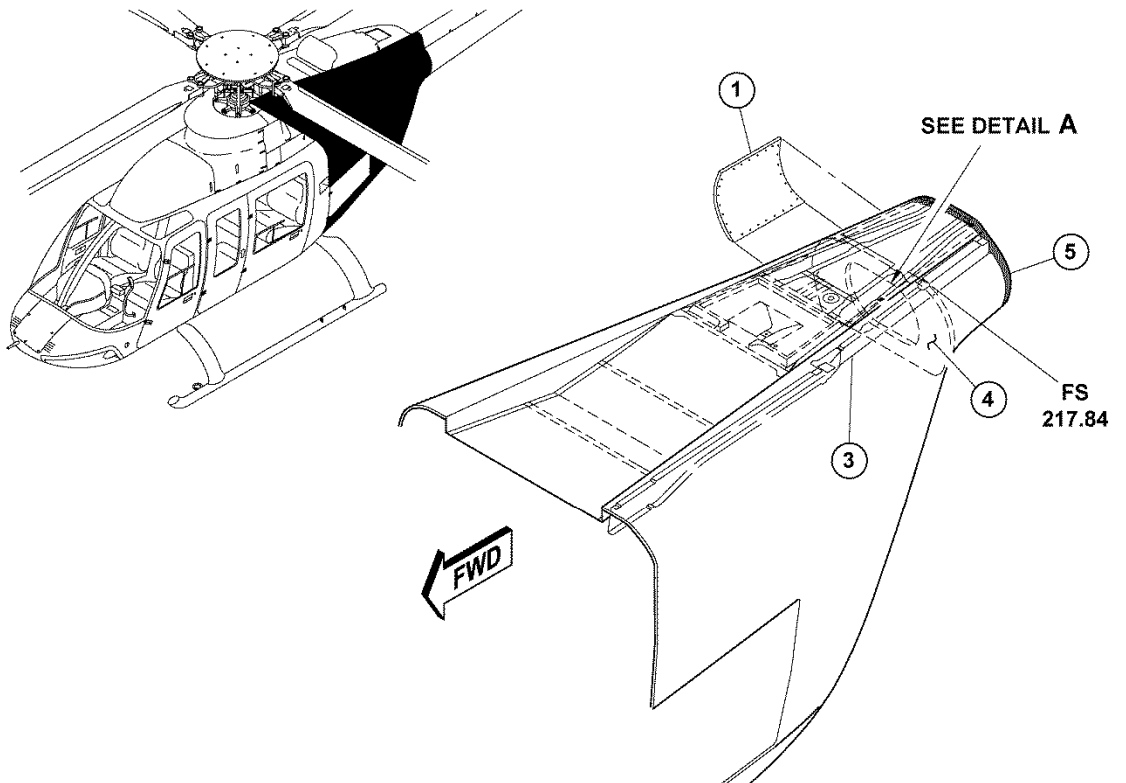
increase size between 0.4385 inch to 0.4405 inch (11.13 mm to 11.18 mm) through longeron fitting assembly (2, Figure 10) and radius block (4).

27. Remove drill plate (8, Figure 5) from aft fuselage.
28. Do a back spotface to the radius block (4, Figure 10) to 0.875 inch (19.05 mm) diameter and deep enough to have a constant flat surface as shown. The spotface shall not exceed 0.040 inch (1.01 mm) deep.
29. Deburr and clean the hole and the spotface in the fitting assembly (2) of the upper left longeron assembly (1).
30. Apply Alodine (C-100) and primer (C-204) to bare metal surfaces and to the reworked surface of fitting assembly (2) and the radius block (4).
31. Re-apply sealant (C-251) to edge of upper skin (15, Figure 7) and side skins (16 and 23).

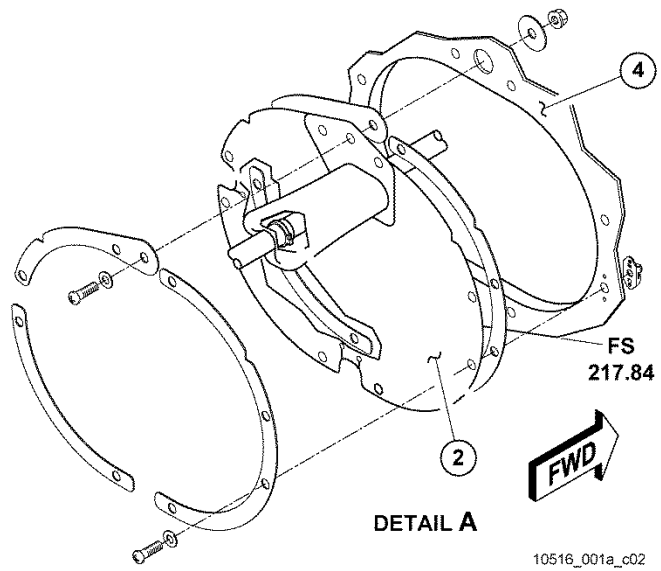
-NOTE-

External strap doublers (4, 5 and 6, Figure 9) could have been installed on the fuselage per instructions found in [ASB 407-11-95](#).

32. Remove any clecos holding the shims made in step 20, if present, and install the three external strap doublers (4, 5 and 6, Figure 9), as per instructions found in Part III of [ASB 407-11-95](#), Revision A or later.
33. Coat all tips of new rivets in interior side of the fuselage with sealant (C-251) as shown in Figure 11, View A.
34. Refinish internal and external surfaces with primer (C-204) and paint as required.
35. Remove protective cover from equipment on canted web as installed earlier in step 3.
36. Re-install all items that were removed earlier in step 3.
37. Install new hardware to retain the tailboom to aircraft fuselage (Ref. [ASB 407-10-93](#))
38. Make an entry in helicopter historical service records indicating compliance with this Technical Bulletin.

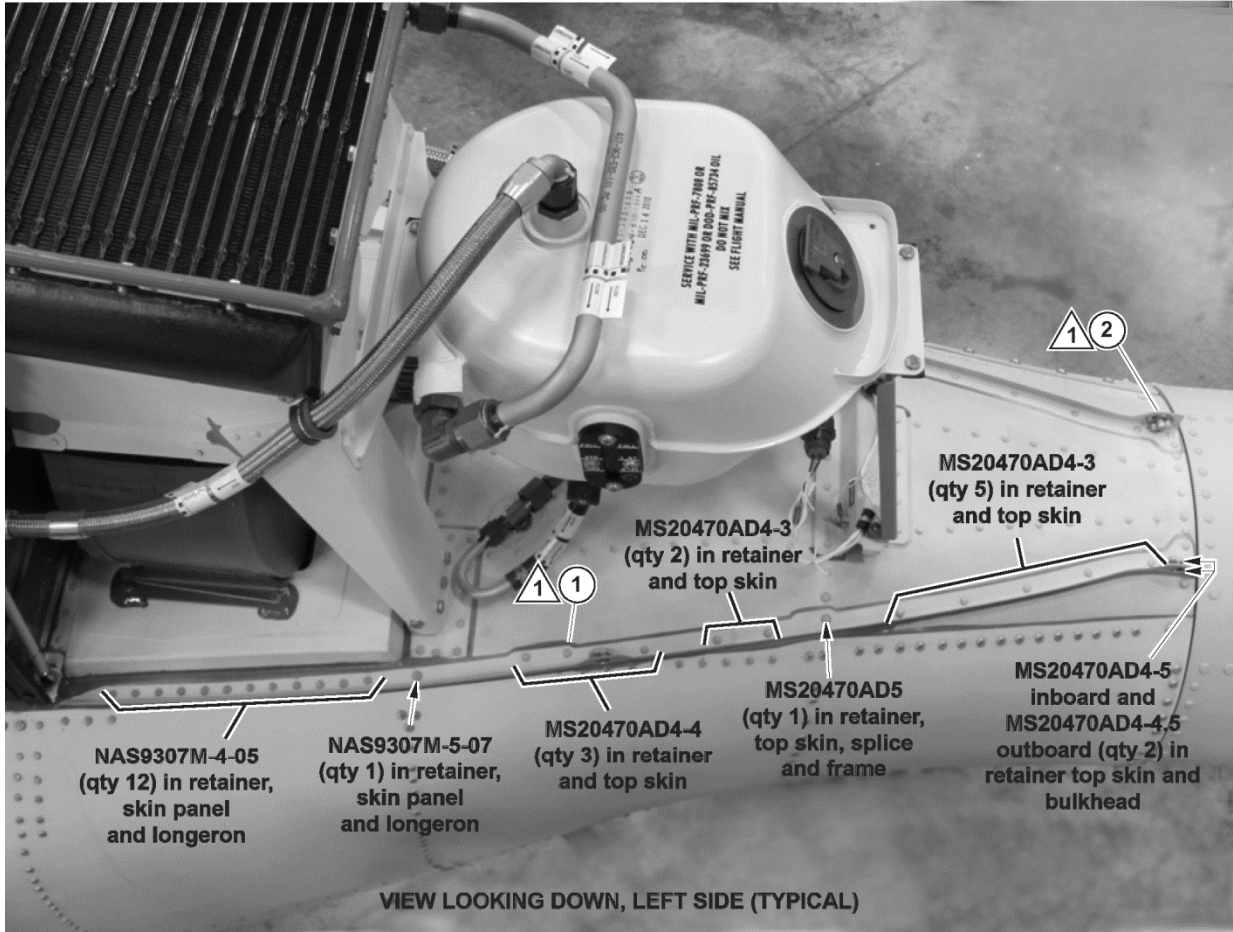


- 1. Tailboom access panel (Ref)
- 2. Air dam cover (Ref)
- 3. Longeron upper left (aft) (Ref)
- 4. Frame STA 217.8
- 5. Aft fuselage bulkhead



10516_001a_c02

Figure 1- Preparation For Replacement of Left Upper Longeron



1. Oil cooler fairing retainer, left side (Ref.)
2. Oil cooler fairing retainer, right side (Ref.)

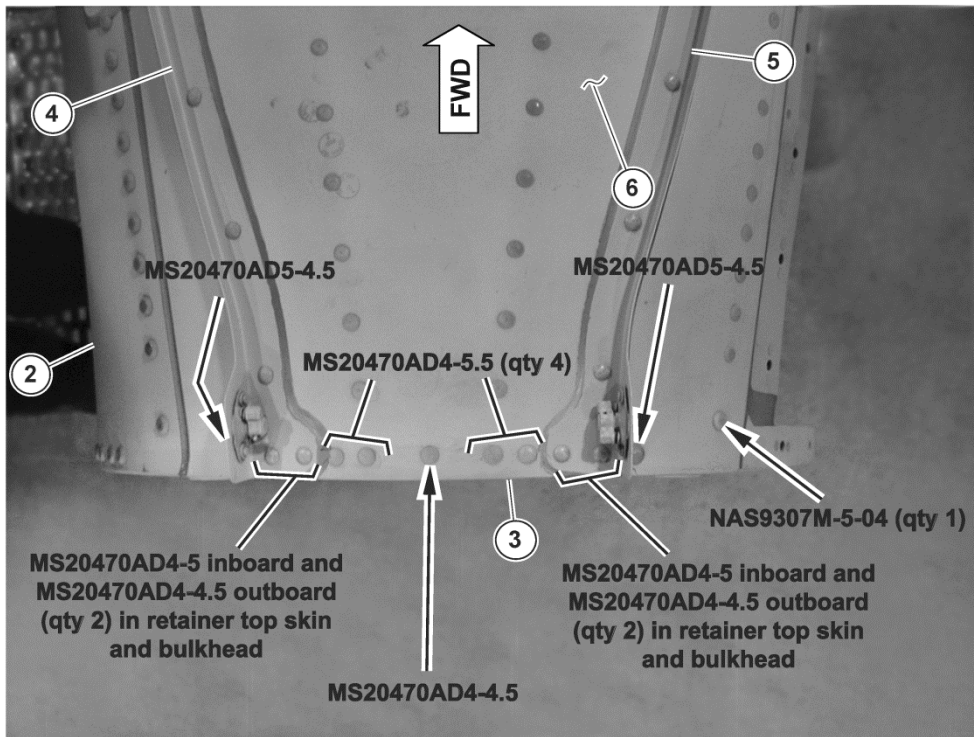
NOTES

1. Rivets layout is identical for both retainers (1 and 2).
2. Fasteners grip length may vary from those indicated.
3. Install all fasteners wet with sealant (C-251).

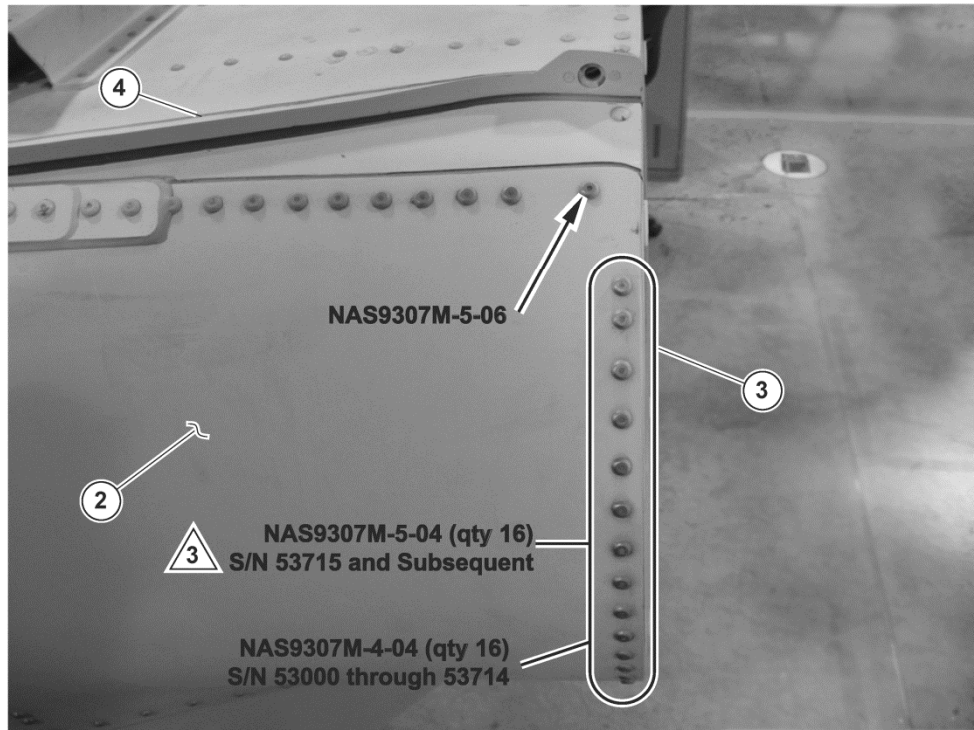
11549-001

VIEW LOOKING DOWN, LEFT SIDE (Typical)

Figure 2- Removal/Installation of Oil Cooler Fairing Left Retainers



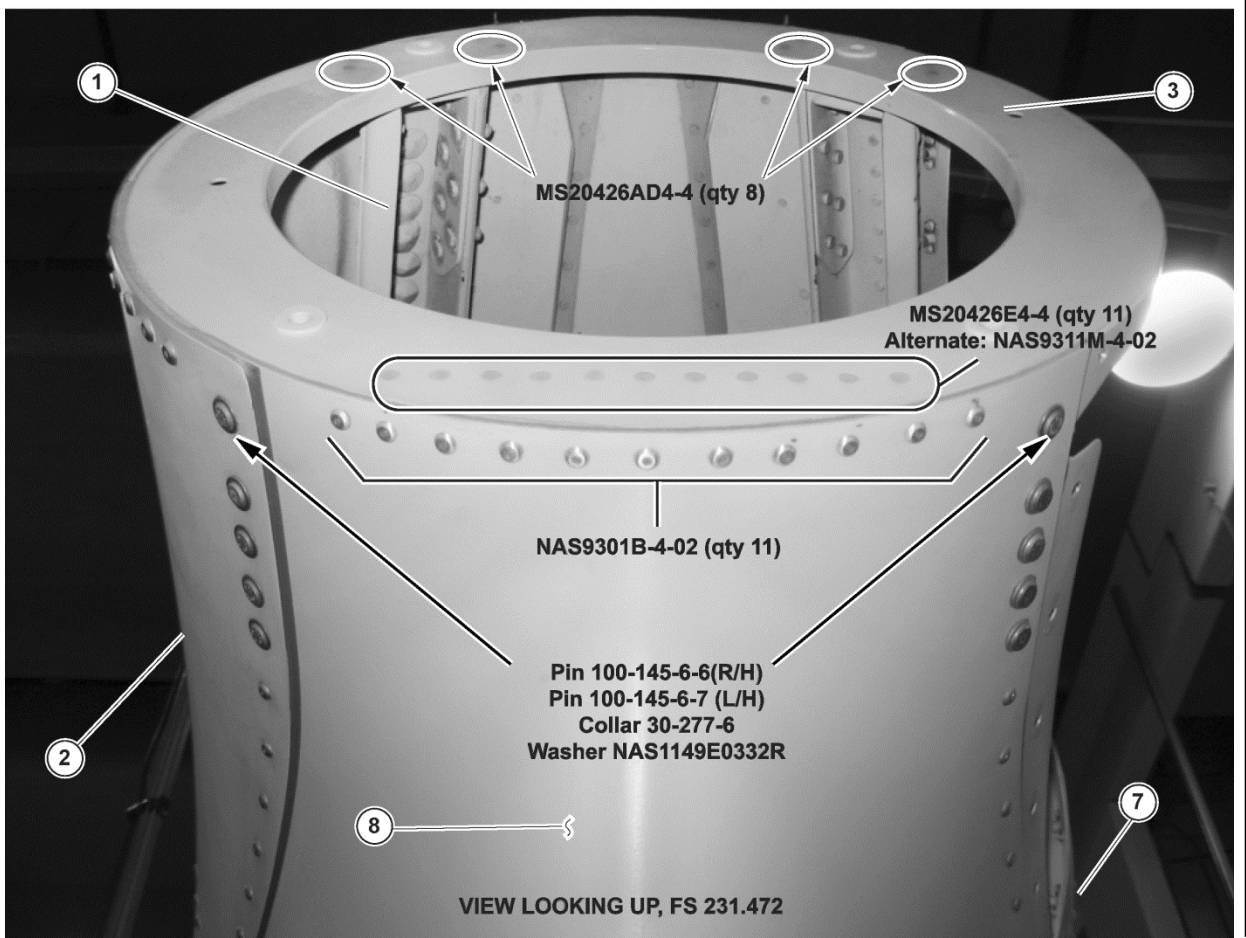
VIEW LOOKING DOWN, FS 231.472



VIEW LOOKING INBOARD, FS 231.472

11549_002a/b

Figure 3- Removal/Installation of Bulkhead (FS 231.472) (Sheet 1 of 2)



11549_002c_c01

- | | |
|--|---------------------------------|
| 1. Upper left longeron assembly (Ref.) | 5. Right retainer (Ref.) |
| 2. Left skin panel (Ref.) | 6. Aft fuselage top skin (Ref.) |
| 3. Aft fuselage bulkhead (FS 231.472) (Ref.) | 7. Right skin panel (Ref.) |
| 4. Left retainer (Ref.) | 8. Lower fairing (Ref.) |

NOTES


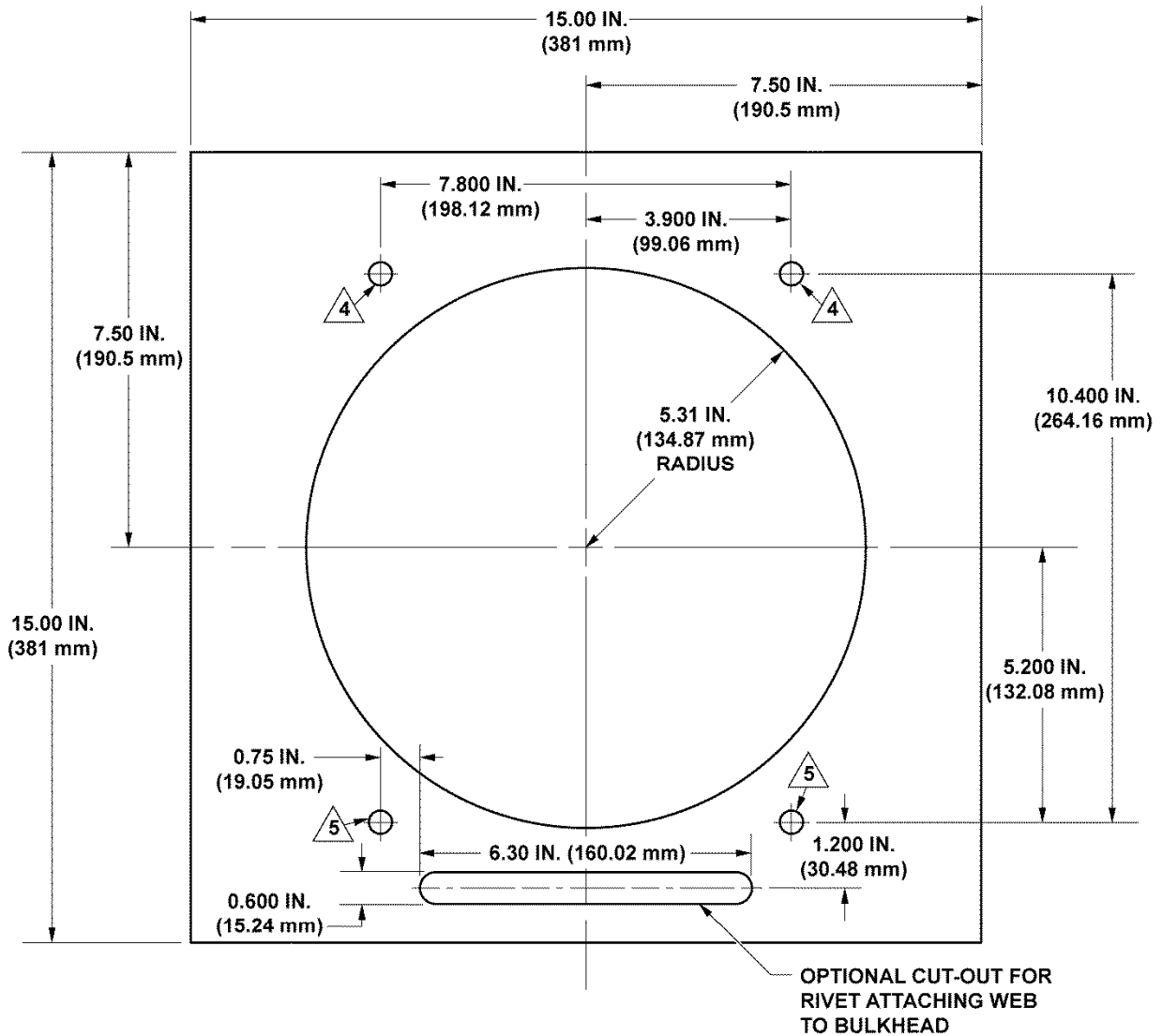
1. Fasteners grip length may vary from those indicated.
2. Install all fasteners wet with sealant (C-251).
3.  Applicable when new machined bulkhead was installed per TB 407-07-78 on helicopter S/N 53000 through 53714.

Figure 3- Removal/Installation of Bulkhead (FS 231.472) (Sheet 2 of 2)

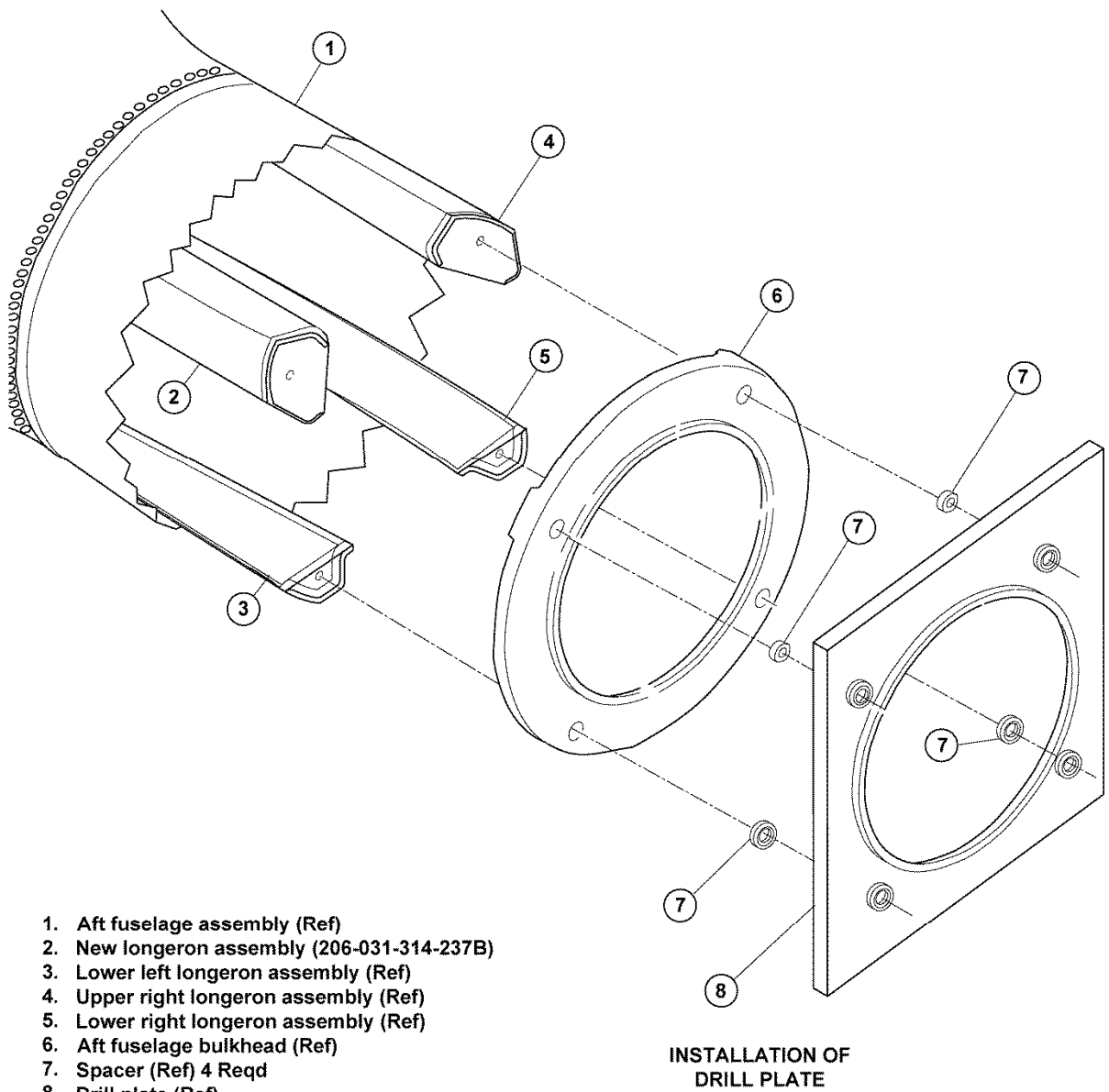


NOTES

1. Make from 0.50 Aluminum plate-surface flat within ± 0.001 inch (0.0254 mm).
 2. Install drill bushings in four holes for extended plate life.
 3. Tolerance (in inches) .XXX = ± 0.003 , .XX = ± 0.01 , except as noted.
- ④ Drill and ream perpendicular to surface 0.4385 to 0.4405 inch (11.138 to 11.189 mm).
- ⑤ Drill and ream perpendicular to surface 0.3760 to 0.3780 inch (9.550 to 9.601 mm).

06557_008

Figure 4- Drill Plate, Details of



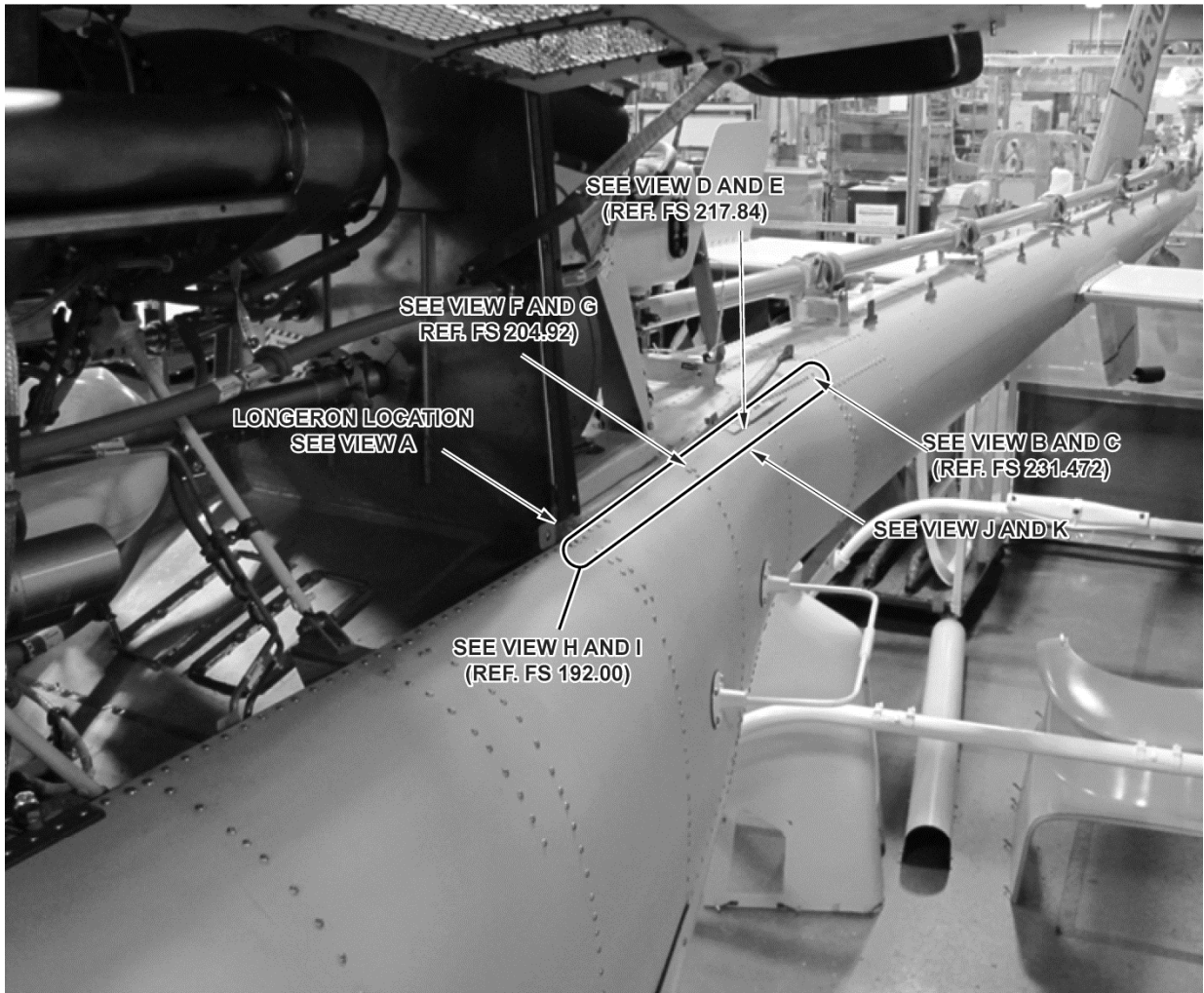
1. Aft fuselage assembly (Ref)
2. New longeron assembly (206-031-314-237B)
3. Lower left longeron assembly (Ref)
4. Upper right longeron assembly (Ref)
5. Lower right longeron assembly (Ref)
6. Aft fuselage bulkhead (Ref)
7. Spacer (Ref) 4 Req'd
8. Drill plate (Ref)

NOTE

A quantity of four spacers of same thickness within 0.001 inch (.025 mm) must be used to clear interference between drill plate and aft fuselage skins. Verify that there is no gap between longeron and aft fuselage bulkhead.

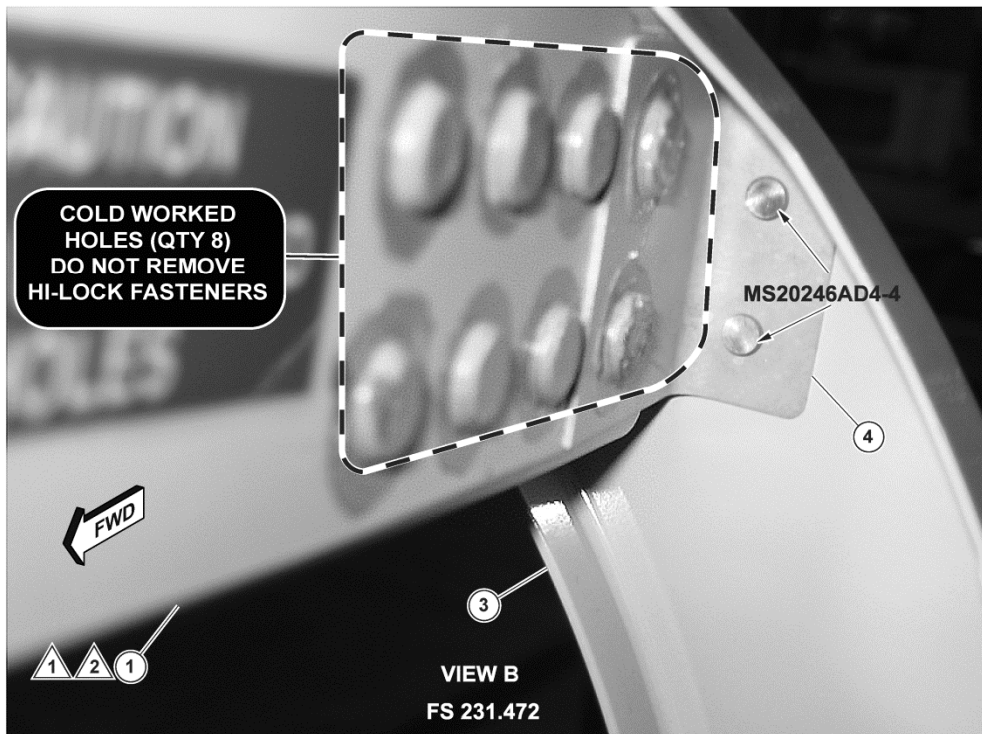
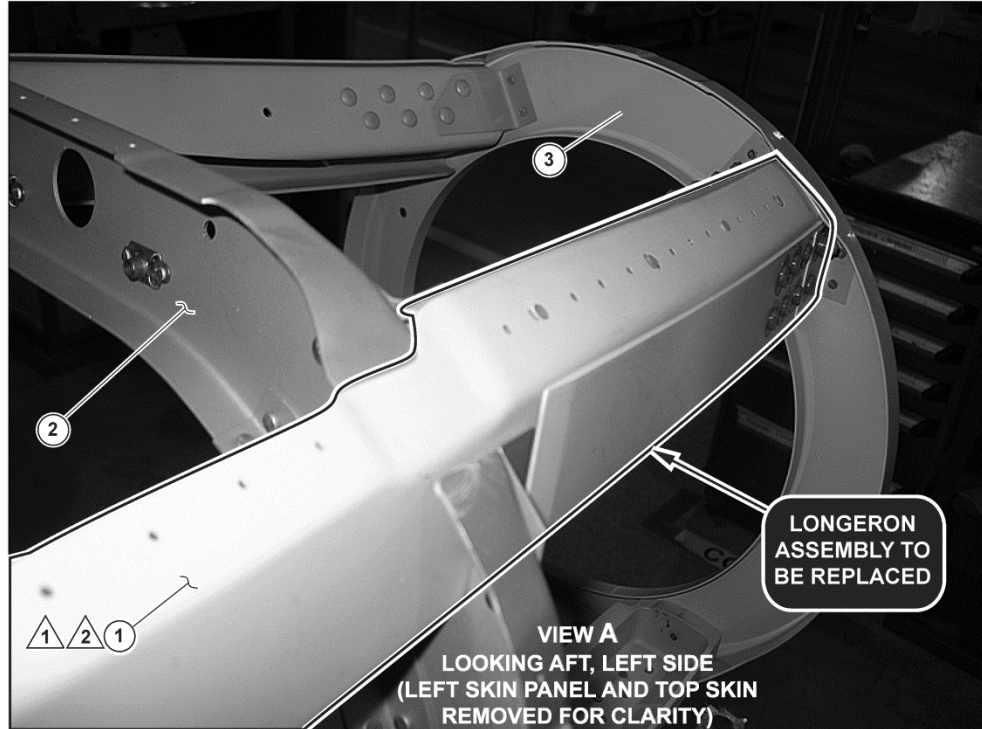
11549_008

Figure 5- Installation of Drill Plate on Aft Fuselage



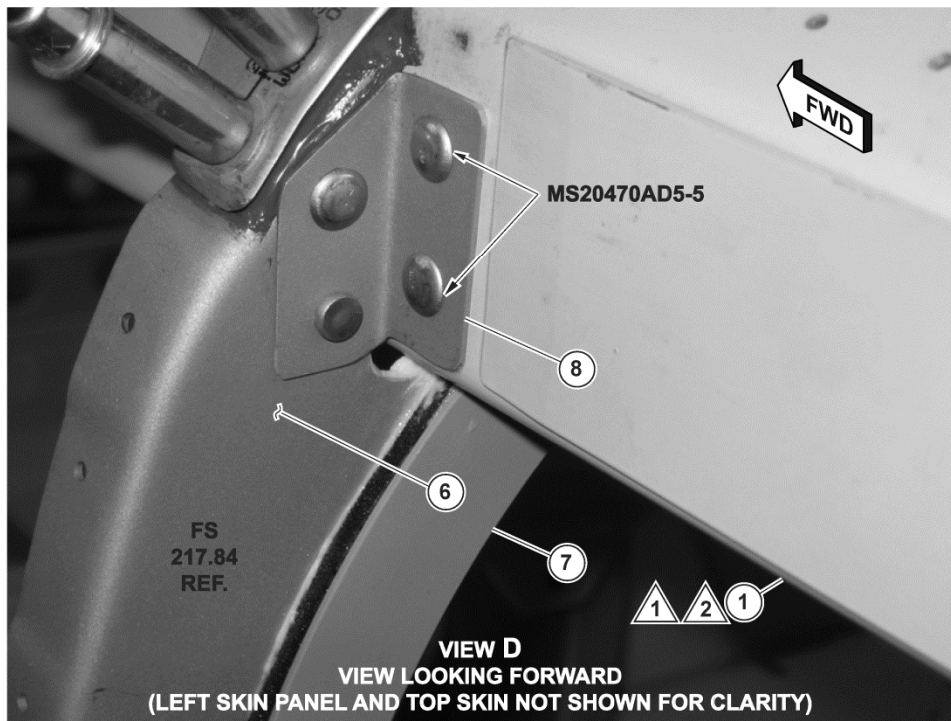
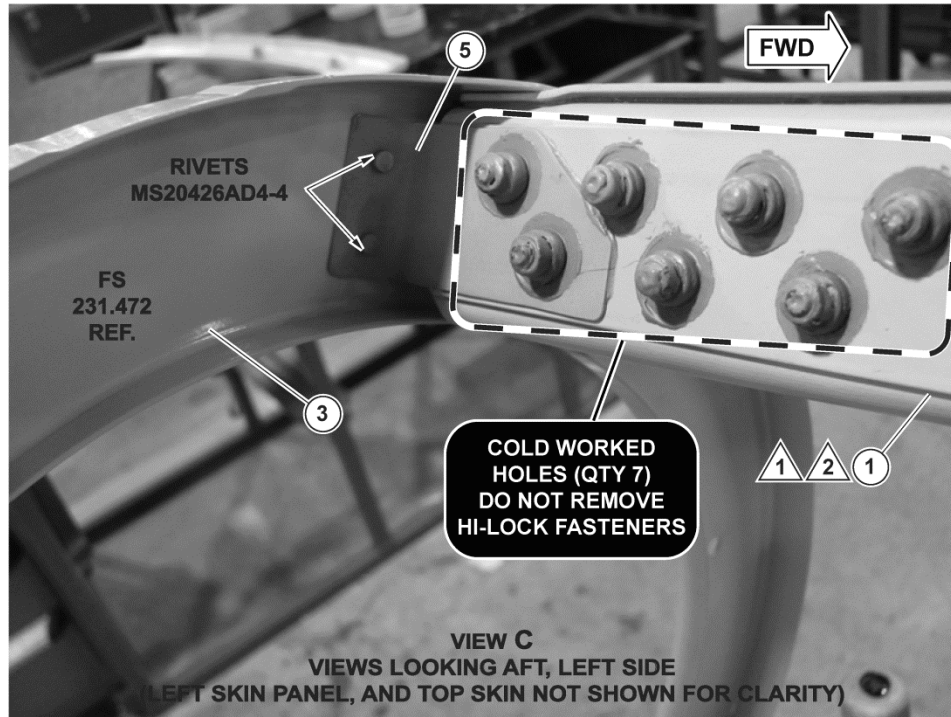
11549_004a

Figure 7- Removal/Installation of Left Upper Longeron (Sheet 1 of 8)



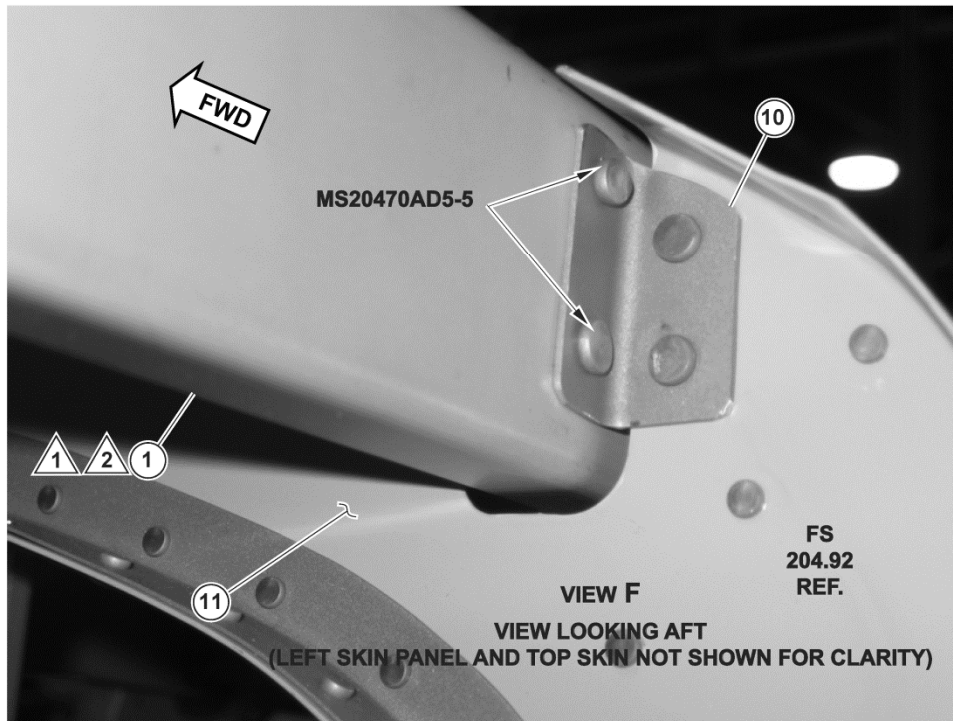
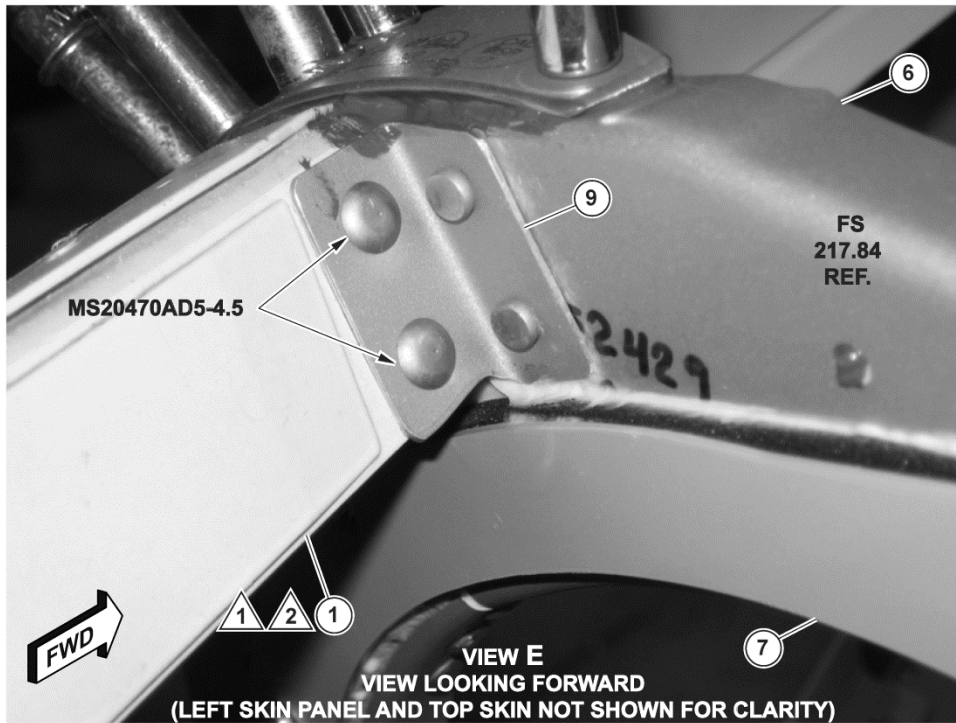
11549_004b_c

Figure 7- Removal/Installation of Left Upper Longeron (Sheet 2 of 8)



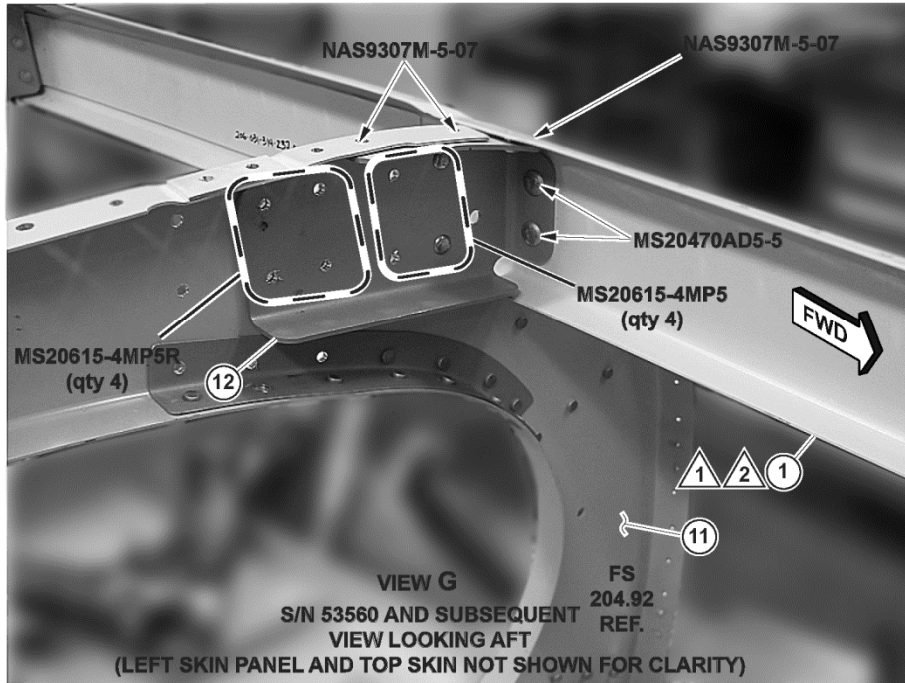
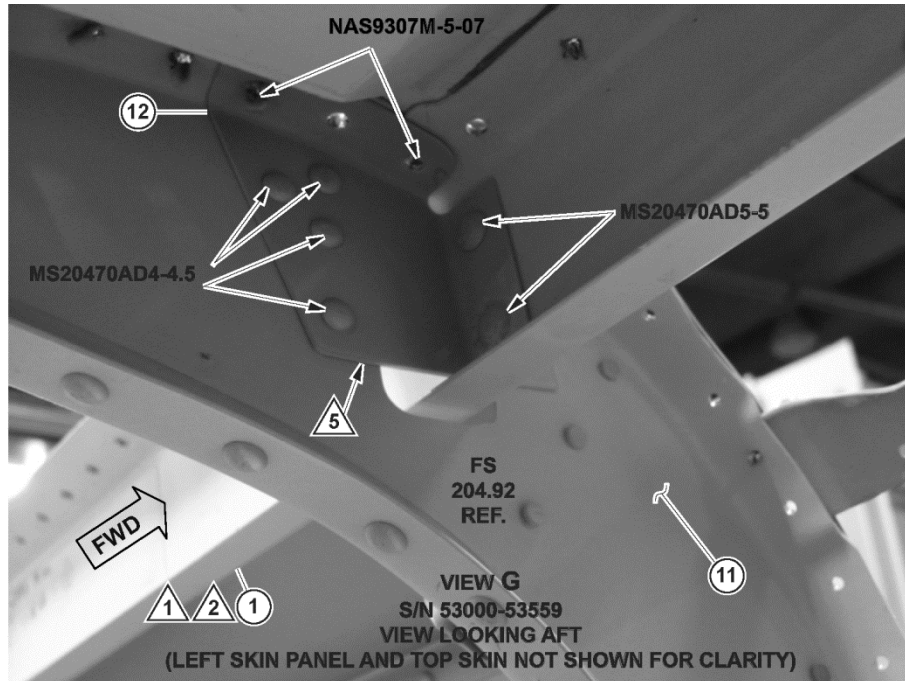
11549_004d_e

Figure 7- Removal/Installation of Left Upper Longeron (Sheet 3 of 8)



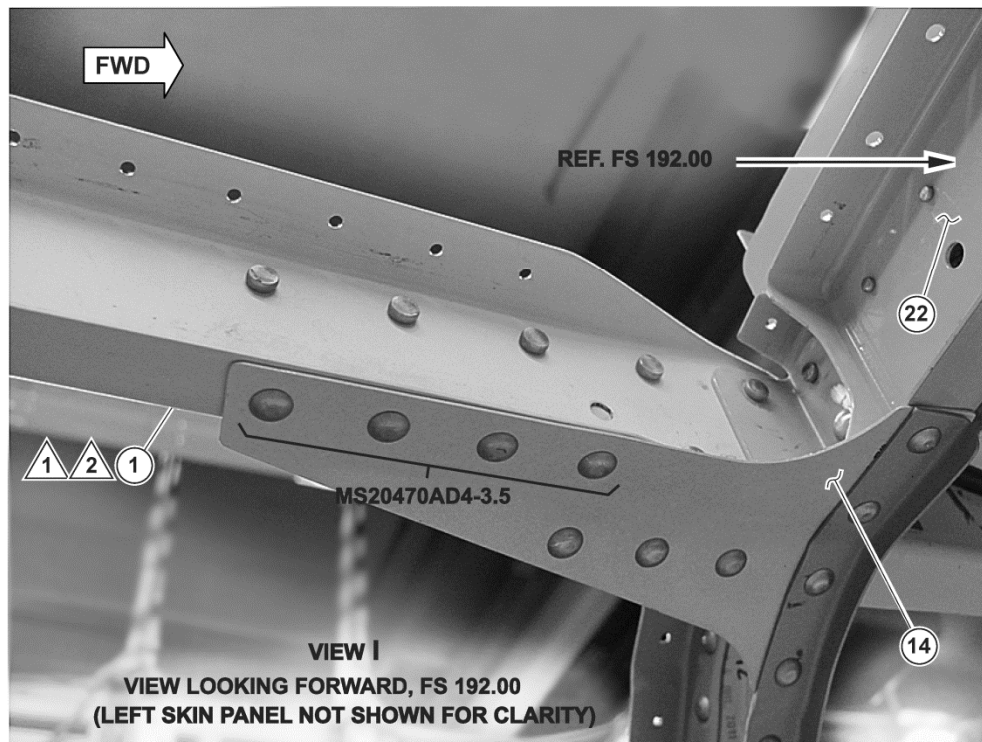
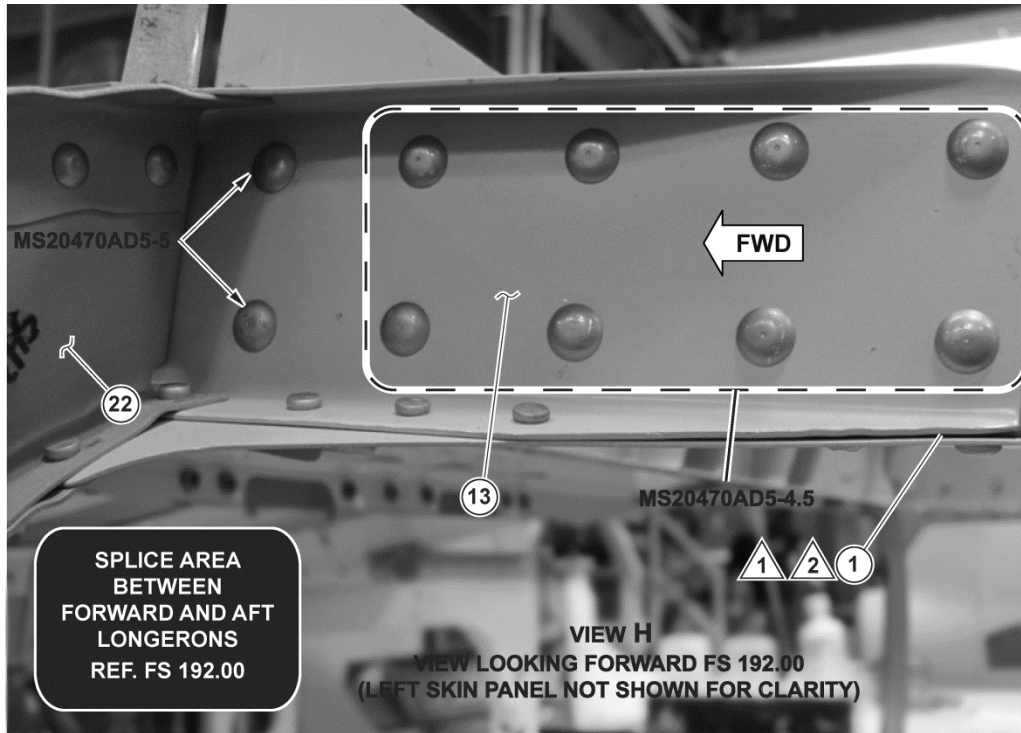
11549_004f_g

Figure 7- Removal/Installation of Left Upper Longeron (Sheet 4 of 8)



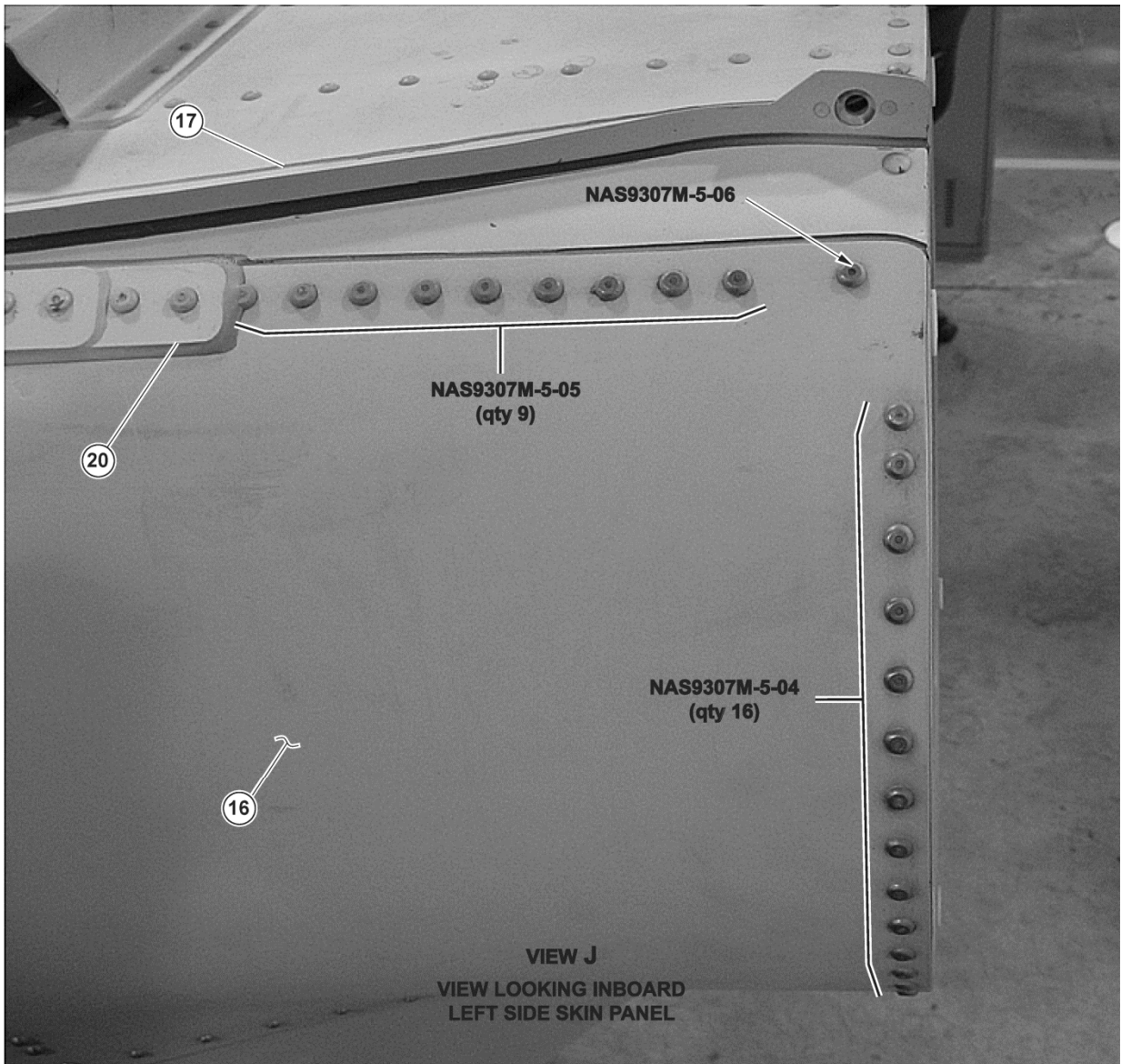
11549_004h_i

Figure 7- Removal/Installation of Left Upper Longeron (Sheet 5 of 8)



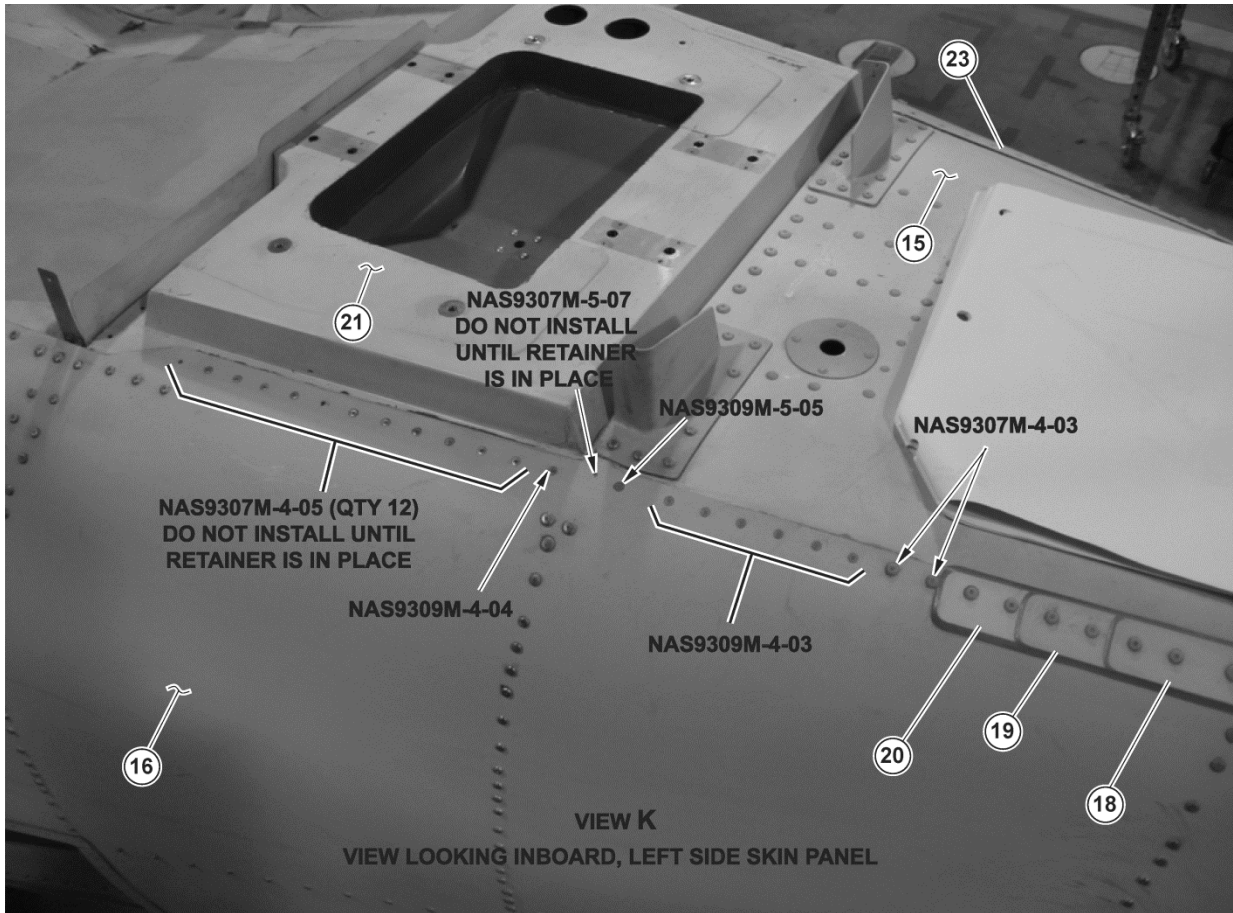
11549_004J_k

Figure 7- Removal/Installation of Left Upper Longeron (Sheet 6 of 8)



11549_004L

Figure 7- Removal/Installation of Left Upper Longeron (Sheet 7 of 8)

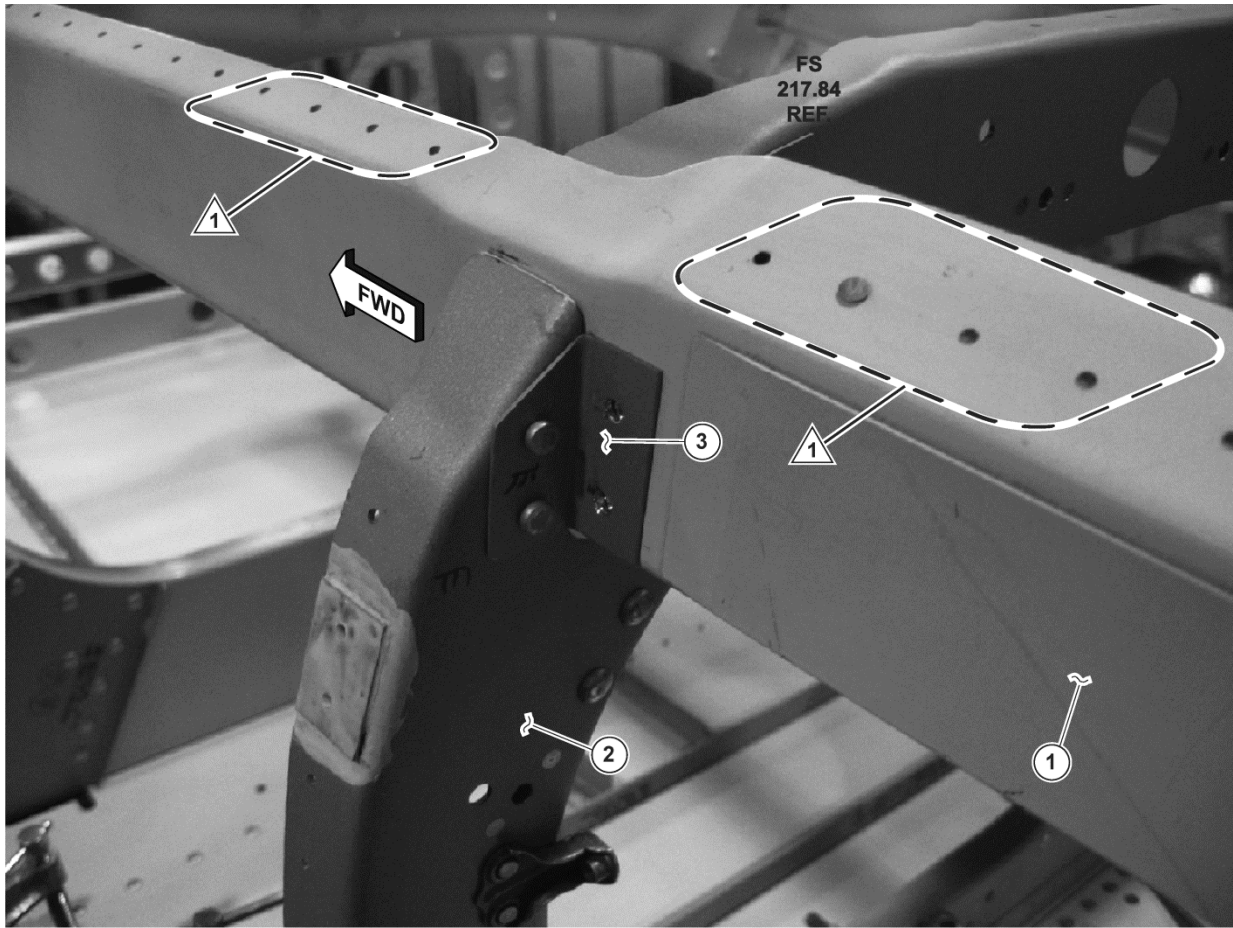


- | | | |
|--|---|------------|
| 1. Longeron / fitting assembly (Ref.) | 13. Forward longeron (Channel) (Ref.) | 11549_004m |
| 2. Frame (FS 217.84) (Ref.) | 14. Lower splice doubler (FS 192.00) (Ref.) | |
| 3. Aft fuselage bulkhead (Ref.) | 15. Aft fuselage top skin | |
| 4. Outboard clip (FS 231.472) (Ref.) | 16. Left fuselage skin panel (Ref.) | |
| 5. Inboard clip (FS 231.472) (Ref.) | 17. Oil cooler fairing retainer | |
| 6. Frame (FS 217.84) | 18. External strap doubler 407-530-020-119 or 407-030-700-195 | |
| 7. Air dam retainer (Ref.) | 19. External strap doubler 407-530-020-117 or 407-030-700-193 | |
| 8. Outboard clip 206-032-307-025 (FS 217.84) | 20. External strap doubler 407-530-020-115 or 407-030-700-191 | |
| 9. Inboard clip 206-032-307-023 (FS 217.84) | 21. Oil cooler support panel (Ref.) | |
| 10. Outboard clip (FS 204.92) (Ref.) | 22. Frame (FS 192.00) (Ref.) | |
| 11. Frame (FS 204.92) (Ref.) | 23. Right fuselage skin panel (Ref.) | |
| 12. Inboard clip (Ref.) | | |

NOTES

1. Do not disassemble inner angle, channel or fitting from longeron assembly.
2. Break sealant using a warm blade putty knife and pull longeron assembly from aft end of the fuselage.
3. Fasteners grip length may vary from those indicated.
4. Install all fasteners wet with sealant (C-251).
5. For helicopters prior to S/N 53560 and modified per BHT-407-II-33, refer to the Installation Instruction for fastener information.

Figure 7- Removal/Installation of Left Upper Longeron (Sheet 8 of 8)



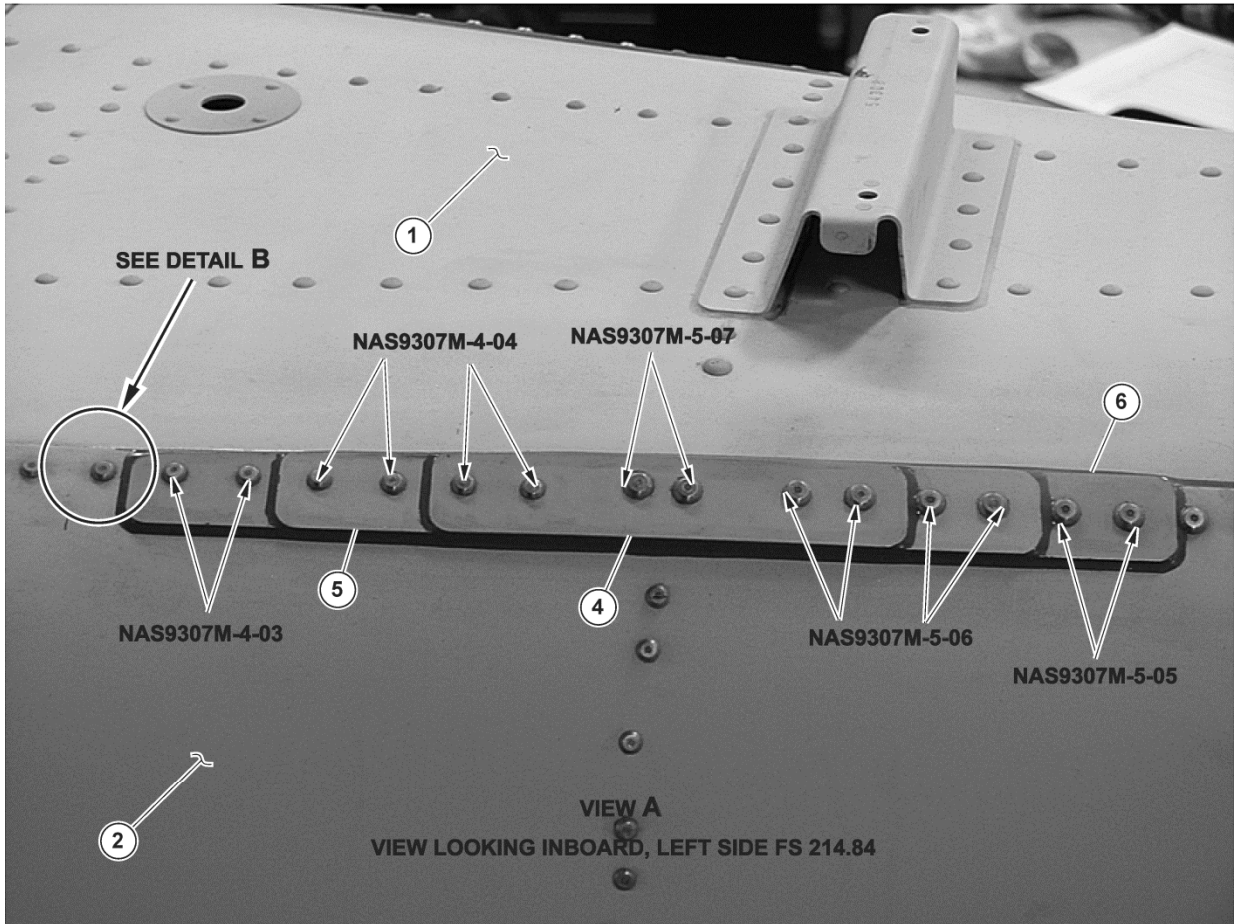
11549_009

1. Upper left longeron assembly (Ref.)
2. Frame Sta. 217.84 (Ref.)
3. Outboard clip (Ref.)

NOTES

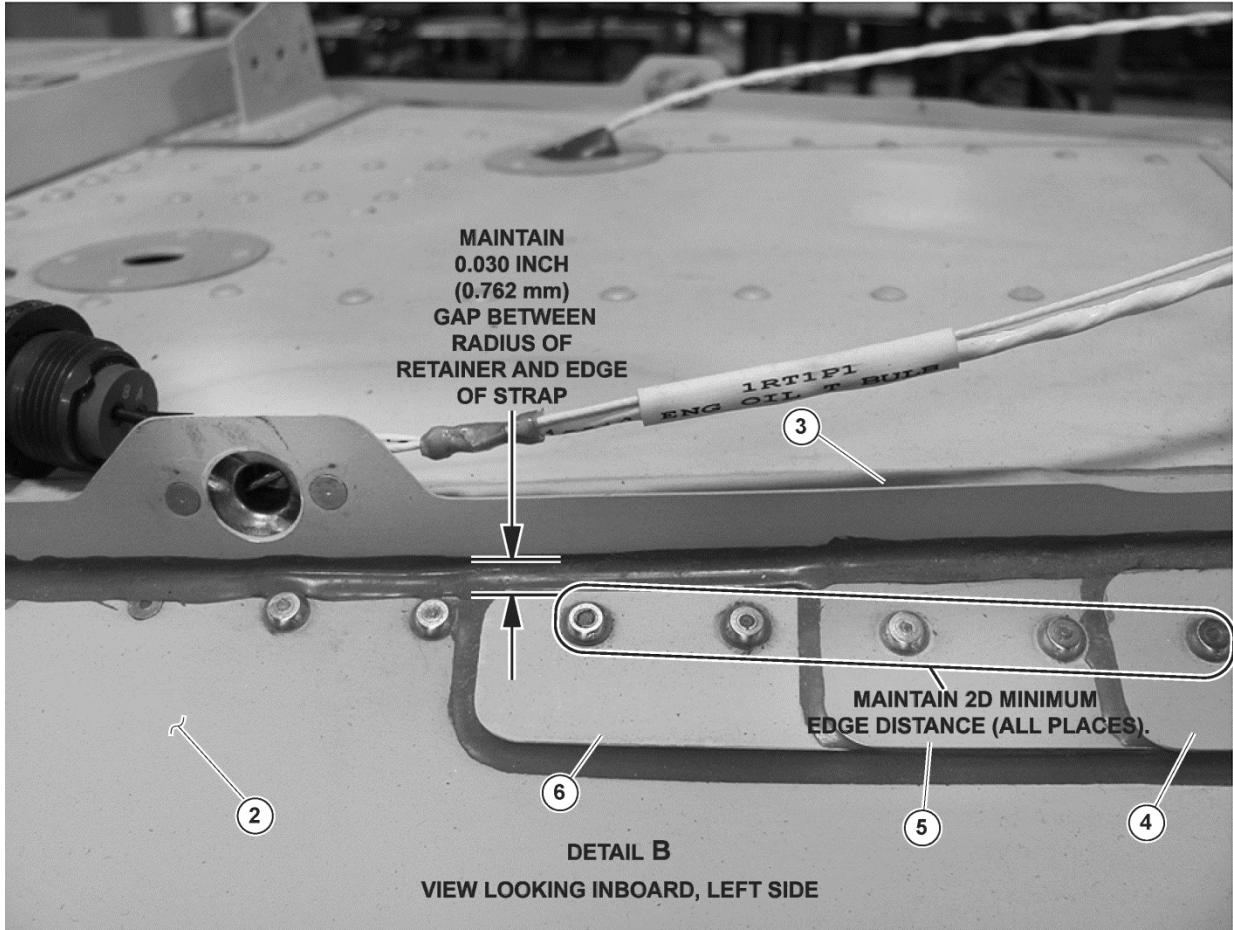
1. Inspect for gaps between upper flange of longeron assembly and side skin panel at areas shown and install solid shim. Shim to be located between upper flange of longeron and the underside of aft fuselage top skin at the area indicated before rivets are installed.
2. Make shims from 7075-T6 material.
3. Minimum shim thickness to be 0.005 inch (0.127 mm) thick.
Maximum shim thickness to be 0.032 inch (0.812 mm) thick.
4. Deburr all holes and break all sharp edges on shim before installation.
5. Coat shims faying surfaces with sealant (C-251) before installation.

Figure 8- Verification for Gaps, Station 217.84



11549_005a

Figure 9- Installation of External Strap Doublers (Sheet 1 of 2)



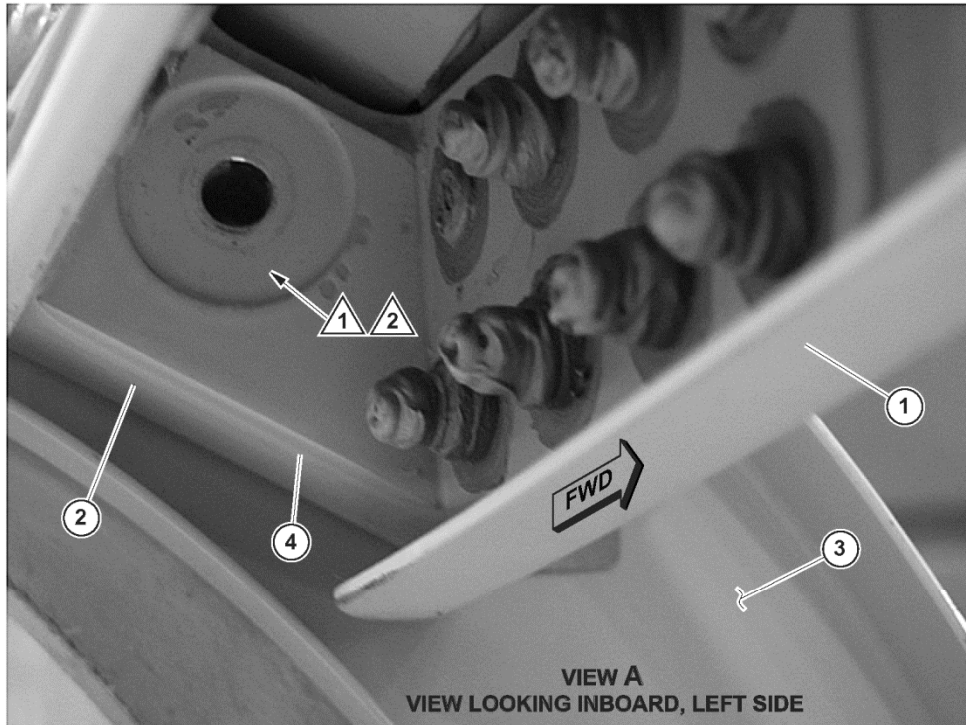
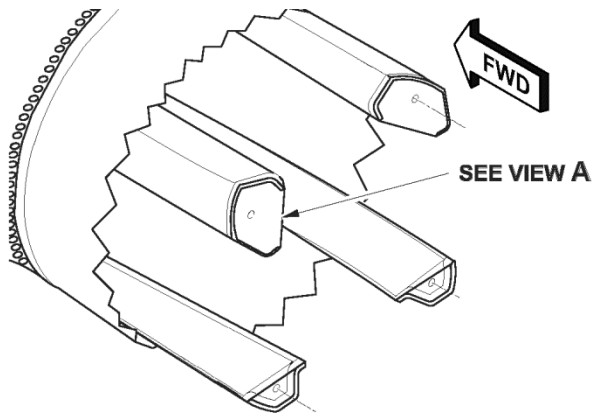
11549_005b

1. Aft fuselage top skin (Ref.)
2. Side skin panel (Ref.)
3. Oil cooler fairing retainer (Ref.)
4. External doubler 407-530-020-119 or 407-030-700-195.
5. External doubler 407-530-020-117 or 407-030-700-193.
6. External doubler 407-530-020-115 or 407-030-700-191.

NOTES

1. Fasteners grip length may vary from those indicated.
2. Install all fasteners wet with sealant (C-251).

Figure 9- Installation of External Strap Doublers (Sheet 2 of 2)



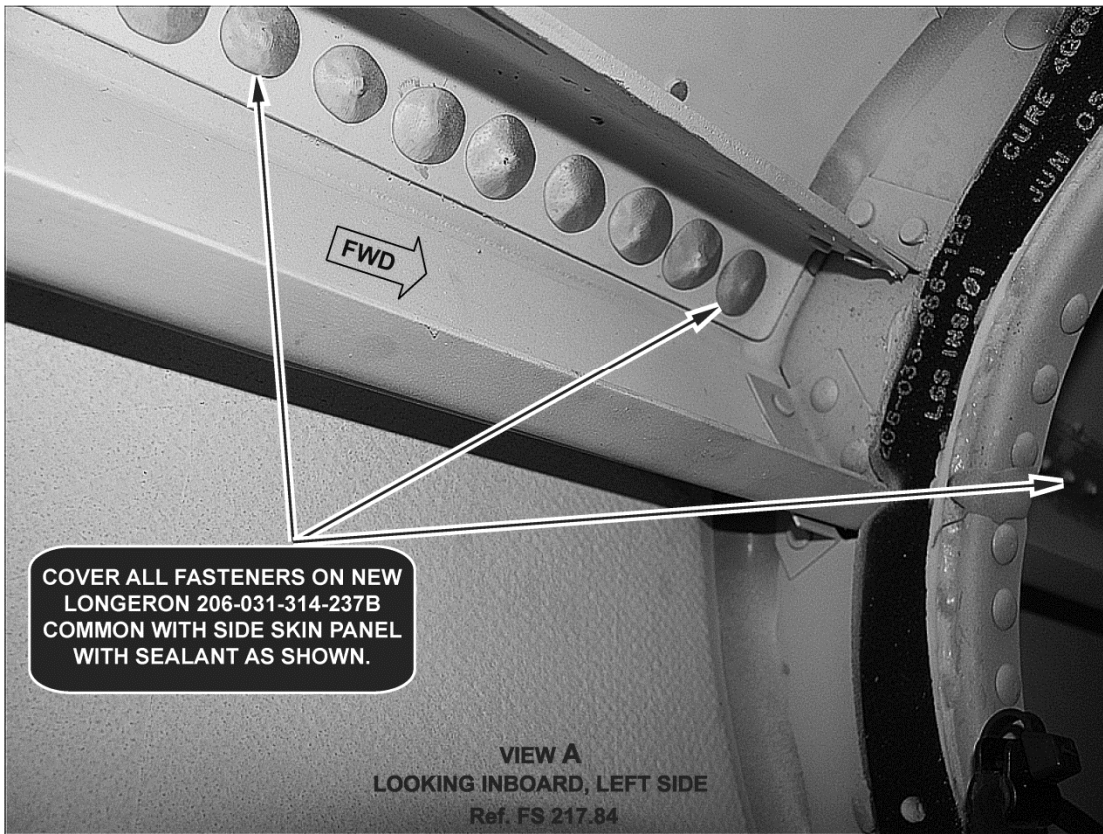
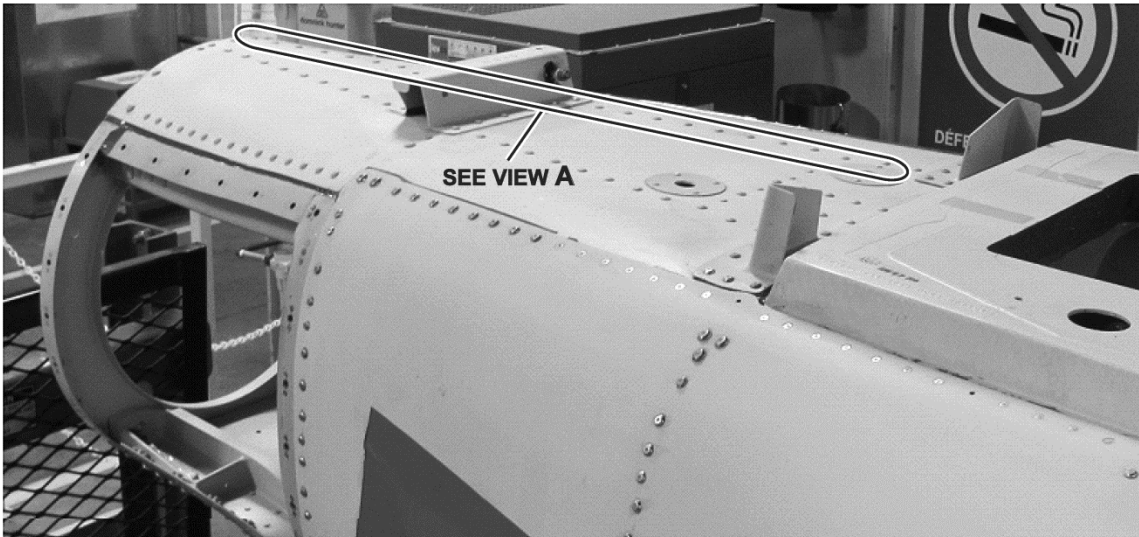
11549_006

1. Longeron assembly 206-031-314-237B
2. Cres fitting assembly
3. Aft bulkhead (FS 231.472)
4. Radius block (Al Alloy)

NOTES

1. Make a spotface to radius block 0.875 in. (22.22 mm) diameter x 0.030 in. (0.76 mm) radius, not to exceed 0.040 in. (1.02 mm) maximum depth.
2. Final ream bolt hole between 0.4385 / 0.4405 in. (11.138 / 11.189 mm) diameters.

Figure 10- Spotfacing of Radius Block on Fitting



11549_007

Figure 11- Coating of Fasteners Common With Skin Panel