

# Service Bulletin

## 1 Subject:

Inspection and modification of Strut Pick-up ribs – Rib no. 5 and Rib no. 6

## 2 Applicability:

This Service Bulletin is applicable to the aircraft identified in Table 1.

**Table 1: Applicability**

AIRCRAFT	SERIAL NUMBER(s)
GA8	S/N 01-004 up to and including S/N 17-239. 17-241, 17-244, 18-245
GA8-TC 320	S/N 01-004 up to and including S/N 17-239. 17-241, 17-244, 18-245

## 3 Amendments:

Issue 1: Initial Issue.

Issue 2: Not released

Issue 3: Not released

Issue 4: Parts 3 and 4 removed. Part 5 amended to be Part 3 and process revised.

## 4 Background:

Operators have reported cracks at the notch feature under the fuselage to wing strut attachment lug on Rib #5 and Rib #6. Metallurgical examination of affected Ribs indicates these cracks are ductile overload failures. Upon receipt of these reports, GippsAero published Service Bulletin (SB) SB-GA8-2013-99, Issue 1. The SB provided instructions to inspect the aircraft and, if cracks are found, blend away a notch feature under the fuselage to wing strut attachment lug on Rib #5 and Rib #6.

Issue 4 of this SB expands upon this data and includes instructions to replace the ribs if the crack exceeds the limits given for Issue 1.

## 5 Compliance:

This Service Bulletin is Mandatory for applicable aircraft. Required actions are detailed in Table 2.

**Table 2: Action Required**

AIRCRAFT STRUCTURAL CONFIGURATION	ACTION REQUIRED	TIME LIMITS
Aircraft S/No. 01-004 and 01-005 Rib 5/6 P/No. GA8-532023-37 / -38	Part 1 (Section 12.1)	Shall be performed within 110 hours or 13 months of the date of Issue of this bulletin, whichever is the sooner.
	Part 2 (Section 12.2)	When required, shall be performed before further flight.
	Rib Replacement. Contact GippsAero Engineering.	When required, shall be performed before further flight.
Rib 5/6 P/No. GA8-532023-37 / -38 / -77 / -78 GA8-532023-301 / -302 / -303 / -304	Part 1 (Section 12.1)	Shall be performed within 110 hours or 13 months of the date of Issue of this bulletin, whichever is the sooner.
	Part 2 (Section 12.2)	When required, shall be performed before further flight.
	Part 3 (Section 12.3)	When required, shall be performed before further flight.
Rib 5/6 P/No. GA8-532023-305 / -306 / -307 / -308 GA8-532024-041 / -042 / -043 / -044	None	-

Note that "U" part numbers are un-drilled versions of the standard parts. When installed, the P/No. GA8-532023U305 / U306 / U307 / U308 parts used by this Bulletin become P/No. GA8-532023-305 / -306 / -307 / -308. Except as detailed in Table 17, Airworthiness Limitations for these parts are provided in Section 4 of the applicable Aircraft Service Manual. For aircraft specified in Table 17 additional requirements are included in Section 13.

## 6 Weight and Balance:

For the weight and balance requirements refer to Table 3.

**Table 3: Weight and Balance Data**

Description	WEIGHT		ARM		MOMENT	
	(kg)	(lb)	(mm)	(in)	(kg.mm)	(in.lb)
Each new rib installed when not modified per Section 12.3.18	0.28	0.61	1285.8	50.62	360.0	30.88
Each new rib installed when modified per Section 12.3.18	0.50	1.10	1285.8	50.62	642.9	55.68

## 7 Approval:

The airframe and electrical system modification described in this Service Bulletin has been approved pursuant to Australian Civil Aviation Safety Regulation 21.098 (1998) as a major change. GippsAero Reference GAE11#2554.

## 8 Parts:

Table 4 lists the parts required for each of the options provided by this Service Bulletin;

- Kit P/No. SB-GA8-2013-99-01 (Table 4) is required for the rib replacement in accordance with Section 12.3 of this Service Bulletin.
- Kit P/No. SB-GA8-2013-99-02 (Table 5) is required for Part 3 of the Service Bulletin for aircraft not incorporating the SB-GA8-2008-48, (Crew Seat Rail Extension aircraft S/N 01-006 to 09-149). For other aircraft these parts are not required.
- Kit P/No. SB-GA8-2013-99-03 (Table 6) is required when installing ribs modified in accordance with Section 12.3.18 of this Service Bulletin.
- A P/No. GA8-533028-037, Access Hole Template Centre, is required to complete Section 12.3.3 (for aircraft not incorporating the SB-GA8-2008-48, Crew Seat Rail Extension; aircraft S/N 01-006 to 09-149).

**Table 4: Parts List – Kit SB-GA8-2013-99-01**

ITEM	PART No.	DESCRIPTION	QTY
1	GA8-532024-027	Aft Door Gusset Angle – LH	1
2	GA8-532024-028	Aft Door Gusset Angle – RH	1
3	GA8-532024-031	Strut Rib Doubler – Large Fwd	2
4	GA8-532024-033	Strut Rib Doubler – Small Fwd	2
5	GA8-532024-035	Strut Rib Doubler – Large Aft	2
6	GA8-532024-037	Strut Rib Doubler – Small Aft	2
7	GA8-532023U305	Rib #6 LH	1
8	GA8-532023U306	Rib #6 RH	1
9	GA8-532023U307	Rib #5 LH	1
10	GA8-532023U308	Rib #5 RH	1
11	GA8-532024-051	Long Packer	2
12	GA8-532024-053	Short Packer	2
13	GA8-532024-055	Tapered Packer	2
14	GA8-532024-073	Temporary Spacer	1
15	GA8-533028-049	Gusset Cap	2
16	GA8-532021-185	Rib 5 - 6 Spacer	2
17	MS20470AD4-4	Solid Rivet	52
18	MS20470AD4-4.5	Solid Rivet	132
19	MS20470AD4-5	Solid Rivet	85
20	MS20470AD4-5.5	Solid Rivet	12
21	MS20470AD4-6	Solid Rivet	10
22	MS20470AD5-5.5	Solid Rivet	36
22	MS20470AD5-6	Solid Rivet	32
23	MS20470AD5-6.5	Solid Rivet	4
24	MS20470AD5-9	Solid Rivet	32
25	MS20470AD5-10	Solid Rivet	18
26	MS20470AD5-11	Solid Rivet	6
27	MS20470AD5-12	Solid Rivet	10
28	MS20470AD5-13	Solid Rivet	8
29	MS20470AD6-7	Solid Rivet	8
30	MS20470AD6-7.5	Solid Rivet	6
31	MS20470AD6-8	Solid Rivet	6
32	MS20426AD3-3.5	C/S Solid Rivet	10
33	MS20426AD3-4	C/S Solid Rivet	36
34	MS20426AD3-4.5	C/S Solid Rivet	32
35	MS20426AD3-5	C/S Solid Rivet	8
36	MS20426AD3-5.5	C/S Solid Rivet	4
37	MS20426AD4-4	C/S Solid Rivet	4
38	MS20426AD4-4.5	C/S Solid Rivet	4
39	MS21047L08	Anchor nut	15
40	MS21047L3	Anchor nut	22
41	MS21071L08	Anchor nut	4
42	MS21071L3	Anchor nut	7
43	MS21061L3	Anchor Nut	2
44	CR3213-4-01	CHERRYMAX® Rivet	15

ITEM	PART No.	DESCRIPTION	QTY
45	CR3213-4-02	CHERRYMAX® Rivet	68
46	CR3213-4-03	CHERRYMAX® Rivet	4
47	CR3213-5-02	CHERRYMAX® Rivet	30
48	CR3213-5-03	CHERRYMAX® Rivet	12
49	CR3212-4-02	C/S CHERRYMAX® Rivet	8
50	CR3212-4-03	C/S CHERRYMAX® Rivet	8
51	CCR2643-3	Cherry-Pull Through® rivets	24
52	CCR2643-4	Cherry-Pull Through® rivets	24
53	TLPD321	Blind Rivets	20
54	TLPD424	Blind Rivets	20
55	NAS6603-26	Bolt, Close Tolerance, Long Thread	2
56	MS21042-3	Nut, Self-Locking, Reduced Height	2
57	AN960-10	Washer, Flat	4
58	CR3243-4-03	CHERRYMAX® Rivet	40
59	CR3243-5-02	CHERRYMAX® Rivet	40

**Table 5: Parts List – Kit SB-GA8-2013-99-02**

ITEM	PART No.	DESCRIPTION	QTY
1	GA8-533028-037	Access Hole Template	1
2	GA8-533028-033	Cover Plate	1
3	GA8-533028-047	Cover Plate	1
4	CR3213-4-02	CHERRYMAX® Rivet	44

**Table 6: Parts List – Kit SB-GA8-2013-99-03**

ITEM	PART No.	DESCRIPTION	QTY (Aircraft Set)
1	GA8-532024-061	DOUBLER #1 – RIB #5 LH	1
2	GA8-532024-062	DOUBLER #1 – RIB #5 RH	1
3	GA8-532024-063	DOUBLER #1 – RIB #6 LH	1
4	GA8-532024-064	DOUBLER #1 – RIB #6 RH	1
5	GA8-532024-065	DOUBLER #2 – RIB #5 LH	1
6	GA8-532024-066	DOUBLER #2 – RIB #5 RH	1
7	GA8-532024-067	DOUBLER #2 – RIB #6 LH	1
8	GA8-532024-068	DOUBLER #2 – RIB #6 RH	1
9	GA8-532024-069	FLANGE DOUBLER LH	2
10	GA8-532024-070	FLANGE DOUBLER RH	2
11	GA8-532024-071	SKIN SHIM	4
12	MS20470AD4-3	Solid Rivet	50
13	MS20470AD5-3	Solid Rivet	100
14	MS20470AD5-4	Solid Rivet	30
15	MS20470AD5-6	Solid Rivet	16

**Table 7: Compounds List**

ITEM	COMPOUND NUMBER	DESCRIPTION
C1	BMS10-79 TYII CL A	Primer, BMS10-79 TYII CL A Other products meeting MIL-PRF-23377 Type I & II Class C2 may also be used.
C2	PR1422 B2	Sealant. Other products meeting AMS-S-8802 may also be used.
C3	INTERIOR TOP COAT	Paint conforming to MIL-PRF-85285E (or later revision) Type I Class H, or an aviation urethane.
C4	PPG 2-Pack	Paint. MIL-PRF-85285 Type I Class H topcoat may also be used.

**9 Parts Availability:**

Parts can be obtained directly from GippsAero using the following contact details.

Tel: +61 (0)3 5172 1200  
 Fax: +61 (0)3 5172 1201  
 Email: [PARTS@gippsaero.com.au](mailto:PARTS@gippsaero.com.au)

**10 Labour:**

The following labour estimate is provided as a guide for planning purposes only. Variations in aircraft configuration will change the time required to complete sections of work.

**Part 1**

2 labour hours

**Part 2**

7 labour hours

**Part 3**

80 labour hours

**11 Warranty:**

Aircraft covered by warranty may claim the direct cost of incorporating the requirements of this Service Bulletin by contacting GippsAero Customer Service:

Tel: +61 (0)3 5172 1200  
 Fax: +61 (0)3 5172 1201  
 Email: [SUPPORT@gippsaero.com.au](mailto:SUPPORT@gippsaero.com.au)

## 12 Accomplishment Instructions:

The following instructions are applicable to the Left-Hand Side (LHS) of the aircraft. the Right-Hand Side (RHS) is opposite, unless noted otherwise.

### WARNING:

**IT IS THE RESPONSIBILITY OF ALL PERSONNEL TO ENSURE WORK HEALTH AND SAFETY REQUIREMENTS ARE MET AT ALL TIMES. ALL PERSONNEL MUST COMPLY WITH ALL WORK HEALTH AND SAFETY REQUIREMENTS AS DEFINED OR RECOMMENDED BY:**

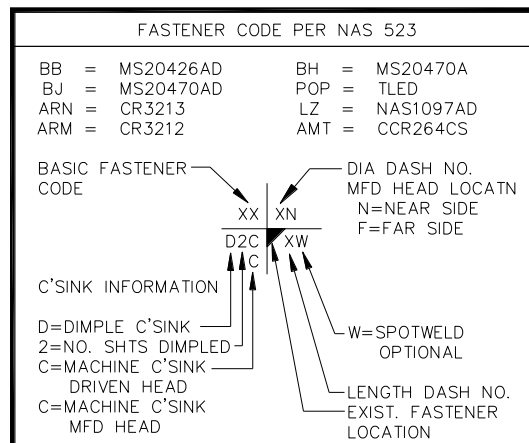
- EQUIPMENT OEM INSTALLATION AND OPERATION MANUALS.
- AIRCRAFT MAINTENANCE AND OPERATION MANUALS.
- ASSOCIATED AIRCRAFT MODIFICATION INSTRUCTIONS.
- RELEVANT NAA REGULATIONS AND ADVISORY DOCUMENTATION.
- ORGANISATION MANUALS, INCLUDING NAA ENDORSED OPERATIONAL AND MAINTENANCE MANUALS. AND
- RELEVANT LOCAL, STATE AND FEDERAL GOVERNMENT REQUIREMENTS.

### WARNING:

**READ THE APPLICABLE MATERIAL SAFETY DATA SHEET (MSDS) FOR ANY MATERIAL/CONSUMABLE USED DURING THE ACCOMPLISHMENT OF THIS SERVICE BULLETIN AND EMPLOY ANY RECOMMENDED PERSONAL PROTECTIVE EQUIPMENT (PPE) CONTAINED THEREIN.**

### NOTE:

*Unless otherwise specified, reference to the GA8/GA8-TC 320 Service Manual and FAA Advisory Circular (AC) 43.13-1B should be made when carrying out the procedures prescribed in this Service Bulletin. In case of a discrepancy between the Service Manual and the AC, the Service Manual takes precedence.*



**Figure 1: Fastener Codes**

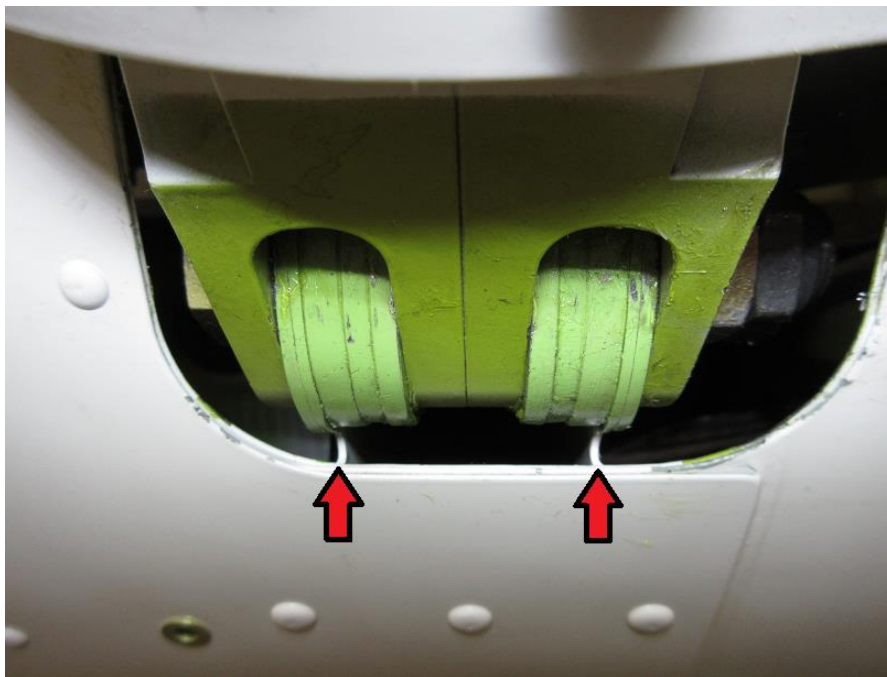
## 12.1 PART 1 – RIB INSPECTION

- a. Secure aircraft in location suitable for visual inspection of structure.
- b. Disconnect the LHS and RHS Strut to Fuselage Fairings (P/N GA8-570017-013 and P/N GA8-570017-015) and slide away from fuselage.
- c. Clean the visible sections of Ribs #5 and #6 using a cleaning solvent and a clean, lint free cloth to remove any grease, airframe sealant or foreign matter.

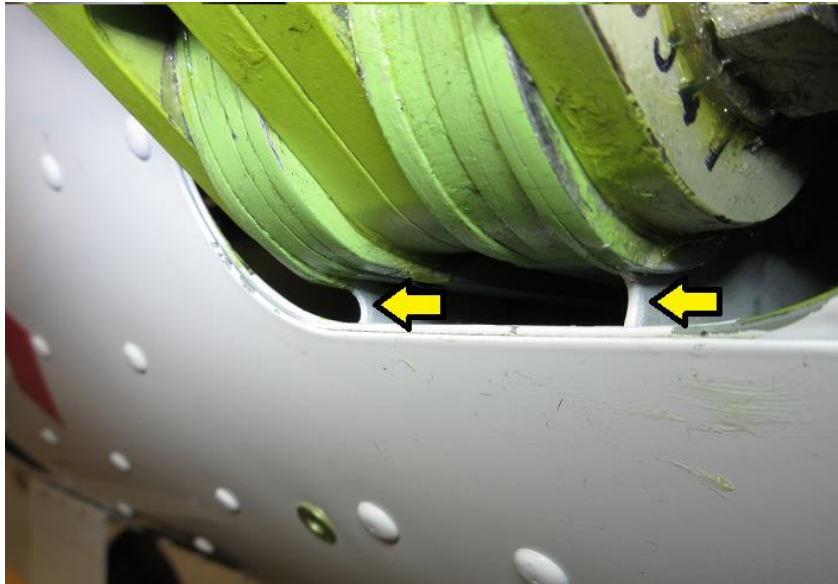
**NOTE:**

*Operators may choose to use a High Frequency Eddy Current (HFEC) inspection using a shielded pencil probe calibrated against a reference standard with an EDM notch depth of no less than 0.020" (0.5mm) OR a fluorescent Liquid Penetrant Inspection in accordance with ASTM E-1417-13 (or later approved revision) in lieu of a detailed visual inspection. These Non-Destructive Inspections (NDI) will more reliably detect cracks or crack indications in the Ribs*

- d. Perform a detailed visual inspection, using at least a strong light source and preferably 10x magnification, or a non-destructive inspection, of the radius below the wing strut attachment lug(s) as identified in Figure 2, Figure 3 and Figure 4. Check for any crack indications. Typical cracks are shown in Figure 5.
- e. If any cracks are detected in the Ribs, determine an approximate crack length. Short cracks may be fully removed as detailed in Part 2 or the affected rib may be replaced as detailed in Part 3. Cracks which are larger than the blend detailed in Part 2 may only be addressed by replacing the rib as detailed in Part 3. If no cracks are found, continue to Step f.
- f. Slide LHS and RHS Strut to Fuselage Fairings against the fuselage and fasten using removed fasteners. Inspection is complete.



**Figure 2: Strut Pickup Rib Inspection Area**

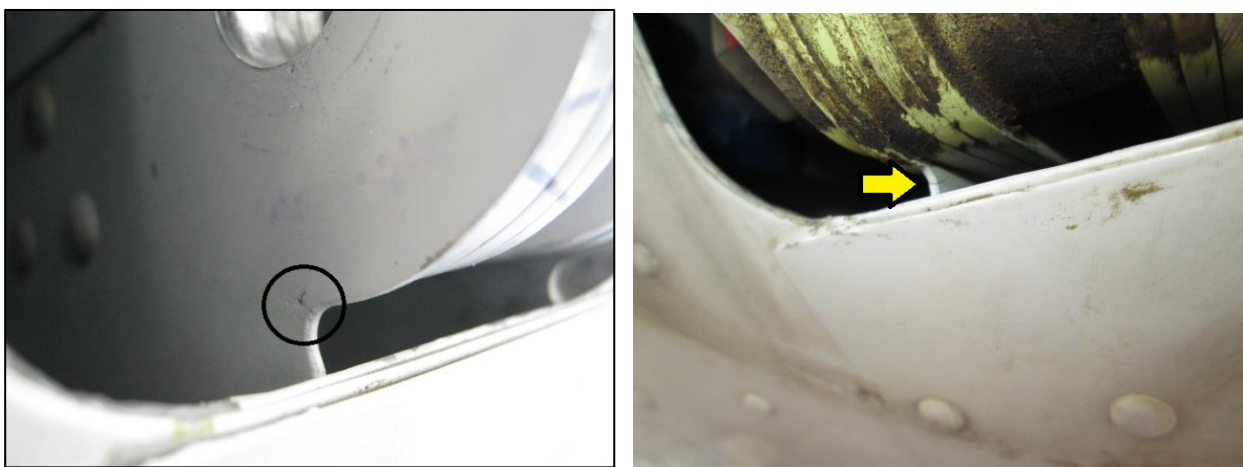


**Figure 3: Possible Crack Locations**



**Figure 4: Area of Rib for Inspection**

*Photograph of partially constructed aircraft – does not show an airworthy configuration*



**Figure 5: Typical Cracks**

*Images courtesy of aircraft operators*



## 12.2 PART 2 – MODIFY RIB PROFILE

### 12.2.1 Prepare Aircraft for Modification

- a. Jack and shore the aircraft and support the wing for wing strut removal in accordance with Chapter 7 of the applicable aircraft Service Manual.
- b. Disconnect the wing strut at the fuselage attachment in accordance with Chapter 57 of the applicable aircraft Service Manual.

### 12.2.2 Confirm Length of Crack

**NOTE:**

*Operators may choose to use a High Frequency Eddy Current (HFEC) inspection using a shielded pencil probe calibrated against a reference standard with an EDM notch depth of no less than 0.020" (0.5mm) OR a fluorescent Liquid Penetrant Inspection in accordance with ASTM E-1417-13 (or later approved revision) in lieu of a detailed visual inspection. These Non-Destructive Inspections (NDI) will more reliably detect cracks or crack indications in the Ribs*

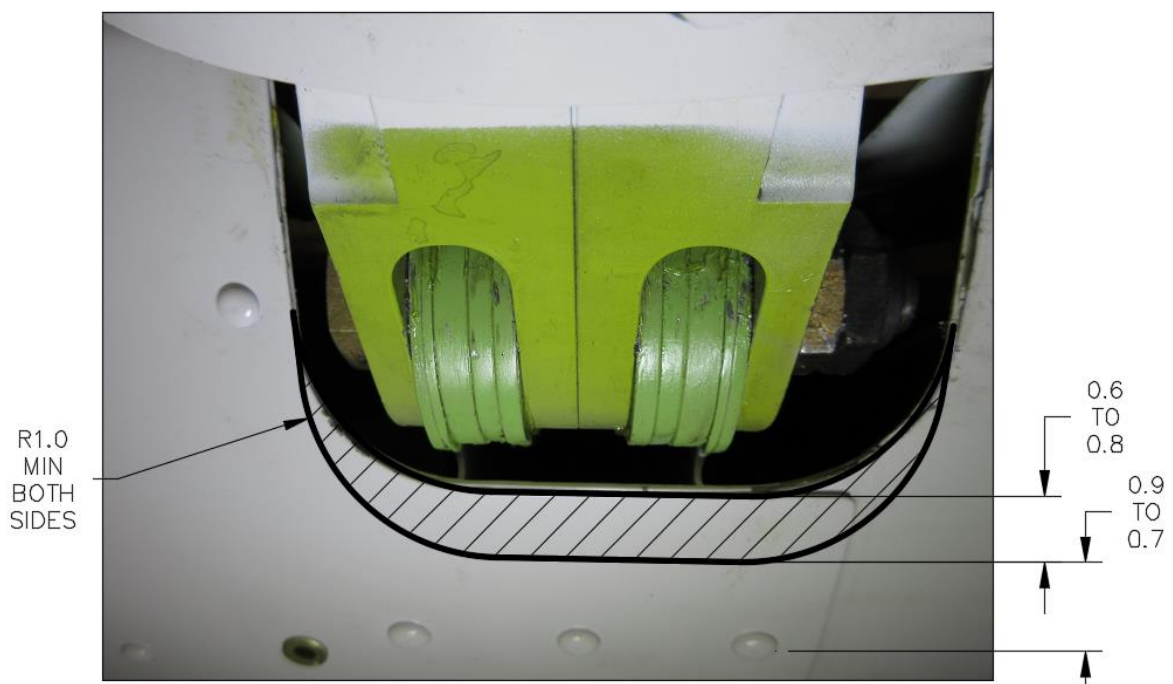
- a. Perform a detailed visual inspection using a strong light source and at least 10x magnification, or a non-destructive inspection of the suspected area of crack indication to confirm the length of any crack(s).
- b. Check the length of any crack(s) is/are less than the maximum rework dimensions shown in Figure 7. If the crack(s) is/are shorter, proceed to the next section and complete. Otherwise, do Part 3 of this Service Bulletin.

### 12.2.3 Modify Fuselage Skin

**CAUTION:**

**WHEN MODIFYING THE FUSELAGE SKIN MAKE SURE ANY SURROUNDING STRUCTURE REMAINS DAMAGE FREE**

- a. Enlarge the cut out in the Forward Cabin Belly Skin (P/N GA8-533021-113), Aft Cockpit Belly Skin (P/N GA8-533021-111) and Fuselage Strut Skin Doubler (P/N GA8-533022-095) to the dimensions shown in Figure 6.
- b. De-burr and finish all blended edges with a Scotch-Brite® pad or similar to achieve a surface finish of at least 125 microinch Ra (3.2 micron Ra).



**Figure 6: Fuselage Skin Modification**

## 12.2.4 Modify Rib Profile

### **CAUTION:**

**WHEN MODIFYING THE RIB PROFILE MAKE SURE ADJACENT CARRY-THROUGH STRAPS REMAIN DAMAGE FREE**

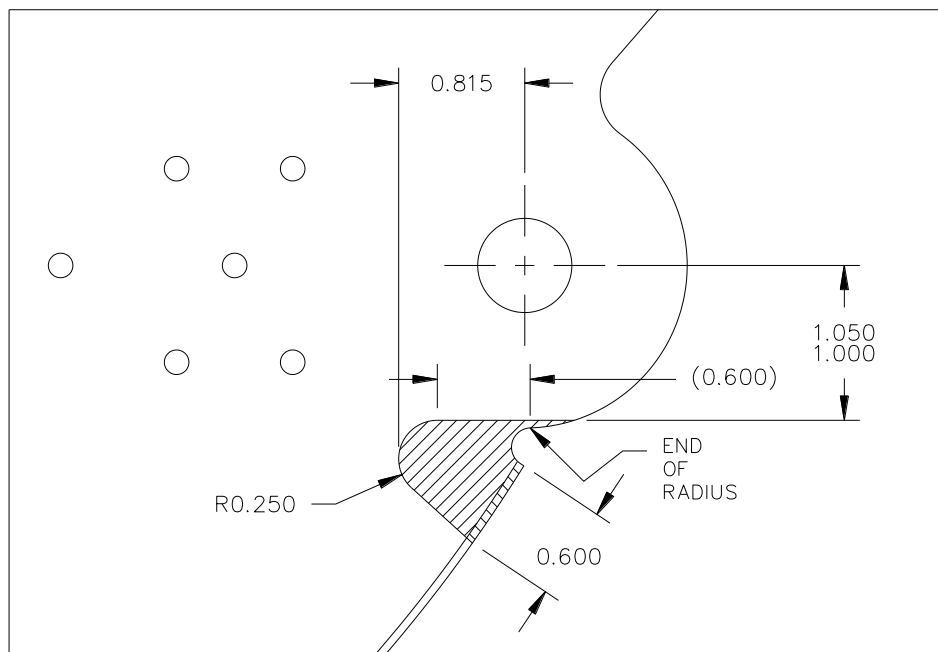
### **NOTE:**

*Blend may be applied to ribs on one side of the aircraft only, if the other side has no cracks. However, both ribs on the affected side of the aircraft must be blended.*

- Remove material in the shaded area by blending to achieve the dimensions shown in Figure 7.
- De-burr and finish all blended edges with a Scotch-Brite® pad or similar to achieve a surface finish of at least 125 microinch Ra (3.2 micron Ra).

### **CAUTION:**

**REMOVE ALL OF THE MATERIAL INDICATED. DO NOT APPLY A PARTIAL BLEND.**



**Figure 7: Fuselage Rib Modification.**

*Tolerance on dimensions +/-0.01" unless shown otherwise*

## 12.2.5 Inspect Reworked Area

### **NOTE:**

*Operators may choose to use a High Frequency Eddy Current (HFEC) inspection using a shielded pencil probe calibrated against a reference standard with an EDM notch depth of no less than 0.020" (0.5mm) OR a fluorescent Liquid Penetrant Inspection in accordance with ASTM E-1417-13 (or later approved revision) in lieu of a detailed visual inspection. These Non-Destructive Inspections (NDI) will more reliably detect cracks or crack indications in the Ribs*

- Perform a detailed visual inspection using a strong light source and at least 10x magnification, or a non-destructive inspection, of the reworked area to confirm the crack has been removed.
- If crack indications remain, do Part 3 of this Service Bulletin.
- If cracking has been fully removed, prime exposed metal using Compound C1 (Table 7)

## 12.2.6 Clean Up

- Clean any foreign material and swarf from the under-floor area.

## 12.3 PART 3 – RIB REPLACEMENT

### WARNING:

IT IS THE RESPONSIBILITY OF ALL PERSONNEL TO ENSURE WORK HEALTH AND SAFETY REQUIREMENTS ARE MET AT ALL TIMES. ALL PERSONNEL MUST COMPLY WITH ALL WORK HEALTH AND SAFETY REQUIREMENTS AS DEFINED OR RECOMMENDED BY:

- EQUIPMENT OEM INSTALLATION AND OPERATION MANUALS;
- AIRCRAFT MAINTENANCE AND OPERATION MANUALS;
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- RELEVANT NAA REGULATIONS AND ADVISORY DOCUMENTATION;
- ORGANISATION MANUALS, INCLUDING NAA ENDORSED OPERATIONAL AND MAINTENANCE MANUALS; AND
- RELEVANT LOCAL, STATE AND FEDERAL GOVERNMENT REQUIREMENTS.

### WARNING:

READ THE APPLICABLE MATERIAL SAFETY DATA SHEET (MSDS) FOR ANY CONSUMABLE USED DURING THE ACCOMPLISHMENT OF THIS ENGINEERING RELEASE AND EMPLOY ANY RECOMMENDED PERSONAL PROTECTIVE EQUIPMENT (PPE) CONTAINED THEREIN.

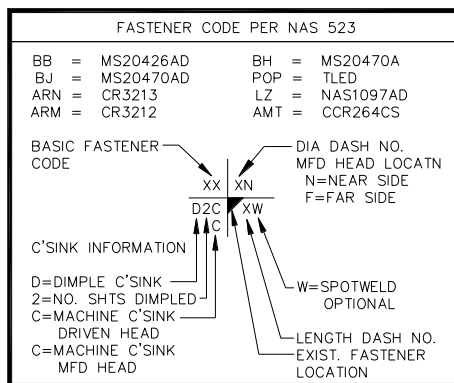
### NOTE:

*Ensure the aircraft is prepared for maintenance and that appropriate safety precautions are taken when performing work outlined in this Engineering Release.*

*Unless otherwise specified, reference to the aircrafts Service Manual and FAA Advisory Circular (AC) 43.13-1B should be made when carrying out the procedures prescribed in this Engineering Release. In case of a discrepancy between the Service Manual and the AC, the Service Manual takes precedence.*

*When carrying out work outlined by this Engineering Release, care is to be taken to ensure damage to surrounding structure and installations does not occur.*

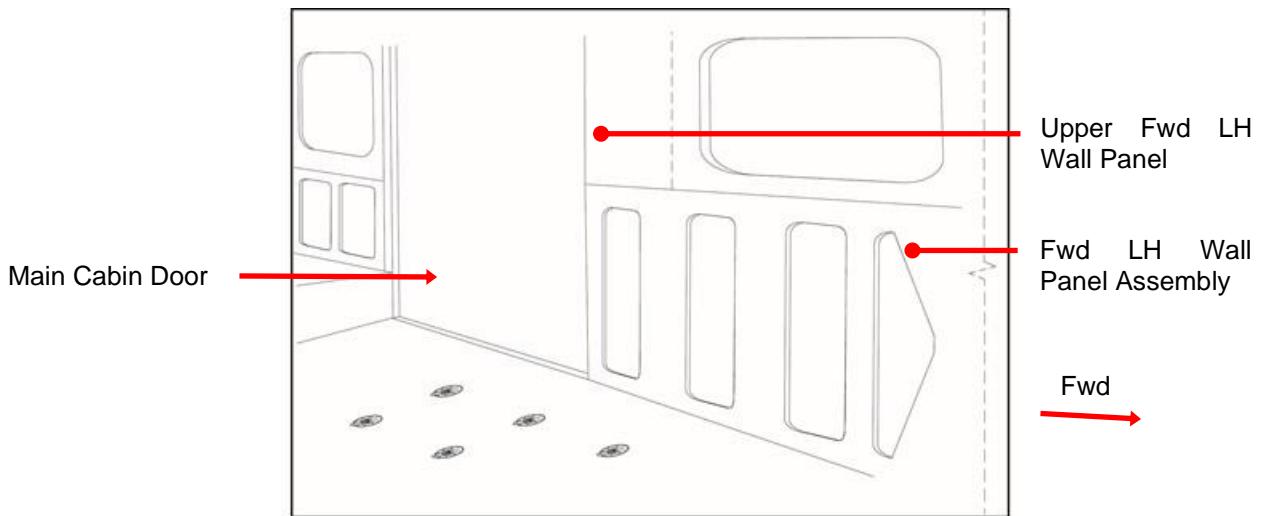
*Rivet lengths shown are a guide only and shall be verified on installation.*



**Figure 8: Fastener Codes**

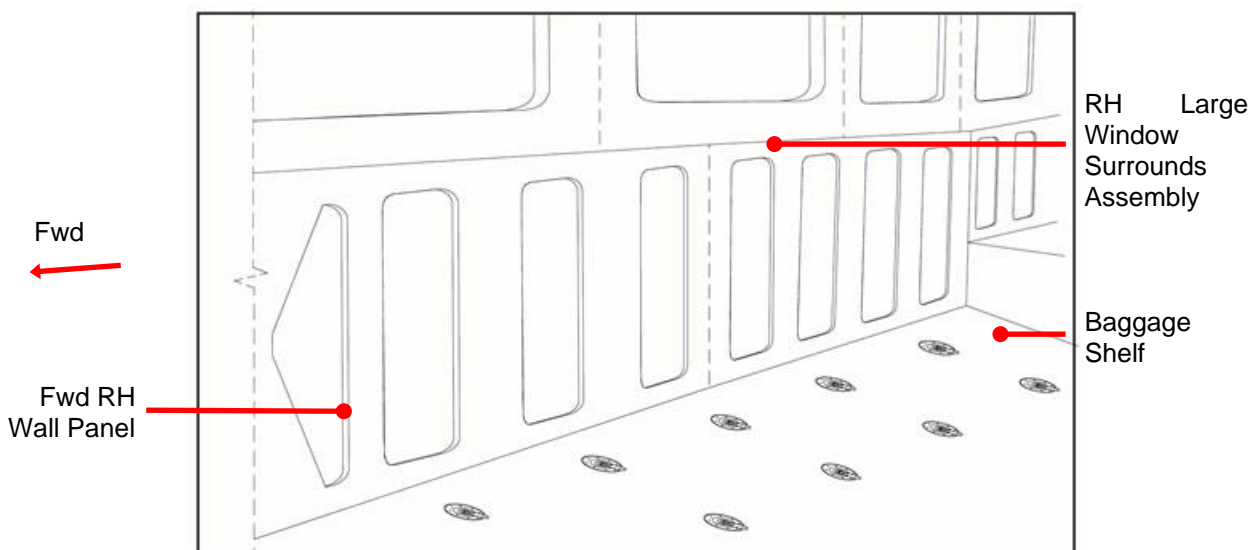
### 12.3.1 General Disassembly

- a. Jack and shore the aircraft and support the wing for wing strut removal in accordance with Chapter 7 of the applicable aircraft Service Manual.
- b. Drain the wing fuel tanks and sump tank.
- c. Disconnect the wing strut at the fuselage end in accordance with Chapter 57 of the GA8 or GA8-TC 320 Service Manual.
- d. Remove Crew Restraint System and Crew Seats in accordance with Section 25-10-01 and 25-10-03 of the GA8 or GA8-TC 320 Service Manual.
- e. Remove Occupant Restraint System and Passenger Seats in accordance with Section 25-20-01 and 25-20-02 of the GA8 or GA8-TC 320 Service Manual.
- f. Remove floor coverings forward and aft of Rib #5 and #6.
- g. Remove Fwd LH Wall Panel Assembly (GA8-252014-051, Figure 9).
- h. Remove Cabin Side-wall insulation.
- i. Remove the Upper Fwd LH Wall Panel (GA8-252024-153, Figure 9).



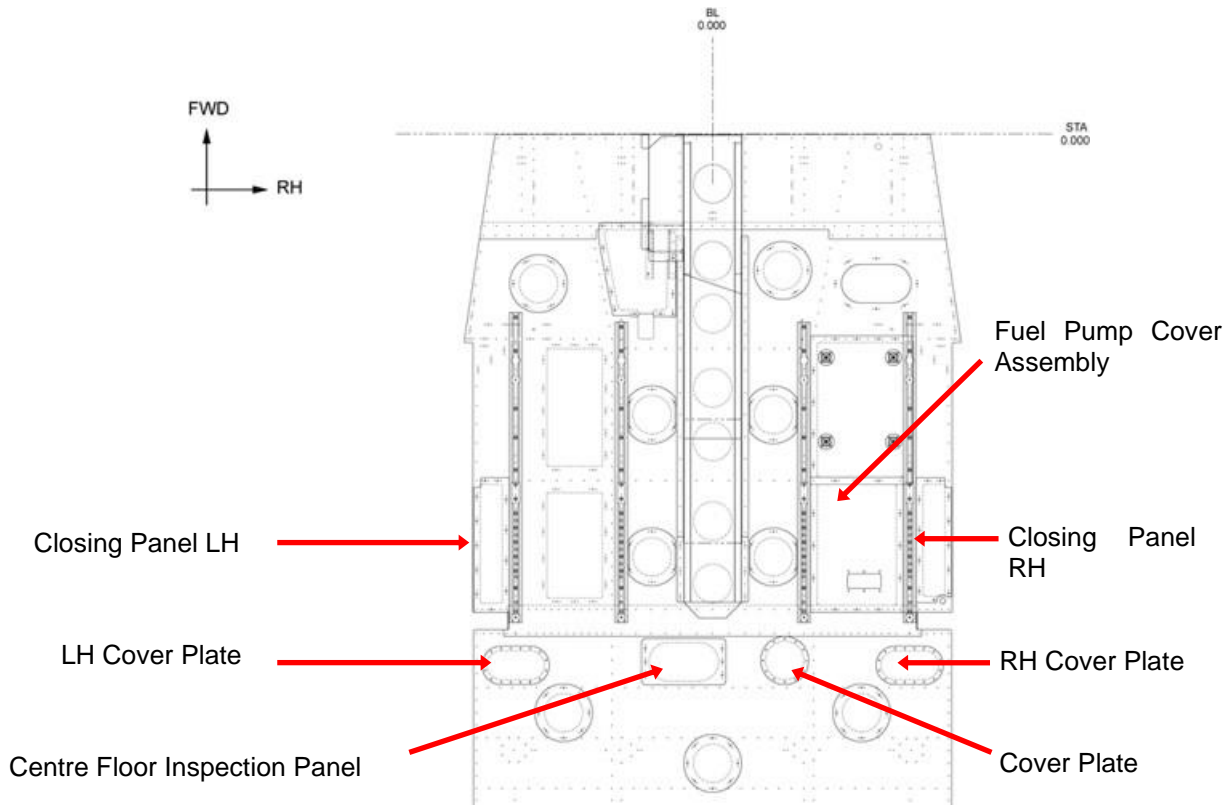
**Figure 9: LH Interior Trim Panels**

- j. Remove Fwd RH Wall Panel (GA8-252014-052, Figure 10).
- k. Remove Cabin Side-Wall Insulation.
- l. Remove the RH Large Window Surrounds Assembly (GA8-252014-037, Figure 10).



**Figure 10: RH Interior Trim Panels**

- m. Remove battery from the aircraft in accordance with Section 24-00-10 of the GA8 or GA8-TC 320 Service Manual.
- n. Remove all crew seat rails in accordance with Section 24-00-10 of the GA8 or GA8-TC 320 Service Manual. Label the seat rails to make sure they are re-installed in the same location.
- o. Remove Closing Panel LH (GA8-533022-037) and Closing Panel RH (GA8-533022-151, Figure 11).
- p. Remove Centre Floor Inspection Plate (GA8-533022-155, Figure 11).
- q. Remove the Fuel Pump Cover Assembly (GA8-533017-011, Figure 11).
- r. Remove the Cover Plate (GA8-533028-033), if fitted (Figure 11).
- s. Remove the LH and RH Cover Plates (GA8-533028-047), if fitted (Figure 11).



**Figure 11: Fuselage Floor Inspection Panels**

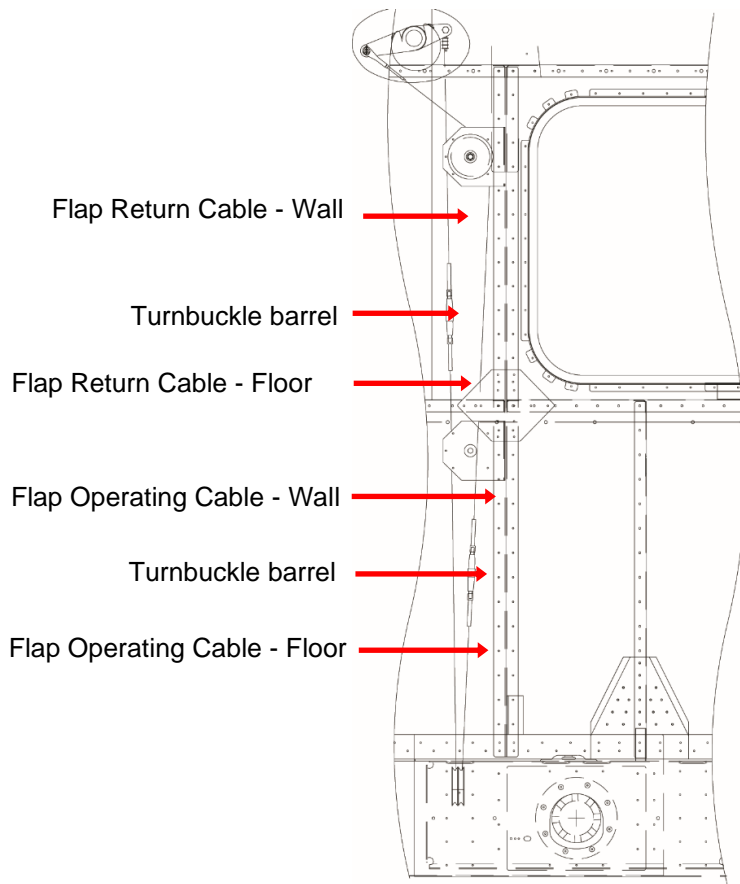
### 12.3.2 Remove Flap Lever Assembly

- a. Support or remove the flaps in accordance with Section 27-50-20 of the GA8 or GA8-TC 320 Service Manual.
- b. Remove the Console Recess Assembly (GA8-534072-015) and Fire Extinguisher.

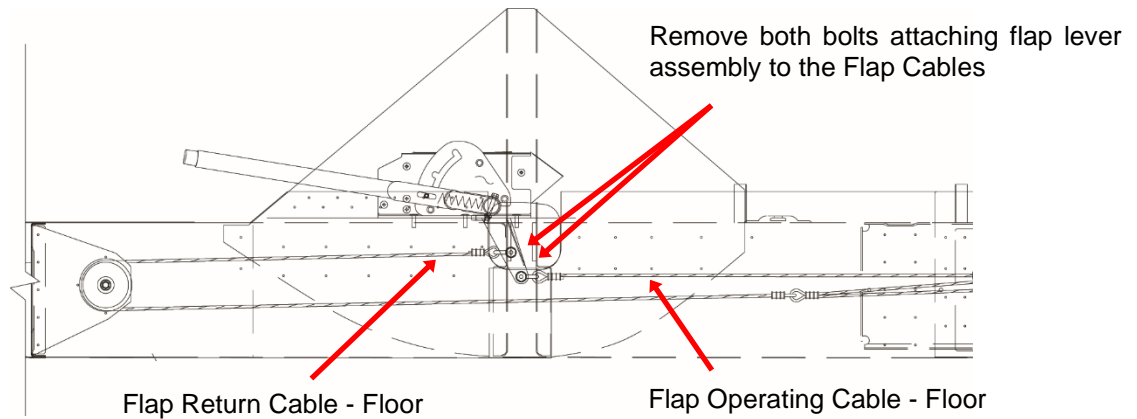
**NOTE:**

*The aft centre screw on the Console Recess Assembly is attached to the SCAT hose using a nut.*

- c. Loosen the Turnbuckle barrels for the Flap Cables in the side-wall structure (Figure 12).
- d. Remove the screws attaching the Flap Lever Assembly (GA8-275013-011) to the cockpit floor and the centre console.
- e. Lift Flap Lever Assembly and disconnect the Flap Operating Cable - Floor (GA8-275011-013) and the Flap Return Cable - Floor (GA8-275011-017) from the Flap Lever Assembly (Figure 13).
- f. Remove Flap Lever Assembly.



**Figure 12: Flap Cable routing in LH Sidewall, RH similar**



**Figure 13: Flap Lever – Cable disconnection**

### 12.3.3 Modify Centre Floor Skin – Aircraft S/N 01-006 to 09-149

- a. Access is required to the aft side of Rib #6. For aircraft not incorporating the SB-GA8-2008-48 (Crew Seat Rail Extension aircraft S/N 01-006 to 09-149), the Centre Floor Skin (GA8-533022-147) must be modified to incorporate three access holes.

**NOTE:**

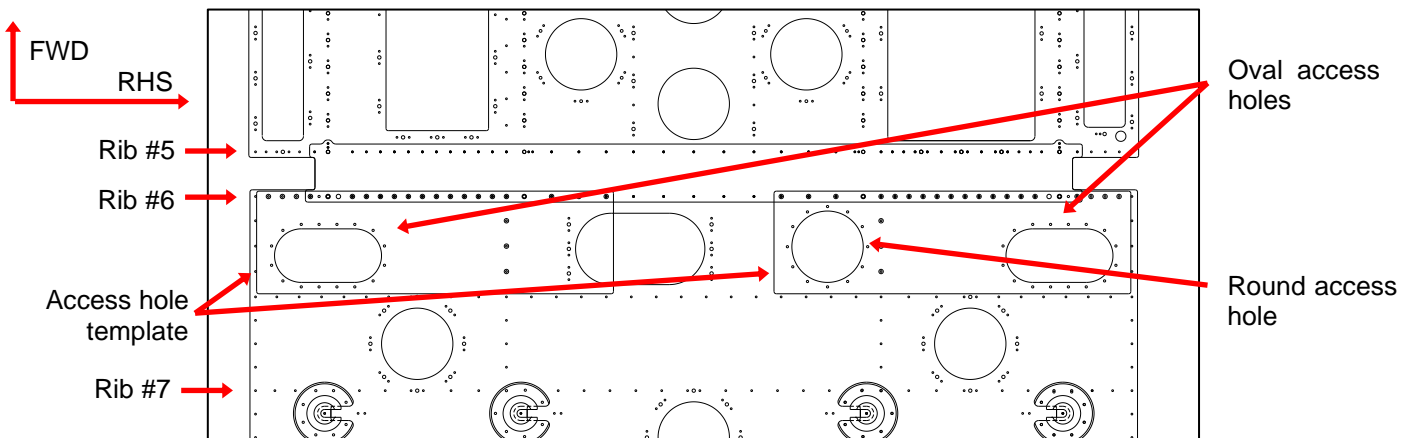
*Position Access Hole Template on either side of floor skin to make sure the oval-shaped hole is closer to Rib #7 than to Rib #6. The Access Hole Template has rows of 0.250" diameter holes which are to line up with the rivet line attaching the Centre Floor Skin to Rib #6 and the Keel Beam upper flange.*

- b. Position P/N GA8-533028-037 Access Hole Template Centre on the Floor Skin as shown in Figure 14.
- c. Mark the locations of the oval-shaped access hole and adjacent fastener holes on LHS of the Centre Floor Skin using Access Hole Template. (Figure 14).
- d. Mark the locations of both the round and oval-shaped access hole and adjacent fastener holes on RHS of the Centre Floor Skin (Figure 14).

**CAUTION:**

**ENSURE THAT STRUCTURE, FUEL SYSTEMS AND ELECTRICAL SYSTEMS REMAIN DAMAGE FREE WHEN CUTTING THE FLOOR SKIN**

- e. Remove template. Cut access holes and drill satellite holes using a #30 drill, to a diameter of 0.129".
- f. De-burr and finish all blended edges with a Scotch-Brite® pad or similar to achieve a surface finish of at least 125 microinch Ra (3.2 micron Ra).
- g. Apply a primer (Compound C1, Table 7) to the exposed metal edges



**Figure 14: Centre Floor Skin Access Holes**

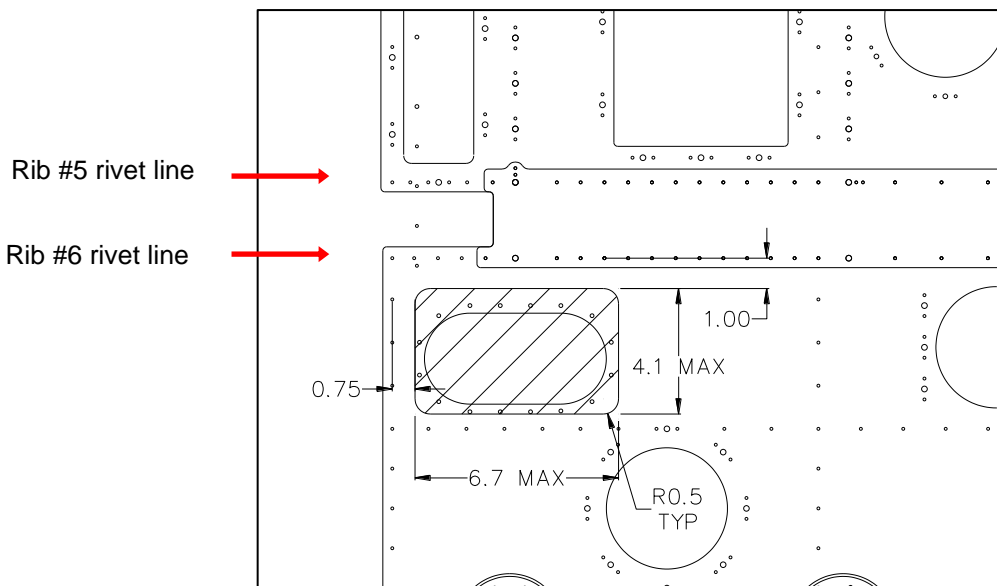
### 12.3.4 Centre Floor Skin Modification – Optional

- a. If access provided by oval access holes is not sufficient, the centre floor skin may be modified as detailed below:

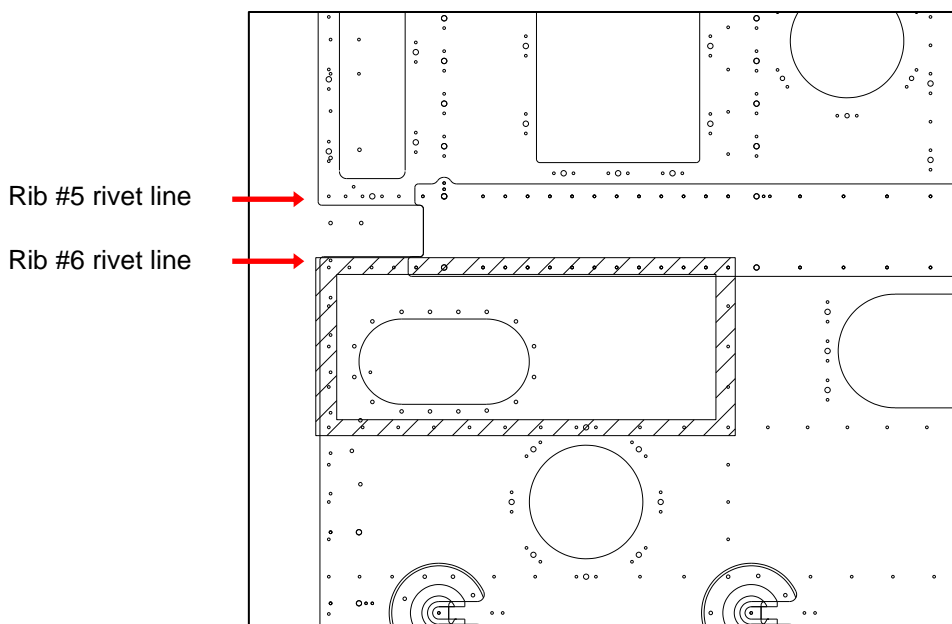
**CAUTION:**

**ENSURE THAT STRUCTURE, FUEL SYSTEMS AND ELECTRICAL SYSTEMS REMAIN DAMAGE FREE WHEN CUTTING THE FLOOR SKIN**

- b. Cut the LHS and RHS floor skin in the shaded region shown in Figure 15. Make sure the edge of the cut-out remains at least 0.350" from any rivets.
- c. De-burr and finish all blended edges with a Scotch-Brite® pad or similar to achieve a surface finish of at least 125 microinch Ra (3.2 micron Ra).
- d. Apply a primer (Compound C1, Table 7) to the exposed metal edges.
- e. Note the type and diameter of fasteners highlighted in Figure 16. Remove fasteners around the cut-out.



**Figure 15: Centre Floor Cut-Out Region – LHS viewed from above**



**Figure 16: Fasteners to be Removed – Viewed from Above**



### 12.3.5 De-riquet Cockpit Floor Skin and Seat Rail Intercostal Rib

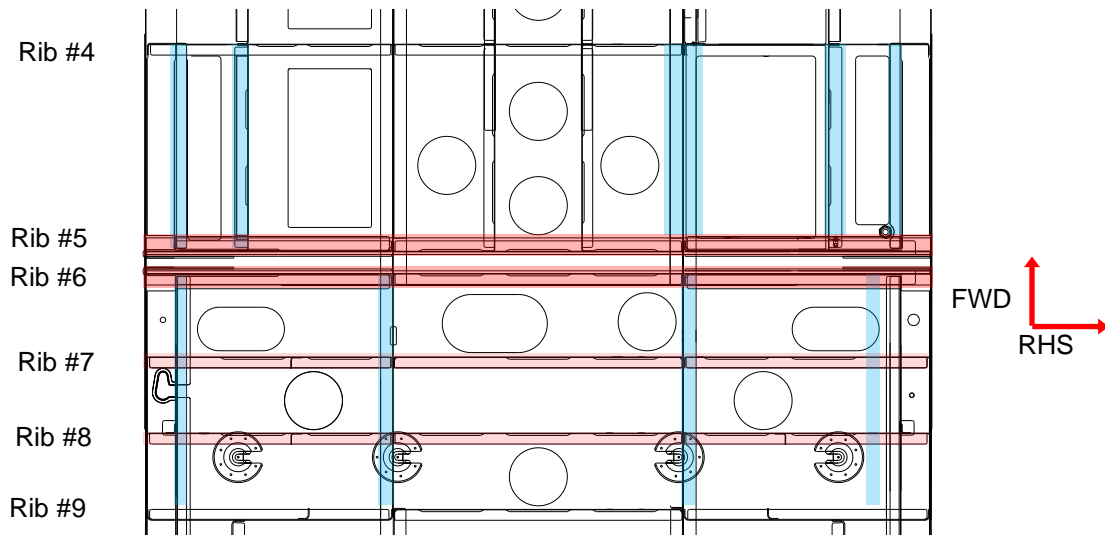
#### **CAUTION:**

**ENSURE THAT THE UNDERFLOOR STRUCTURE, FUEL SYSTEM AND ELECTRICAL SYSTEMS ARE NOT DAMAGED WHEN CUTTING OUT THE FLOOR SKIN.**

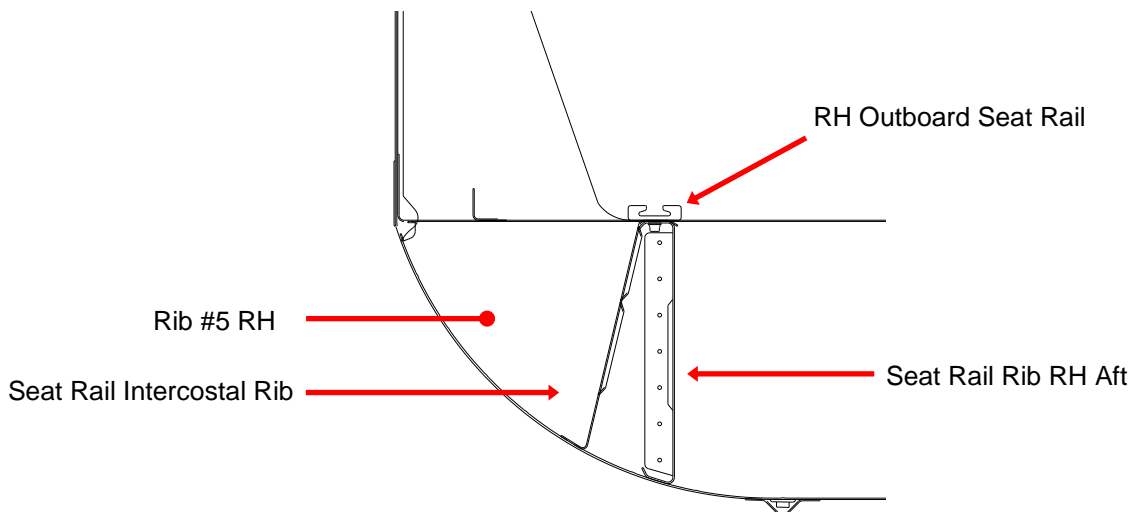
#### **NOTE:**

*Note the rivet types removed for the Cockpit Floor Skin, Seat Rail Intercostal Ribs and Seat Rail Rib Aft LH and RH. These rivet types must be used during re-installation.*

- De-riquet the Cockpit Floor Skin at Rib #5 and Rib #6 along entire skin width as shown in Figure 17.
- De-riquet the Cockpit Floor Skin at the underfloor intercostal locations between Rib # 4 and Rib #6 as shown in Figure 17. For the centre most two ribs, de-riquet only aft of the Centre Console Side Panels from where the Flap Lever Assembly was removed.
- De-riquet the LH Outboard, LH Inboard, RH Inboard and RH outboard seat rail attachment fasteners (nut-plate rivets) between Rib #4 and Rib #6 as shown in Figure 17.
- De-riquet and remove the Seat Rail Intercostal rib on the affected side (Figure 18).
- De-riquet and remove the Seat Rail Rib Aft LH and RH (GA8-532023-253 and -257) (Figure 18). This may require the removal of some PR1422 sealant on the forward flange. Ensure no damage to surrounding structure when removing sealant.



**Figure 17: Forward and Centre Floor Skin Rivet Removal.**



**Figure 18: Intercostal Rib location (RH shown, LH similar)**

### 12.3.6 De-riquet Centre Floor Skin and Rib #7 Assy

#### **CAUTION:**

**WHEN DRILLING OUT RIVETS THROUGH CENTRE FLOOR SKIN ENSURE NO CABLES, FUEL LINES OR BRAKE LINES ARE DAMAGED.**

#### **NOTE:**

*Before de-riqueting, note the rivet types used to fasten Centre Floor Skin and Rib #7 Assy. These rivet types must be used during re-installation.*

- a. De-riquet the Centre Floor Skin at Rib #6 and Rib #8 across entire width as shown in Figure 17.
- b. De-riquet the Centre Floor Skin at the Keel Beam and along the skin edge between Rib #6 and Rib #9 as shown in Figure 17.
- c. Note the location of the four seat anchor plates as shown in Figure 17 and carefully remove.
- d. Remove rivets from Belly Skin and Keel to de-riquet the outboard Rib #7 Assy (GA8-532013-021/-022) on affected side. If cables, fuel lines or brake lines penetrate Rib#7 Assy then slide the Rib Assy aft without damaging these items to provide further access to Rib #6. Otherwise remove the Rib #7 Assy.

### 12.3.7 Disconnect Fuel System

#### **WARNING:**

**ENSURE THAT ANY FUEL CONTAINED WITHIN THE LINES IS DRAINED PROPERLY AND THE AREA IS WELL VENTILATED.**

**ELECTRIC POWER TOOLS SHOULD NOT BE USED WITHIN THE AREA CONTAINING FUEL AND FUEL FUMES. SEE SERVICE MANUAL CHAPTER 28-00-10 FOR GENERAL PRECAUTIONS REGARDING FUEL SYSTEM MAINTENANCE**

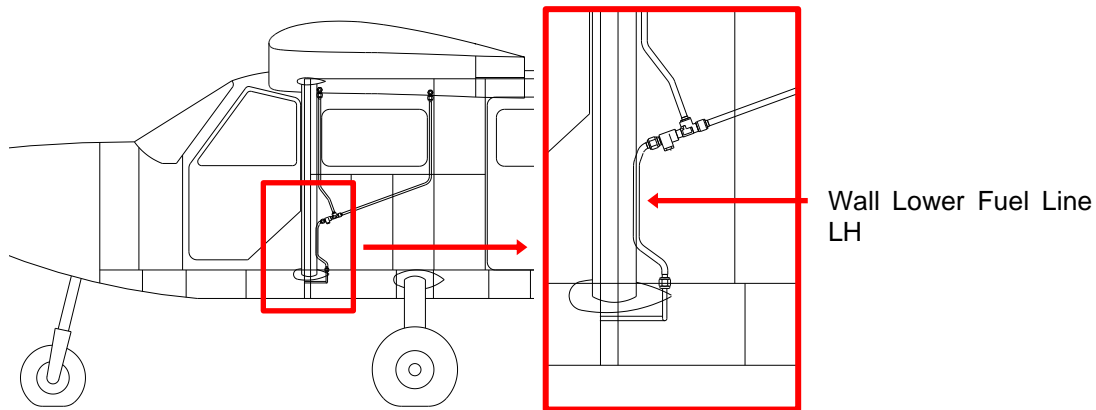
#### **CAUTION:**

**CAP DISCONNECTED LINES AND COVER CONNECTIONS TO PREVENT THREAD DAMAGE OR ENTRANCE OF ANY FOREIGN MATERIAL**

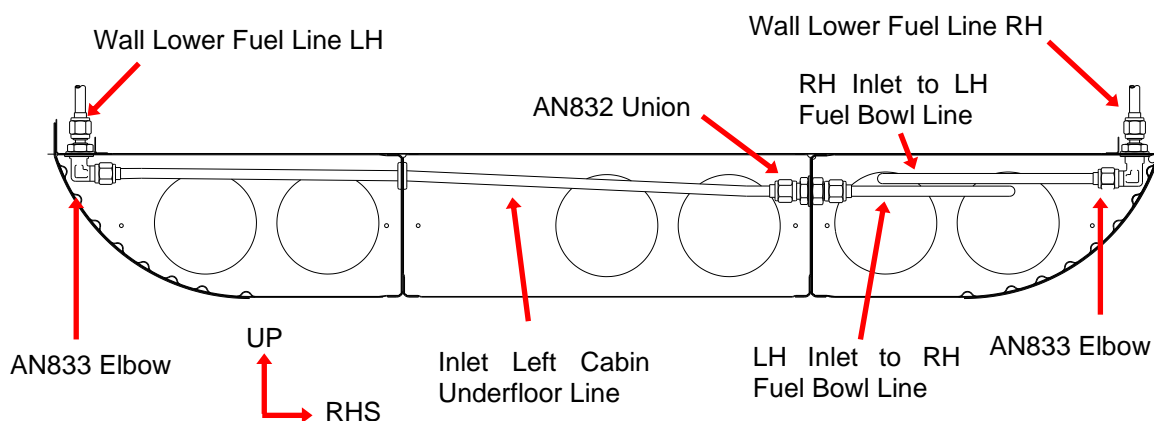
#### **NOTE:**

*Instructions include part numbers for the Mk II fuel system. These numbers may not be applicable in all cases and may be taken as reference information only when working on aircraft with the Mk I fuel system.*

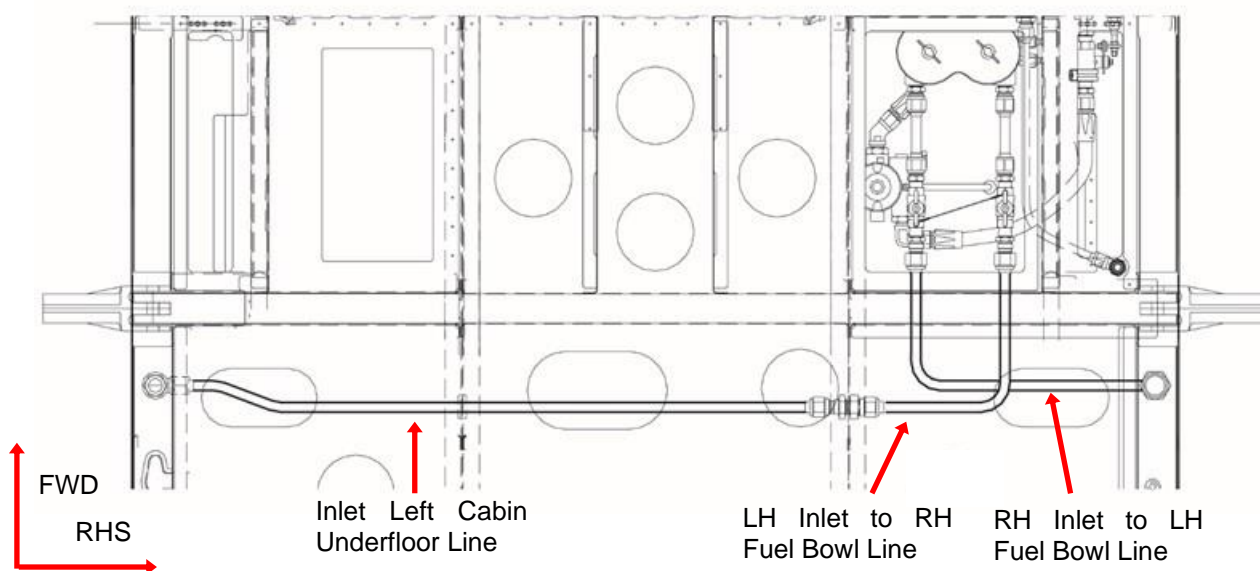
- a. Disconnect the upper and lower AN818 coupling nuts on the Wall Lower Fuel Line LH (GA8-282015-065, Figure 19).
- b. Remove the Wall Lower Fuel Line, LH.
- c. Disconnect the AN818 nut on the Inlet Left Cabin Underfloor Line (GA8-282013-109) from the AN833 Elbow fitting on the underfloor side of the RH Floor Attach Angle (GA8-533022-063, Figure 20).
- d. Disconnect and remove the AN924 nut and the AN833 Elbow fitting from the GA8-533022-063 Floor Attach Angle (Figure 20).
- e. Disconnect the LH Inlet to RH Fuel Bowl Fuel Line (GA8-282013-107) from the sump tank service valves (Figure 21).
- f. Disconnect the AN818 nuts from either side of the AN832 union at the RH Keel Beam penetration (Figure 20 and Figure 21).
- g. Remove the LH inlet to RH Fuel Bowl Line (GA8-282013-107, Figure 20 and Figure 21).
- h. Disconnect and remove the AN924 Nut and AN832 union at the RH keel beam penetration (Figure 20 and Figure 21).
- i. Slide the Inlet Left Cabin Underfloor Line (GA8-282013-109) through the Keel Beam penetration to the RH side as required to ensure clear access to the lower web of Rib #6 LH.



**Figure 19: LH Wall Lower Fuel Line location (RH Wall similar)**



**Figure 20: Fuel Lines - View Looking Forward Toward Rib #6.  
(Mk II Fuel system shown, Mk I similar)**



**Figure 21: Fuel Lines - Viewed from Above  
(Mk II Fuel system shown, Mk I similar)**

- j. Disconnect the upper and lower AN818 coupling nuts on the Wall Lower Fuel Line RH (GA8-282015-067, Figure 19).
- k. Remove the Wall Lower Fuel Line RH.

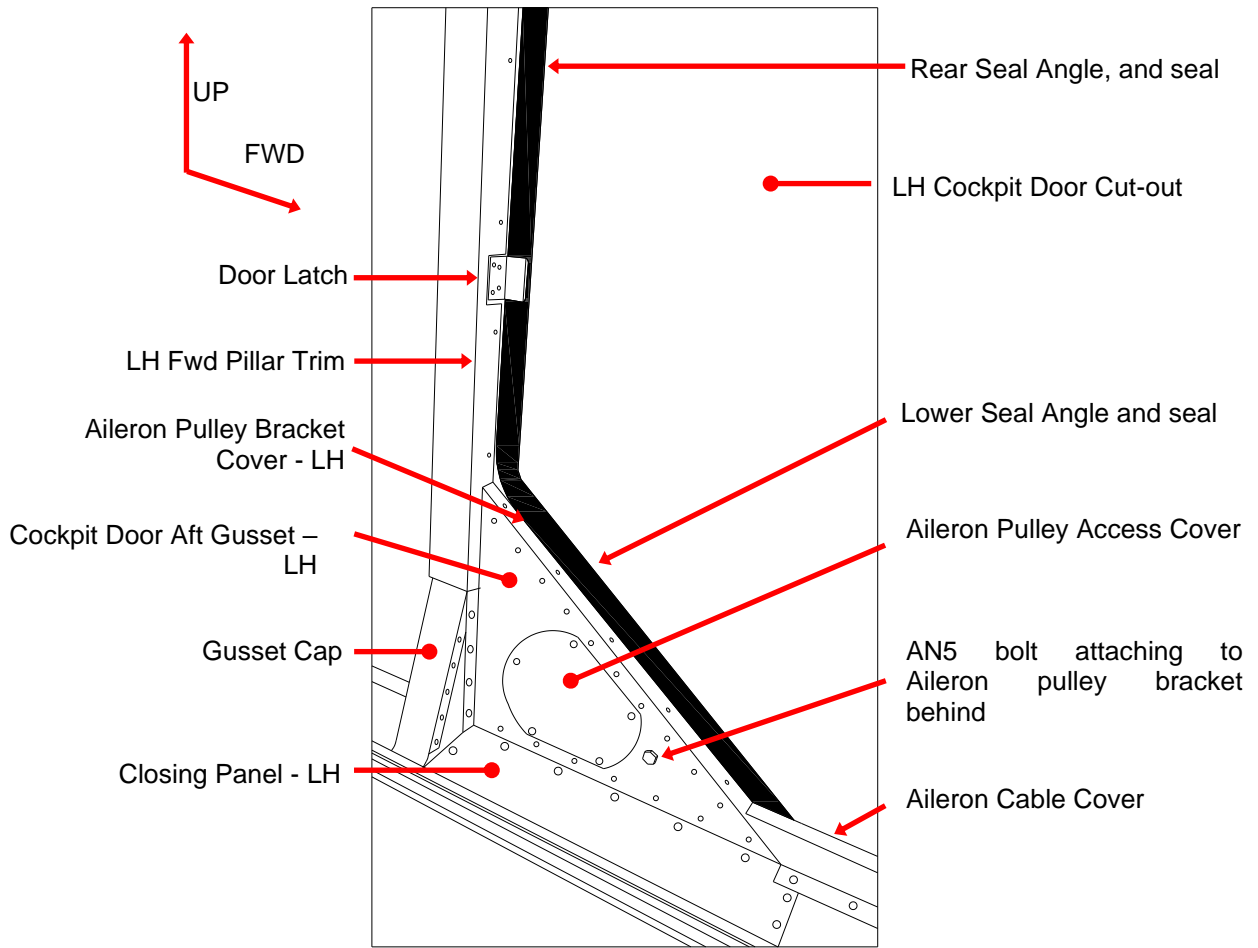
- l. Disconnect the AN818 nut of the RH Inlet to LH Fuel Bowl Line (GA8-282013-105) from the AN833 Elbow fitting on the underfloor side of the RH Floor Attach Angle (GA8-533022-064, Figure 20). Disconnect this fuel line from the sump tank service valves (Figure 21).
- m. Remove the RH Inlet to LH Fuel Bowl Line (Figure 20 and Figure 21).
- n. Disconnect and remove the AN924 nut and the AN833 Elbow fitting from the RH Floor attach angle (Figure 20).
- o. Disconnect the nuts on fuel lines attaching to the rear of the sump tank.
- p. Remove all fuel lines, boost pumps and valves installed in the bay immediately outboard of the RH Keel and aft of the sump tank, to allow access for installing rivets to Rib #5 RH.
- q. For aircraft with the Mk I fuel system, remove the fuel strainer bowls.
- r. For aircraft with the Mk II fuel system, remove the fuel strainer bowl only if required, by removing the screws attaching to the studs at the rear of the Sump Tank. Cover the Sump Tank opening to avoid foreign material entering.
- s. De-rivet the Fuel Pipe Hanger Bracket (GA8-532021-227) from Rib #5 RH.

### 12.3.8 Remove Sidewall and Floor Components at Rib #5 LHS

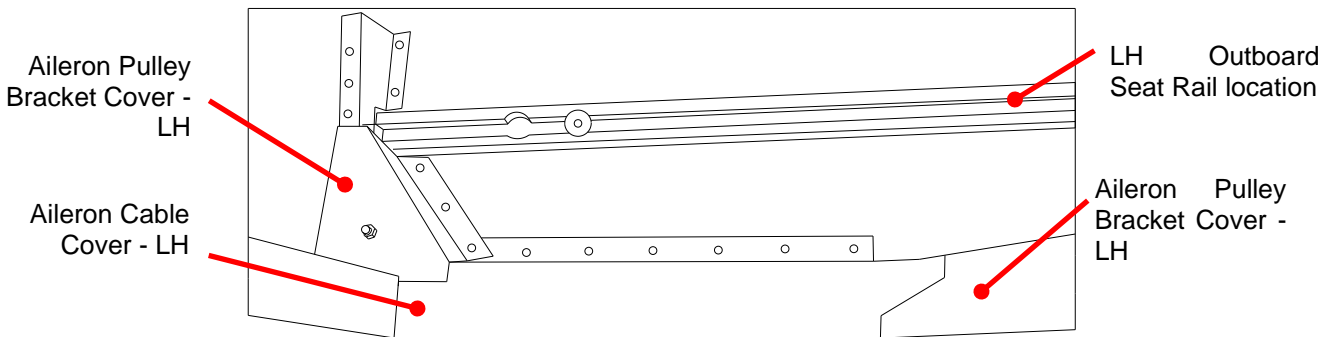
**NOTE:**

*Note the types and diameters of any fasteners removed as the same fastener types must be used during re-installation.*

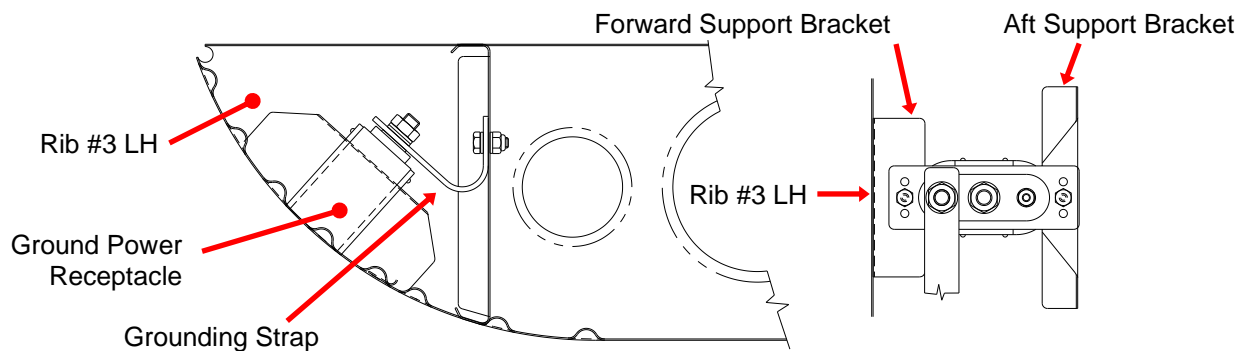
- a. Remove the LH Fwd Pillar Trim (GA8-252025-093, Figure 22).
- b. Remove the Rear Seal Angle (GA8-534027-023), Lower Seal Angle (GA8-534027-025) and the seals attached to them, to provide access to the Aileron Pulley Bracket Cover -LH (GA8-533022-091, Figure 22).
- c. Remove the upper CR3212-4 rivet(s) attaching the Aileron Pulley Bracket Cover-LH to the Main Spar Side Pillar Assembly.
- d. Remove the Aileron Pulley Access Cover (GA8-533022-171, Figure 22).
- e. Remove the AN5 bolt from aileron pulley bracket and remove spacer at rear of the Cockpit Door Aft Gusset – LH (GA8-533022-087, Figure 22).
- f. Remove the solid rivets (MS20470AD4-3.5) attaching the lower LHS edge of the Cockpit Door Aft Gusset – LH to the Aft Cockpit Floor Attach Angle (GA8-533022-059).
- g. Remove the blind rivets (CR3213-4-2) attaching the forward edge of the Cockpit Door Aft Gusset – LH to the Aileron Pulley Bracket Cover (GA8-533022-091).
- h. Remove the blind rivets (CR3213-5-3 and CR3213-5-2) attaching the aft flange of the Cockpit Door Aft Gusset – LH to Rib #5 (GA8-532023-038 or -303).
- i. Remove the Cockpit Door Aft Gusset - LH (Figure 22).
- j. The Aileron Pulley Bracket Cover – LH (GA8-533022-091), Aileron Cable Cover – LH (GA8-531021-041) and the Aileron Pulley Bracket Cover – LH (GA8-531021-043) must be removed (Figure 22 and Figure 23). This will involve removing the attaching screws and rivets (including rivets from the Cockpit Side Skin).
- k. Remove the Gusset Cap (GA8-533028-049, Figure 22).
- l. Remove the terminals connected to the Ground Power Receptacle in the floor cavity forward of Rib #5 LH.
- m. Remove grounding strap from the Ground Power Receptacle (See Figure 18).
- n. Disconnect the bolts attaching the Ground Power Receptacle to the Fwd and Rear Support Brackets.
- o. Remove the Ground Power Receptacle (See Figure 24).
- p. De-rivet and remove the Aft Support Bracket (See Figure 24).



**Figure 22: Cockpit Door Aft gusset – Component Removal at Rib 5 LHS**



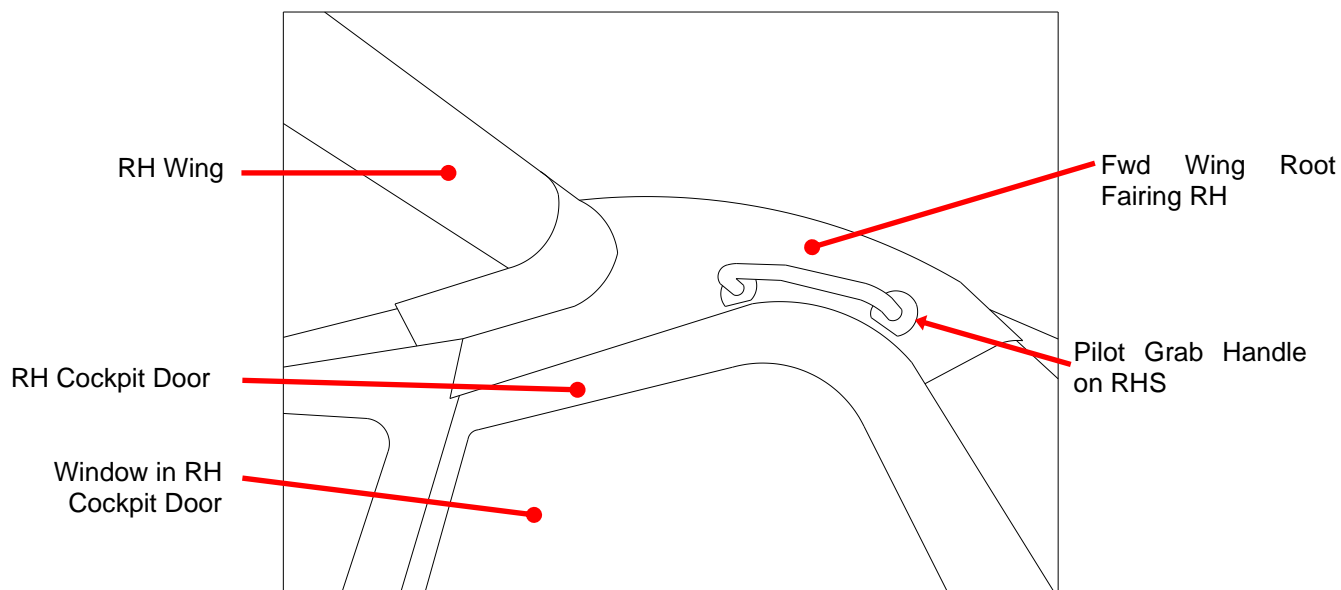
**Figure 23: Structure Forward of Aileron Pulley Bracket Cover.**



**Figure 24: Ground Power Receptacle location**

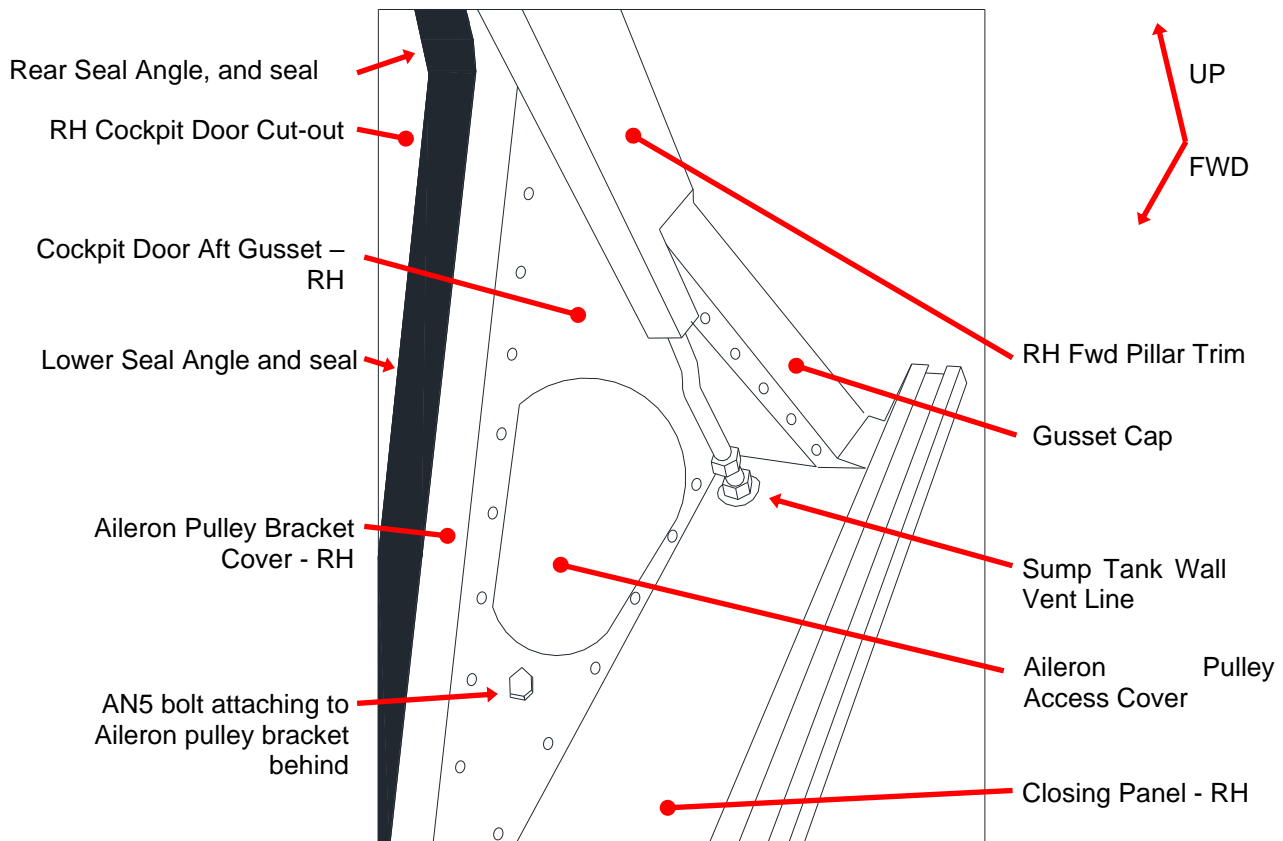
### 12.3.9 Remove Sidewall and Floor Components at Rib #5 RHS

- a. Do the following steps after completing Section 12.3.8.
- b. Remove the Pilot Grab Handle (GA8-531022-013) on the RHS of the aircraft (Figure 25).
- c. Remove the Fwd Wing Root Fairing RH (GA8-571019-014, Figure 25).



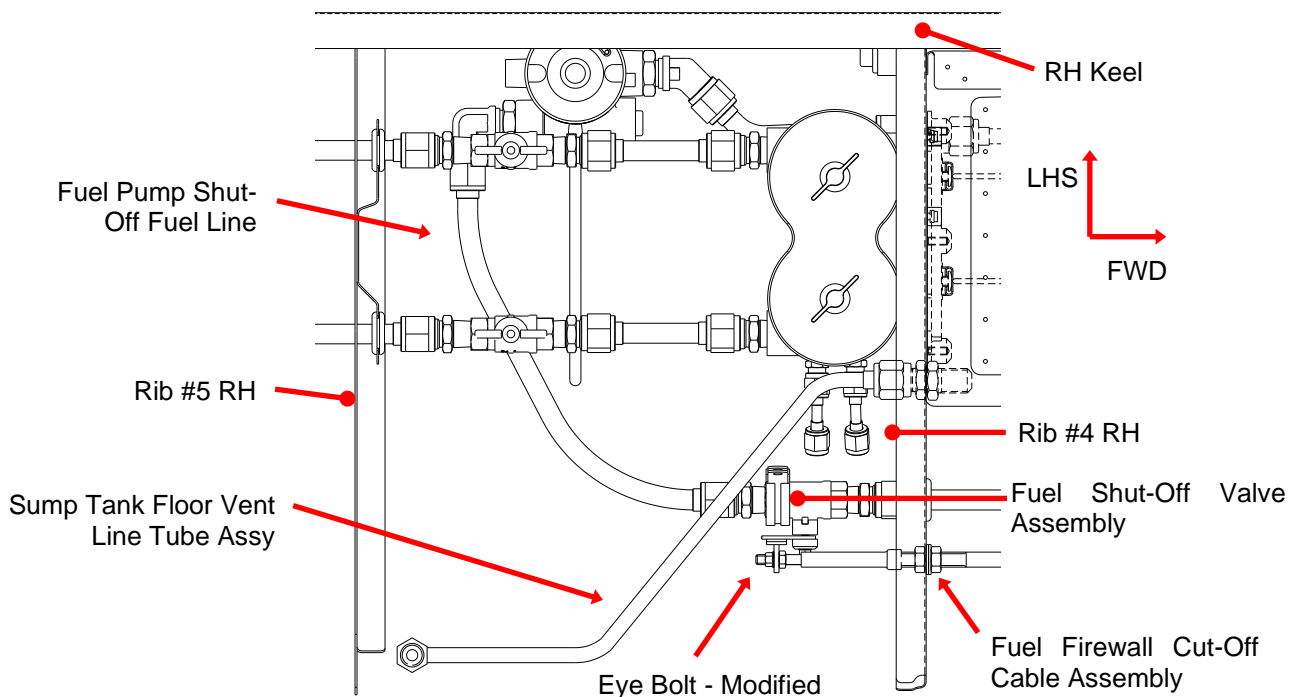
**Figure 25: RHS Fwd Wing Root Fairing and Pilot Grab Handle locations**

- d. Remove the RH Fwd Pillar Trim (GA8-252025-095, Figure 26).
- e. Disconnect the AN818 nuts attaching the Sump Tank Wall Vent Line (GA8-282015-029) at the cockpit floor and wing root areas (Figure 26).
- f. Remove the Sump Tank Wall Vent Line.
- g. Disconnect the AN818 nuts attaching the Sump Tank Floor Vent Line Tube Assy (GA8-282013-119), which is in the sub-floor area directly below the Sump Tank Wall Vent Line location. (Figure 27).
- h. Remove the Sump Tank Floor Vent Line Tube Assy (Figure 27).
- i. Remove the AN833 Elbow Fitting and AN924 nut from the floor skin.
- j. Remove the Aileron Pulley Access Cover (GA8-533022-171, Figure 26).
- k. Remove the Rear Seal Angle (GA8-534027-024), Lower Seal Angle (GA8-534027-026) and the seals attached to them, to provide access to the Aileron Pulley Bracket Cover - RH (GA8-533022-092, Figure 26).
- l. Remove the upper CR3212-4 rivet(s) attaching the Aileron Pulley Bracket Cover to the Main Spar Side Pillar Assembly.
- m. Remove the AN5 bolt from aileron pulley brackets and remove spacer at rear of the Cockpit Door Aft Gusset – RH (GA8-533022-088).
- n. Remove the solid rivets (MS20470AD4-3.5) attaching the lower edge of the Cockpit Door Aft Gusset – RH to the Aft Cockpit Floor Attach Angle (GA8-533022-060).
- o. Remove the blind rivets (CR3213-4-2) attaching the forward edge of the Cockpit Door Aft Gusset – RH to the Aileron Pulley Bracket Cover (GA8-533022-092).
- p. Remove the blind rivets (CR3123-5-3 and CR3213-5-2) attaching the aft edge of the Cockpit Door Aft Gusset – RH to Rib #5 (GA8-532023-39 or -304).
- q. Remove the Cockpit Door Aft Gusset – RH (Figure 26).
- r. The Aileron Pulley Bracket Cover – RH (GA8-533022-092), Aileron Cable Cover – RH (GA8-531021-042) and the Aileron Pulley Bracket Cover – RH (GA8-531021-044) must be removed (Figure 23 and Figure 26) This will involve removing the attaching screws and rivets (including rivets from the Cockpit Side Skin).
- s. Remove the Gusset Cap (GA8-533028-049, Figure 26).



**Figure 26: Cockpit Door Aft gusset – Component Removal at Rib 5 RHS**

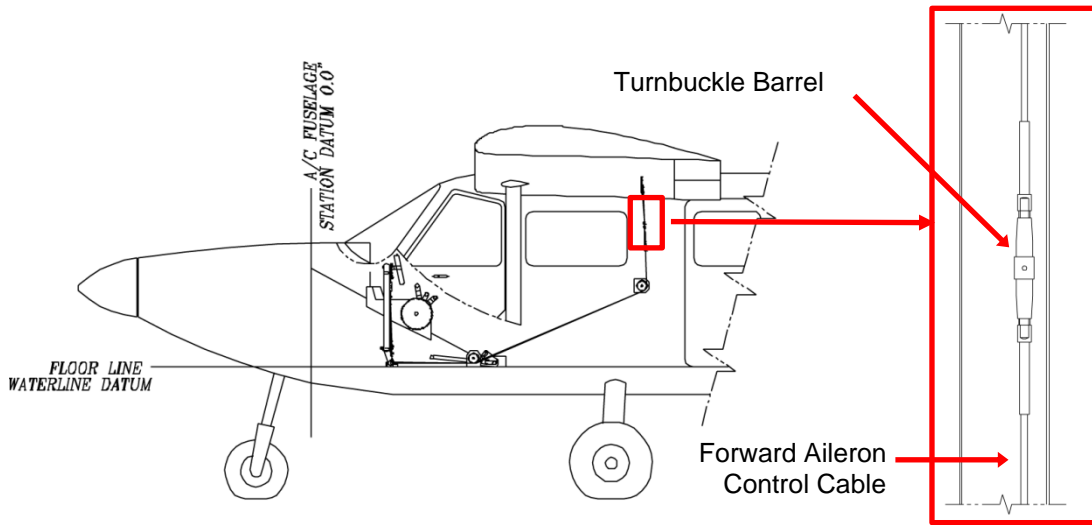
- t. Remove the Eye Bolt – Modified (GA8-282029-025) attaching the Fuel Firewall Cut-off Cable Assembly (GA8-762012-011) from Fuel Shut-off Valve Assembly (Figure 27).
- u. Disconnect the nut attaching the Fuel Pump Shut-Off Fuel Line to the Fuel Pump (Figure 27).
- v. Disconnect the nut attaching the Fuel Shut-Off Valve Assembly from Rib #4 RH (Figure 27).
- w. Remove the Fuel Shut-Off Valve Assembly and Fuel Pump Shut-off Fuel Line.



**Figure 27: Sump Tank Floor Vent Line Tube Assy location – viewed from above  
(MK II fuel system shown, MK I fuel system similar, some detail is removed for clarity)**

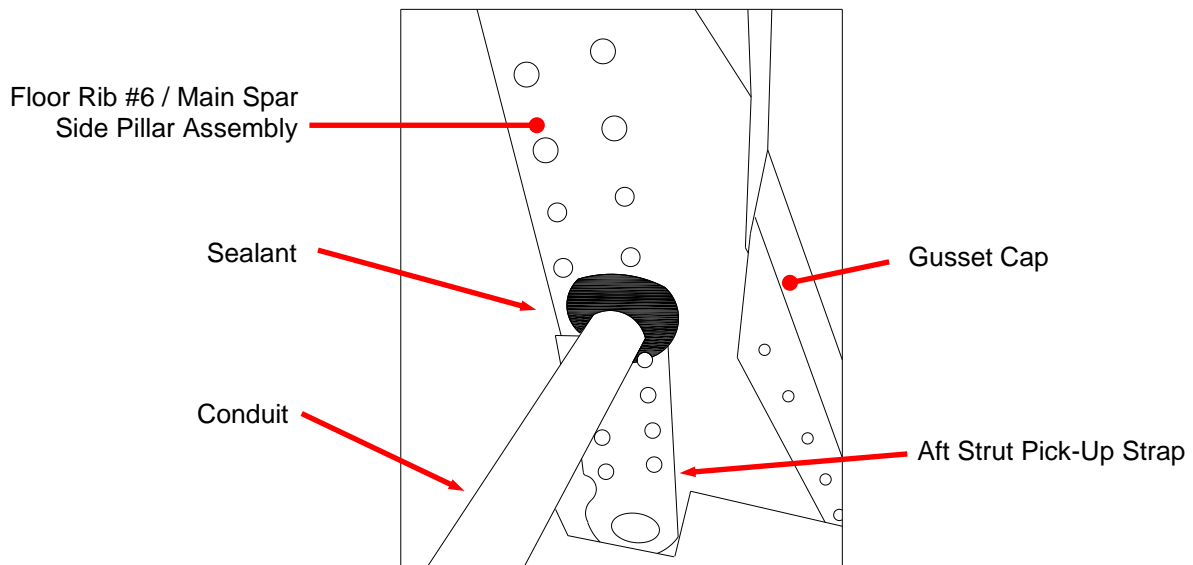
### 12.3.10 Remove Forward Aileron Cable and Conduit

- a. Carefully disconnect the forward aileron control cables (GA8-271011-011) from the turn-buckle barrel in the wall structure. Pull cable through the conduit and forward of Floor Rib # 5 (Figure 28).



**Figure 28: Aileron cable disconnect location**

- b. Remove the sealant surrounding the conduit at the penetrations of Rib #5 and #6 (Figure 29) and at the aft end of the conduit.
- c. Remove conduit and retain.



**Figure 29: Forward Aileron Cable Conduit and Sealant**



### 12.3.11 Disconnect Wiring Looms and Pitot-Static

- a. The electrical wiring loom passes through Rib #5 and #6 LH and RH. To facilitate the removal of these ribs and installation of replacement ribs, the electrical wiring may be moved be clear of these ribs. Alternately, Section 12.3.18 gives a procedure for modifying the new ribs, allowing them to be installed without affecting the wiring looms or pitot-static system. Installers may select their preferred method of installation.

#### **CAUTION**

#### **TAKE CARE WHEN CUTTING CABLE-TIES AND AVOID DAMAGE TO WIRES.**

- b. Remove LHS trim to left of pilot foot well.
- c. Remove flight instrument panel.
- d. Remove kick panel.
- e. Lower and secure the electrical overhead panel.
- f. Note which systems are included in the looms passing through Rib #5 and Rib #6.
- g. Disconnect any wiring looms (including coaxial cables) which pass through the ribs. Disconnections may be made FWD or AFT of the ribs as required.
- h. Where required, connectors may be de-pinned. Ensure de-pinned connector housings and pins are clearly labelled for re-assembly.
- i. Pull disconnected looms clear of Rib #5 and Rib #6.
- j. Cap and stow cable ends.

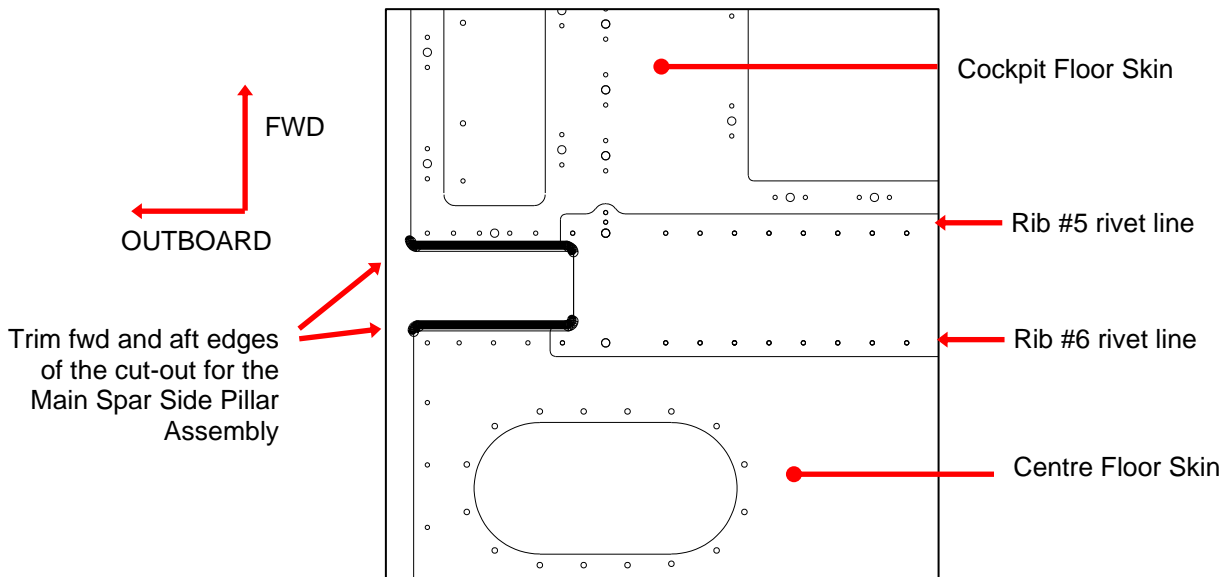
#### **CAUTION**

#### **TAKE CARE TO AVOID KINKING COAXIAL CABLES.**

- k. The Pitot-Static tubes passes through Rib #5 and #6 LH. To facilitate the removal of these ribs and installation of replacement ribs, the sense tubes shall be moved be clear of these ribs. See Chapter 34-10-00 of the GA8 and GA8-TC 320 or GA8-TC 320 Service Manual for pitot static layout.
- l. If there is a Pitot-Static Drain in the underfloor area behind Rib #7 LH, then disconnect the sense tubes on the cockpit side and pull sense tubes forward of Rib #5.
- m. If there is no Pitot Static drain, then disconnect the Pitot-Static sense tubes from the connector in the LH wing root and pull sense tubes forward along their current path until ultimately forward of Rib #5.
- n. All open pitot or static lines shall be covered with tape to prevent ingress of contaminants (eg dust, moisture).
- o. Stow lines out of the way so that work may be completed on the Ribs.

### 12.3.12 Trim Floor Skin around Main Spar Side Pillar Assembly

- a. Trim aft edge of Cockpit Floor Skin by 0.100" +/- 0.005" as shown in Figure 30.
- b. Trim forward edge of Centre Floor Skin by 0.100" +/- 0.005" as shown in Figure 30.
- c. De-burr and finish all blended edges with a Scotch-Brite® pad or similar to achieve a surface finish of at least 125 microinch Ra (3.2 micron Ra).
- d. Prime the exposed metal using Compound C1 (Table 7).



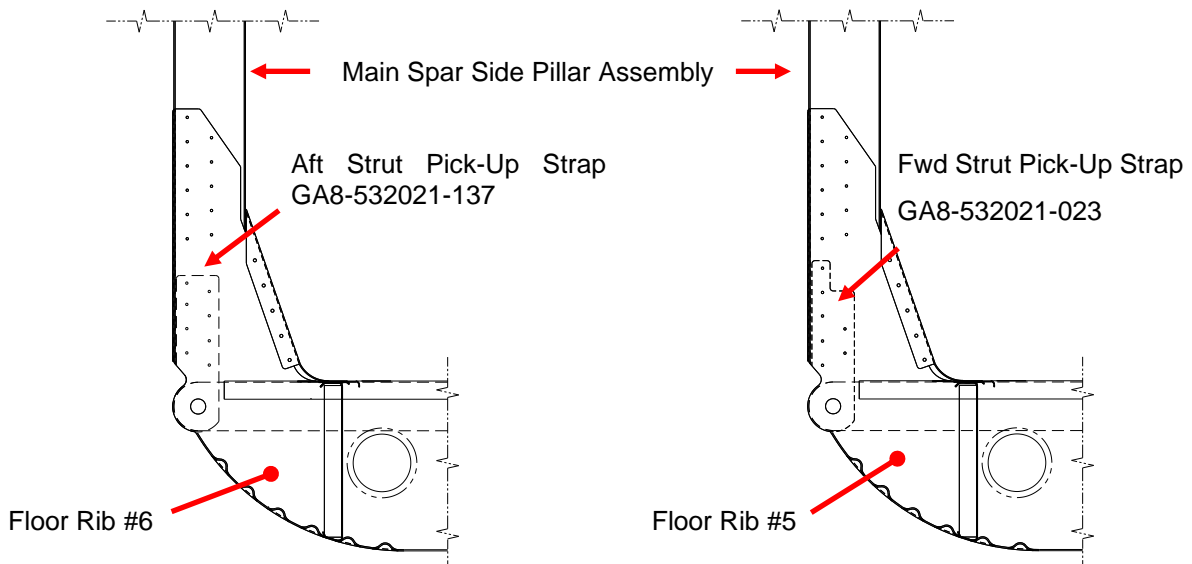
**Figure 30: Floor Skin to be Trimmed. LHS Shown, RHS Opposite.**

### 12.3.13 Remove Pick-Up Straps from Rib #5 and #6

**CAUTION:**

**ENSURE THAT RIBS AND MAIN SPAR SIDE PILLAR REMAIN DAMAGE FREE WHEN REMOVING THE PICK-UP STRAPS. WHEN REMOVING ALUMINIUM RIVETS FROM THE RIB OR STRAPS, DO NOT DRILL THROUGH THE RIB OR STRAPS. DRILL THROUGH THE RIVET HEAD ONLY AND CAREFULLY DRIVE THE RIVET SHANK OUT OF THE PART WITH A PIN PUNCH OF A SMALLER DIAMETER THAN THE RIVET SHANK.**

- a. Remove the Fwd and Aft Strut Pick-Up Straps (GA8-532021-023 and -137) (See Figure 24) and retain.



**Figure 31: Strut Pick-up Strap locations**

### 12.3.14 Remove Rivets from Ribs #5 and #6

- a. Remove the machined Inboard Fitting from the rear of Rib #6.

**CAUTION:**

**WHEN REMOVING ALUMINIUM RIVETS FROM THE RIB OR STRAPS, DO NOT DRILL THROUGH THE RIB OR STRAPS. DRILL THROUGH THE RIVET HEAD ONLY AND CAREFULLY DRIVE THE RIVET SHANK OUT OF THE FLANGE WITH A PIN PUNCH OF A SMALLER DIAMETER THAN THE RIVET SHANK.**

**CAUTION:**

**WHEN DRILLING OUT RIVETS THROUGH KEEL ENSURE NO CABLES, OR BRAKE LINES ARE DAMAGED.**

**NOTE:**

*Note the rivet types removed from Ribs #5 and #6. These rivet types must be used during re-installation.*

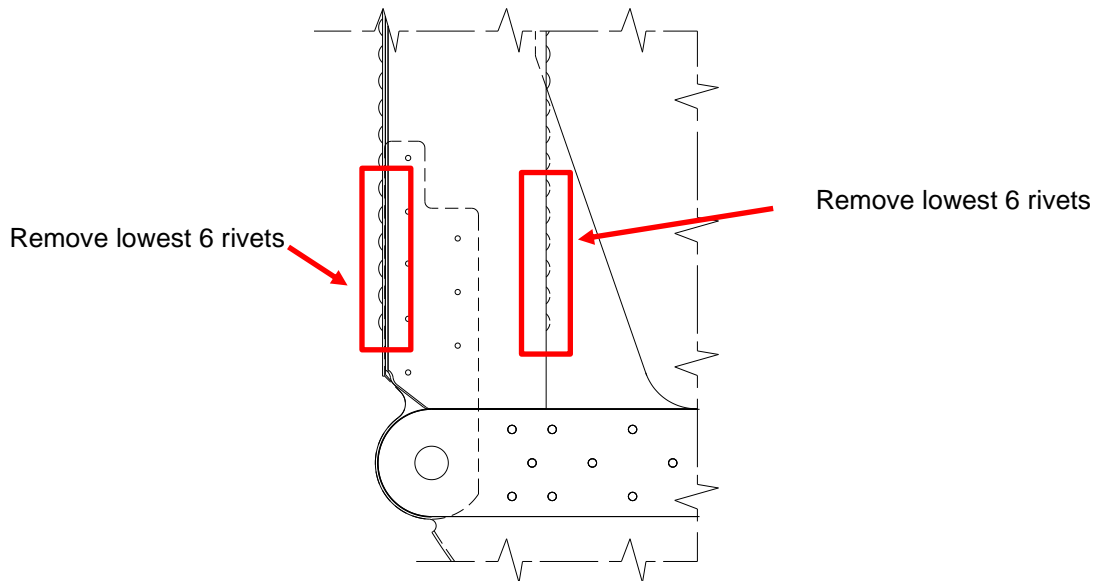
**CAUTION:**

**TO MAINTAIN AIRCRAFT ALIGNMENT, REMOVE ONLY ONE RIB AT A TIME.**

- b. Remove all rivets attaching Ribs #5 and #6, including through Long, Short and Intermediate Straps, Main Spar Side Pillar Assembly, Belly Skin, Floor Attach Angle, and also the Keel.
- c. Remove Ribs #5 and #6, and the Floor Attach Angle.

### 12.3.15 Remove Rivets from Main Spar Pillar

- a. On both the left and right side of the aircraft, remove the bottom 6 rivets from the lower end of the Main Spar Pillar on the inside and the outside of the cabin (Figure 32).



**Figure 32: Main Spar Side Pillar Rivets**

### 12.3.16 Transfer Holes to Large and Small Doublers and Ribs #5 and #6

**CAUTION:**

**ENSURE THAT HOLES ARE NOT OVERSIZED OR DAMAGED WHEN MATCH DRILLING HOLES THROUGH THE RIBS AND/OR DOUBLERS.**

**NOTE:**

*Use the 0.625" hole as the primary datum to locate and position a Pick-Up Strap. Keep the vertical edge of a Pick-Up Strap parallel to the Large and Small Doubler edges when locating and transferring fastener holes.*

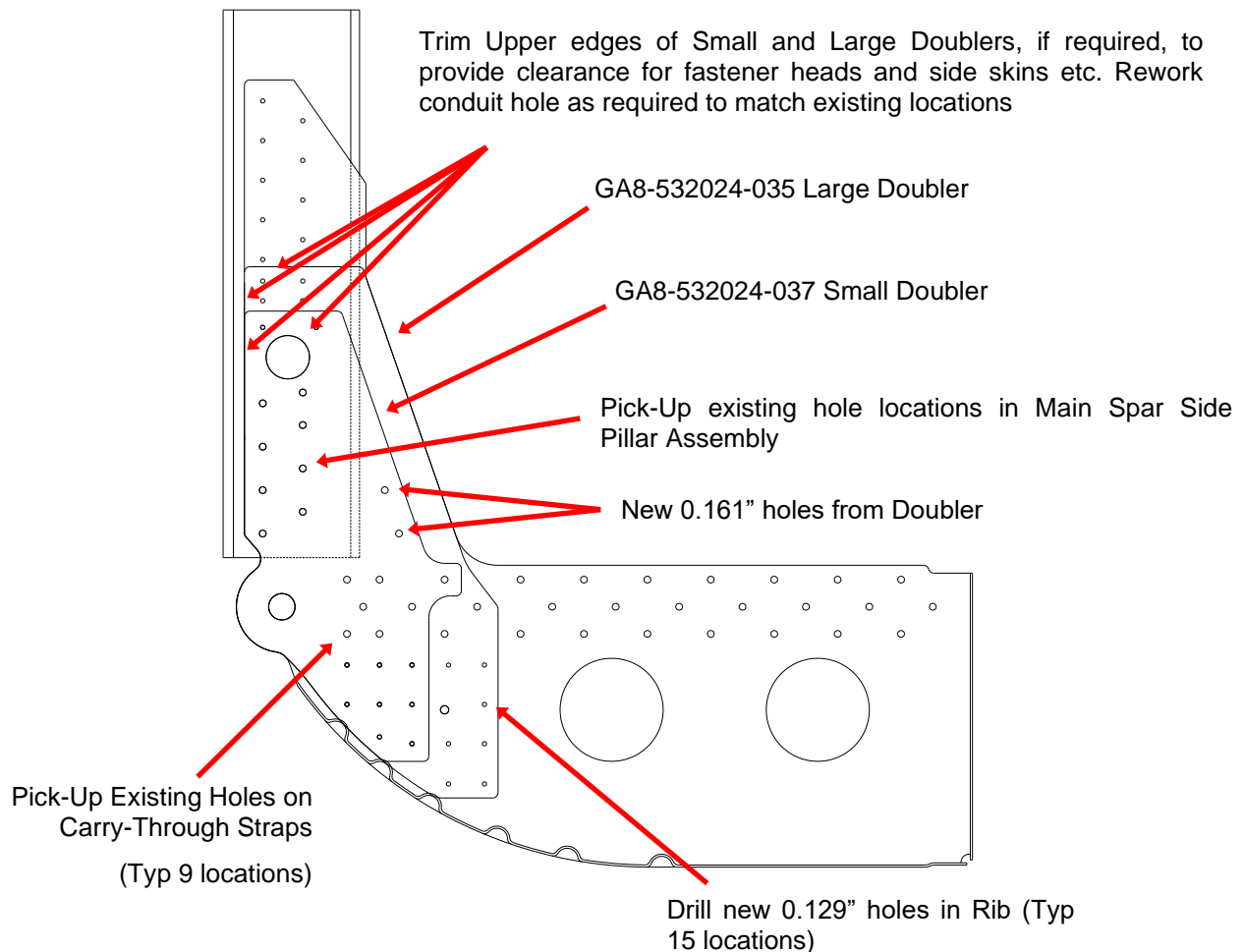
- a. Put the removed Fwd Pick-Up Strap removed in Section 12.3.13 together with Large and Small Doublers (GA8-532021-253/-255/-257/-259) so the 0.625" holes align.

- b. Put the removed Aft Pick-Up Strap removed in Section 12.3.13 together with Large and Small Doublers (GA8-532024-031/-033/-035/-037) so the 0.625" holes align.
- c. Where required, match drill fastener hole locations and diameters from the Fwd and Aft Strut Pick-Up Straps to the Large and Small Doublers (GA8-532024-031/-033/-035/-037).
- d. Position replacement Ribs #5 and Rib #6 and temporarily install the wing strut attachment bolt to ensure the lug bore of the Ribs are concentric with the Carry-Through Straps and clamp the Ribs in position.
- e. Match drill holes to the replacement Ribs #5 and #6 at existing locations in the Long Carry-Through Straps, Main Side Spar Pillar Assembly, Keel and Belly Skin (Figure 33). De-burr all new holes.

**NOTE:**

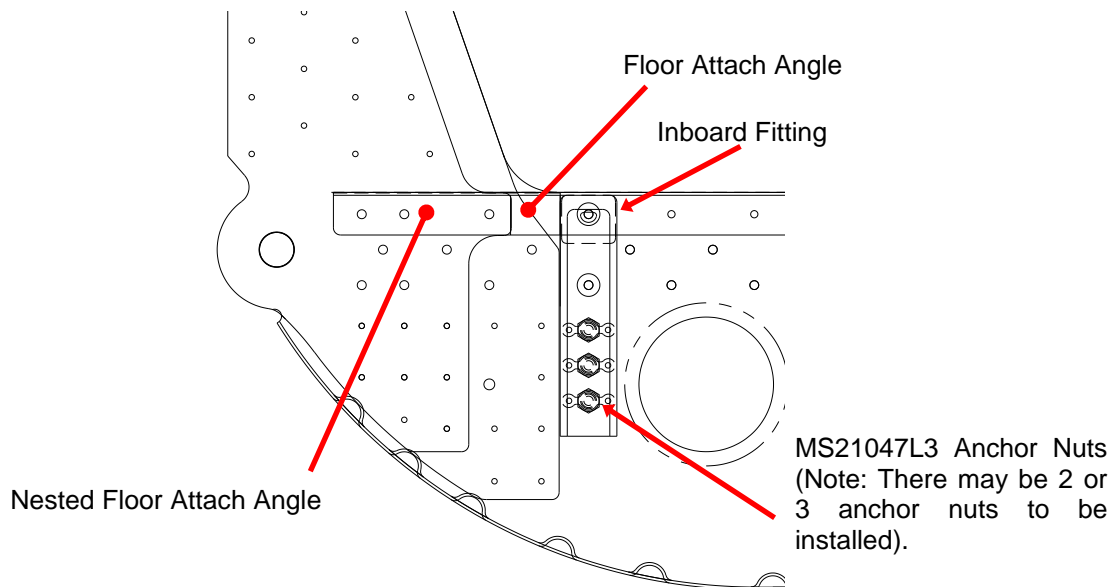
*5/32" solid rivet hole diameter: 0.156" to 0.171" (0.159", #21 drill recommended)  
1/8" solid rivet hole diameter: 0.125" to 0.135" (0.128", #30 drill recommended)*

- f. Mark location of the Conduit Hole in the Main Spar Pillar Assembly onto Ribs #5 and #6.
- g. Pin the Seat Rail Rib Aft – LH and RH, in position on belly skin and Rib #4. Match drill holes from the rear flange of the Seat Rail Ribs to the replacement Rib #5. De-burr all new holes.
- h. Position the Large Doubler on replacement Rib #5 or #6 (Figure 33) and temporarily install the wing strut attachment bolt to ensure the lug bore of the doublers are concentric with the Rib and Carry-Through Straps and clamp the doubler in position.
- i. Match drill holes to the Large Doubler at existing strap locations in the Rib.
- j. Mark location of the Conduit Hole in the rib onto the Large Doubler.
- k. Drill new holes using a #20 drill, to a diameter of 0.161", into the replacement Ribs #5 and #6 using the pilot hole locations of the Large Doublers which exist above the floor skin water-line (Figure 33).
- l. Drill 15 new holes, using a #30 drill, to a diameter of 0.129", through the lower web of the replacement Rib #5 and #6 using the pilot hole locations in the Large Doublers below the floor skin water-line (Figure 33).
- m. Remove the Large Doublers. If required, enlarge the conduit hole in each Large Doubler to match and deburr all new holes.
- n. Transfer hole locations from the Large Doubler to the Small Doubler, ensuring that the lug bores of each doubler are concentric and the outboard vertical edges are aligned.
- o. De-burr all new holes.



**Figure 33: Typical installation of Large and Small Doublers**

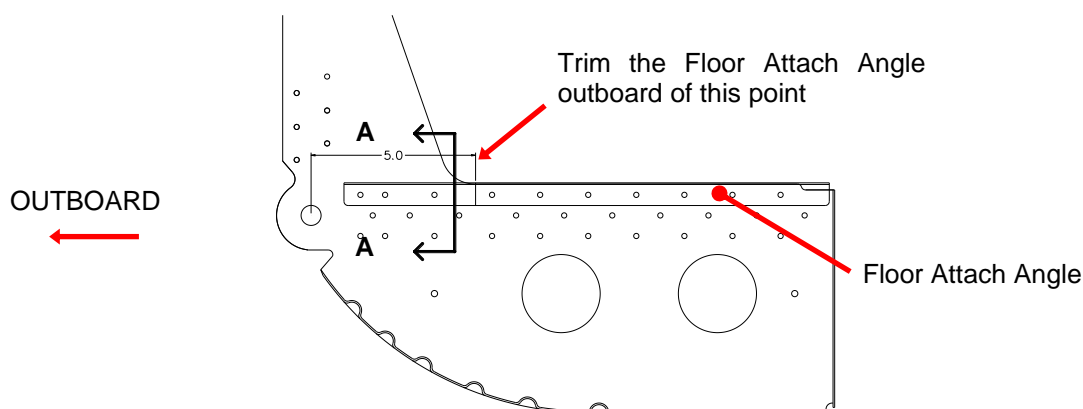
- p. If extended seat rails are installed, do the following steps:
- i. Pin the Floor Attach angle to Rib #6.
  - ii. Place the Inboard Fitting removed in 12.3.14 below the Floor Attach Angle and against Rib #6. Temporarily install an existing seat rail mounting screw through the rear seat rail attachment hole and into the inboard fitting to fasten the inboard fitting up against the skin/trim angle (Figure 34).
  - iii. Back-drill holes from the inboard fitting into Rib #6 using a #11 drill to a diameter of 0.191".
  - iv. Remove the inboard fitting.
  - v. Remove Rib #6 and Floor Attach Angle and de-burr holes.
  - vi. Place an MS21047L3 Anchor nut over each of the 0.191" holes, and using it as a template, back-drill the two rivet holes into Rib #6 using a #40 drill to a diameter of 0.098" (Figure 34).
  - vii. Countersink these 0.098" holes on the Inboard Fitting side of the Rib, to a depth to suit the head of an MS20426AD3 rivet.
  - viii. Install the MS21047L3 anchor nuts to Rib #5 using MS20426AD3 rivets (assess rivet length on installation, Figure 34).



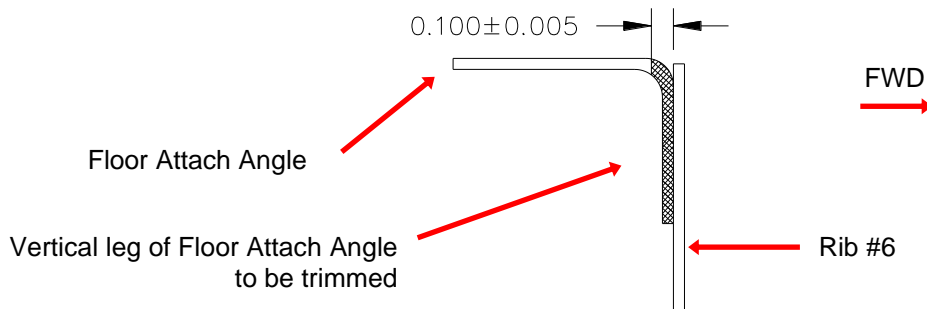
**Figure 34: Inboard Fitting anchor-nut installation**

### 12.3.17 Trim Floor Attach Angle and Fit Nested Angle

- i. Trim away  $0.100'' \pm 0.005''$  on the outboard end of the vertical leg of the Floor Attach Angle (GA8-532021- 33/34) as shown in hatched area of Figure 36 for a length of  $5.0'' \pm 0.100''$  inboard of the rib lug end bore (Figure 35).
- ii. De-burr and finish all blended edges with a Scotch-Brite® pad or similar to achieve a surface finish of at least 125 microinch Ra (3.2 micron Ra).
- iii. Prime exposed metal using Compound C1 (Table 7).
- iv. Pin the Floor Attach Angles (GA8-532021- 33/34) to the ribs.
- v. Fit a Floor Attach Nested Angle (GA8-532024-029) under the horizontal flange of the floor attach angle at each Rib location (Figure 34).
- vi. Match drill the  $5/32''$  holes, at  $0.161''$  diameter, (Figure 34) from the Rib to Carry-Through Strap attachment locations to the vertical flange of the Floor Attach Nested Angle.
- vii. Match drill the holes from the Floor Attach Angle horizontal flange to the horizontal flange of the Floor Attach nested Angle.
- viii. Remove the Floor Attach Nested Angle and de-burr holes



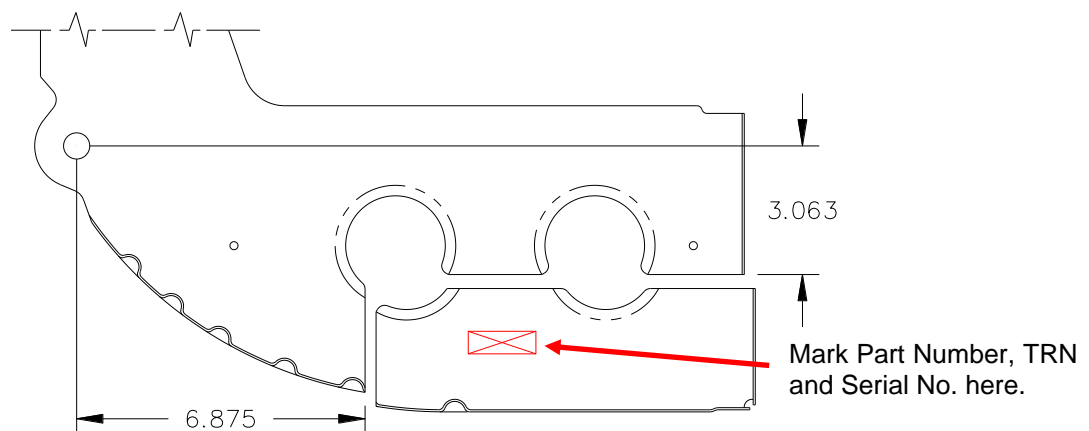
**Figure 35: Trimming of Floor Attach Angle.**



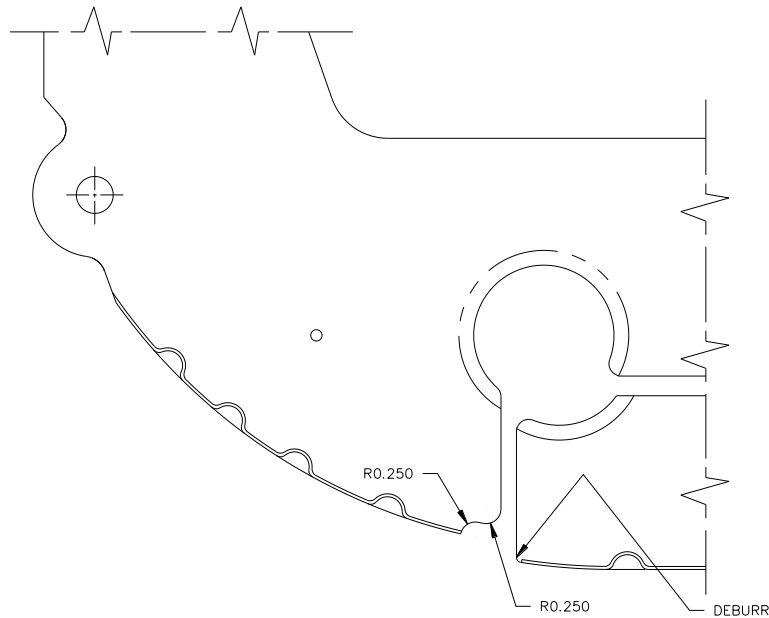
**Figure 36: Section A-A. Trimming of Floor Attach Angle - Side View of Rib #6.**

### 12.3.18 Modify Ribs for Installation

- a. To allow the replacement ribs to be installed without removing all affected aircraft services (wiring looms etc.), the replacement ribs may be cut and then re-assembled in the floor. The instructions below assume that all ribs are modified so steps affecting the RH ribs may be omitted when only modifying LH ribs. The following configurations are acceptable:
  - i. No ribs modified.
  - ii. Modified LH Rib 5 and 6 only
  - iii. Modified RH Rib 5 and 6 only
  - iv. Modified LH and RH Rib 5 and 6.
- b. Make a note of the details (part number, trace number and serial number) for each rib.
- c. Locate the doublers on the ribs as shown in Figure 41 and Figure 42. Transfer the hole locations from the doublers to the ribs. Drill ribs and doublers to a pilot hole size (0.098" nominal).
- d. Cut the parts as shown in Figure 37. De-burr and finish all blended edges with a Scotch-Brite® pad or similar to achieve a surface finish of at least 125 microinch Ra (3.2 micron Ra).
- e. Remove the remains of the flute from the rib and de-burr as shown in Figure 38. Finish all blended edges with a Scotch-Brite® pad or similar to achieve a surface finish of at least 125 microinch Ra (3.2 micron Ra).
- f. Temporarily place the rib assemblies into the aircraft. Transfer the hole locations from the inboard end flange of the ribs to the new Doubler #3 (P/No. GA8-532024-067 thru -070). Remove ribs from the aircraft. Ensure at least 0.313" edge distances in all cases, then drill marked holes to suit existing hardware.
- g. For P/No. GA8-532024-067 and GA8-532024-068, transfer the four lowest holes from the Seat Rail Rib Aft (Figure 18) to the doubler. Ensure at least 0.313" edge distances in all cases, then drill marked holes to suit existing hardware.
- h. Prime exposed metal on all components using Compound C1 (Table 7).



**Figure 37: Rib Modification**



**Figure 38: Rib Clean-Up**

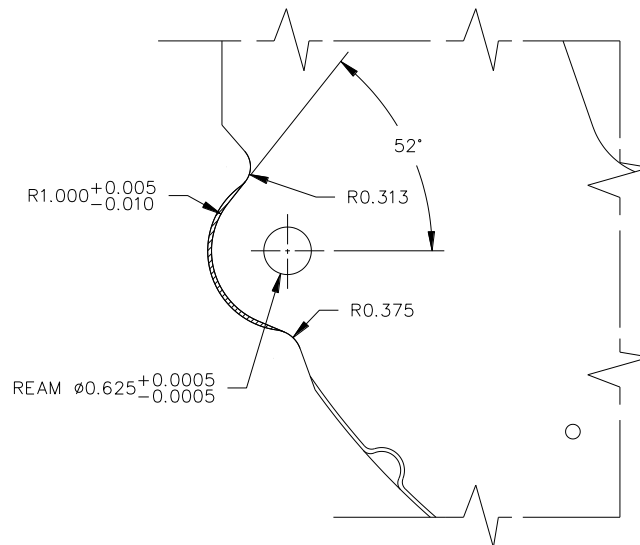
**12.3.19 Install Replacement Ribs #5 and 6**

- a. Re-mark the ribs as shown in Table 8 and Figure 37 using a permanent marker. Transpose the original Trace Reference Number and S/No. to the new location, beside the part number.

**Table 8: Part Marking**

Location	Original Marking	New Marking
Left Hand Rib #6	GA8-532023U305	GA8-532023-305
Right Hand Rib #6	GA8-532023U306	GA8-532023-306
Left Hand Rib #5	GA8-532023U307	GA8-532023-307
Right Hand Rib #5	GA8-532023U308	GA8-532023-308

- b. Ream the strut bolt hole bore to the size shown in Figure 39. Ensure the bore is clean and smooth after reaming, with no notches or tool marks. If required for clearance, the tip of the strut bolt lug of left and right ribs may be blended to a constant radius as shown in the same Figure. Finish all blended edges with a Scotch-Brite® pad or similar to achieve a surface finish of at least 125 microinch Ra (3.2 micron Ra).



**Figure 39: Strut Lug Clean-Up**

- c. Position the replacement Rib and the Small and Large Doublers in place (Figure 33). For ribs modified as detailed above, pin the ribs and doublers together.



- d. Clean the mating surfaces of the Long Straps, Intermediate Straps and Short Straps then pin the Intermediate and Short Straps in place.
- e. Install the Temporary Spacer (P/No. GA8-532024-073) to the strut bolt hole, using the original strut bolt, nut and washers. Additional spacers or washers will be required. Lightly tighten the nut to approximately 6 – 12 lb.in.
- f. Pin the Floor Attach Angle and the Nested Floor Attach Angles back in place.
- g. Verify adequate clearance is provided from adjacent structure including: the Floor Attach Angle, Cabin Side-Wall Skins (Figure 33). Ensure that the Large Doubler inboard vertical edge does not project beyond the Rib #5 and #6 inboard edge profile. If adequate clearance exists with Large and Small Doublers in position then the trimming steps below may be omitted.
- h. Trim, if required, the outboard end of Floor Attach Angle / Nested Floor Attach Angle to ensure clearance from the Large and Small Doublers (Figure 33).
- i. Trim, if required, the upper edges of the Large and Small Doublers to ensure adequate structural clearance from the Cabin Side-Wall Skins and to avoid fouling on any rivet heads (Figure 33).
- j. Trim, if required, the penetration holes in the Large and Small Doublers to provide clearance for the aileron cable conduit penetration (Figure 33).
- k. Trim, if required, the inboard upper edge of the Large Doubler to ensure it is flush with the Rib #5 and #6 inboard edge profile.
- l. Check the alignment of the skin rivet holes with the rib flange. If required, the alignment of the rib with these rivet holes may be addressed by small adjustments of the rib flutes.

**CAUTION:**

**DO NOT FORCE PARTS IN TO PLACE**

- m. Prime the exposed metal using Compound C1 (Table 7).
- n. Re-attach the Large and Small Doublers using the wing strut attachment bolt to locate bores concentrically. Clamp the doublers in position to prevent movement during fastener installation.

**NOTE:**

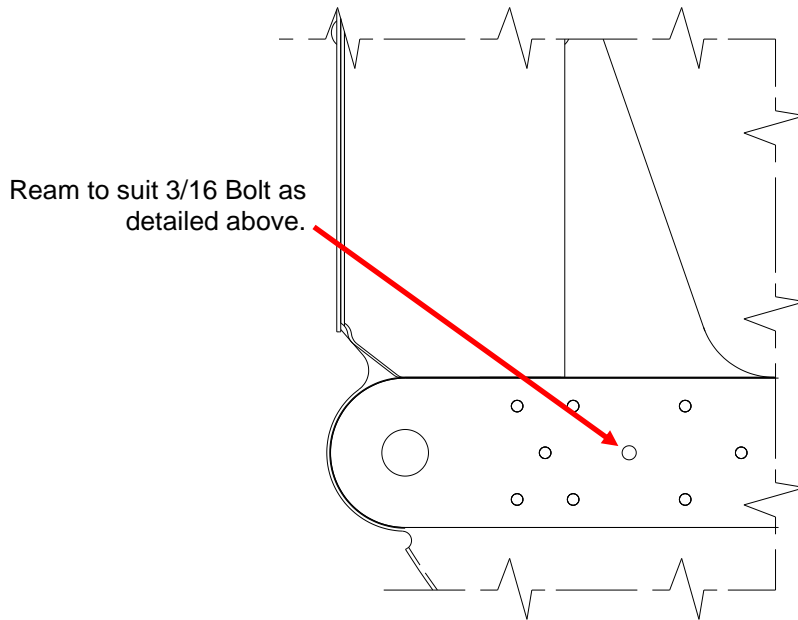
*Note the location where the rear flange Cockpit Door Aft Gusset – LH or RH was installed into Rib # 5, and also the location of Rib #5 and #6 where the Gusset Cap is installed. **DO NOT** install rivets into these holes at this stage.*

- o. Position the replacement Rib, Short Strap, Intermediate Strap and the Small and Large Doublers in place (Figure 33) and install the wing strut or spacer as detailed above. Pin the replacement Rib #5 and Rib #6 to the long straps, belly skin and keel.
- p. If required, up to 4 additional rivets may be removed from each side of the main spar pillar assemblies (Section 12.3.15) to allow proper alignment of the rib installation.

**NOTE:**

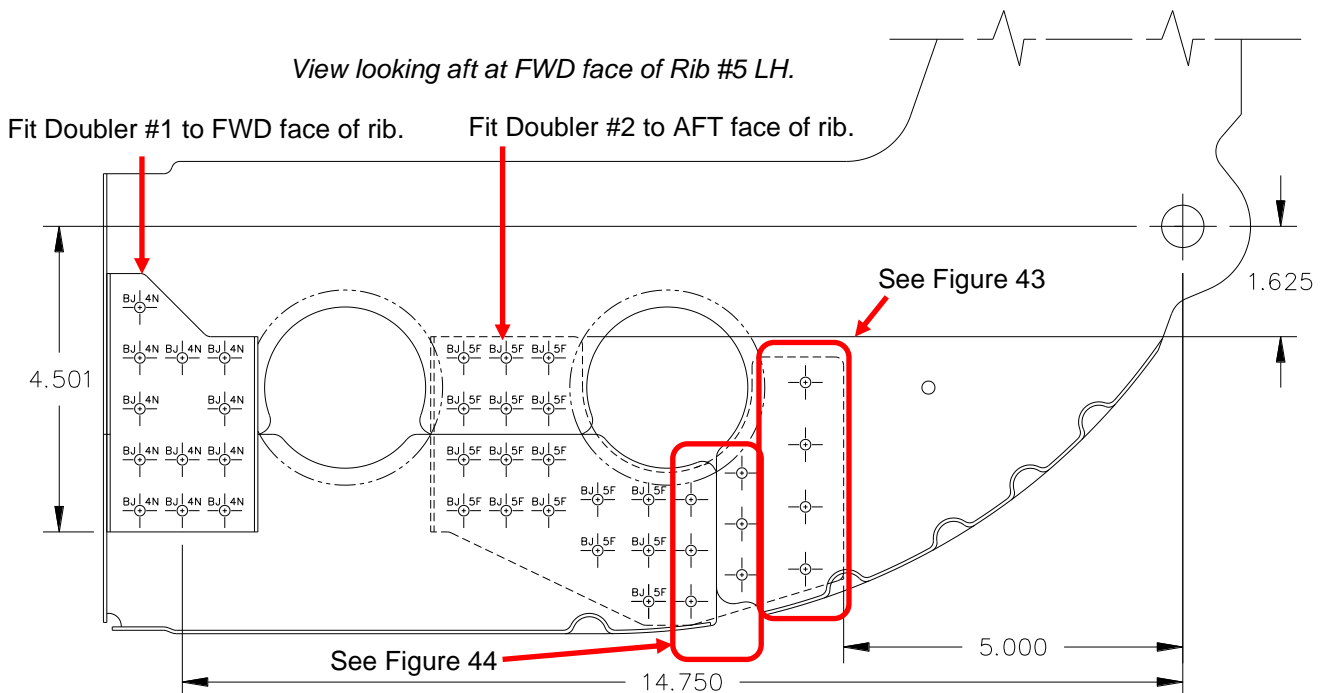
*Ensure all parts are installed and aligned correctly.  
Contact GippsAero engineering before proceeding if alignment cannot be achieved.*

- q. Carefully ream the fastener hole indicated in Figure 40 to allow the installation of a bolt through the entire Rib #5 and Rib #6 assembly. Ream the hole to give a locational transition fit for a NAS6603 bolt; hole diameter between 0.1885 and 0.1900” are typically suitable.
- r. Install GA8-532021-185 Rib 5 – 6 Spacer between the long straps using a NAS6603-29 Bolt, MS21042-3 Nut and AN960-10 Washer. Additional washers may be added to ensure proper nut engagement.

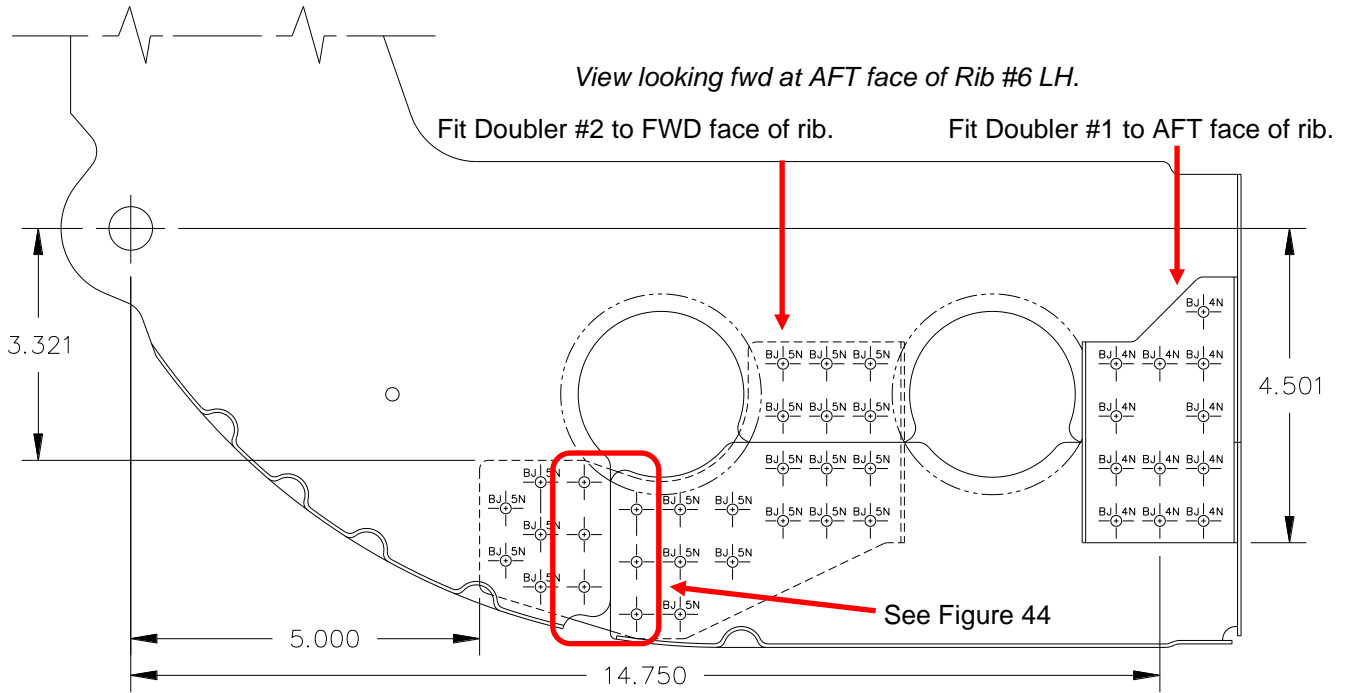


**Figure 40: Ream Spacer Hole**

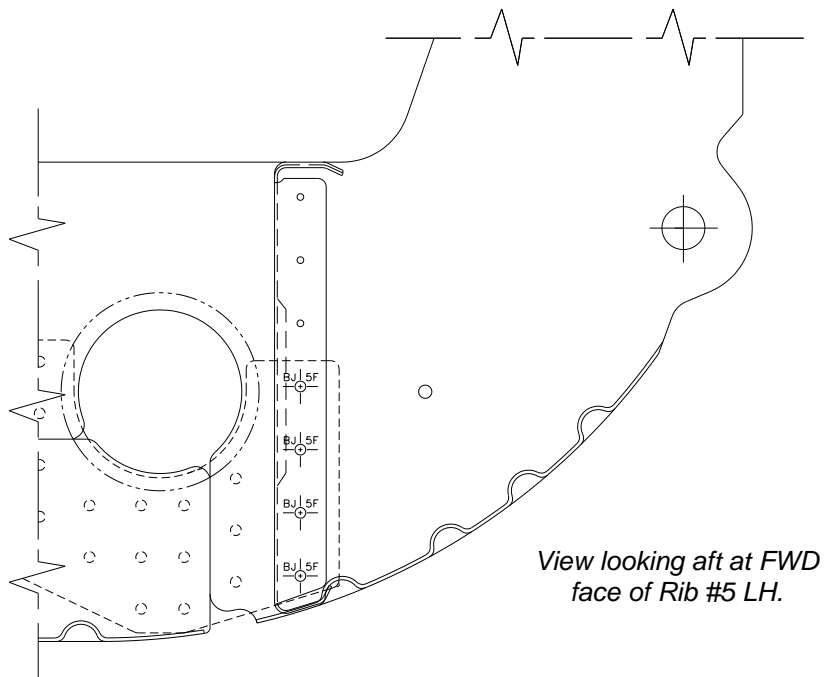
- s. For ribs which **were** modified in accordance with Section 12.3.18:
  - i. Fit the P/No. GA8-532024-071 Skin Shim and GA8-532024-069 or -070 Flange Doublers in place. Drill through the belly skin to suit a 5/32" solid rivet as shown in Figure 44, ensuring that the distance to the next rivet is at least 0.625".
  - ii. Pin the Seat Rail Rib Aft – LH and RH to Rib #5, Rib #4 and the belly skin. Install the same type of rivets to install the Seat Rail Rib Aft to Rib #5. The lowest 4 rivets between the Seat Rail Rib Aft and Rib #5 are to be increased in size as shown in Figure 43. In all cases, rivet length is to be assessed on installation.
  - iii. For ribs which **were** modified in accordance with Section 12.3.18, rivet the doublers to the ribs as shown in Figure 41, Figure 42, Figure 43 and Figure 44.
- t. For ribs which **were not** modified in accordance with Section 12.3.18:
  - i. Pin the Seat Rail Rib Aft – LH and RH to Rib #5, Rib #4 and the belly skin. Install the same type of rivets to install the Seat Rail Rib Aft to Rib #5. In all cases, rivet length is to be assessed on installation.



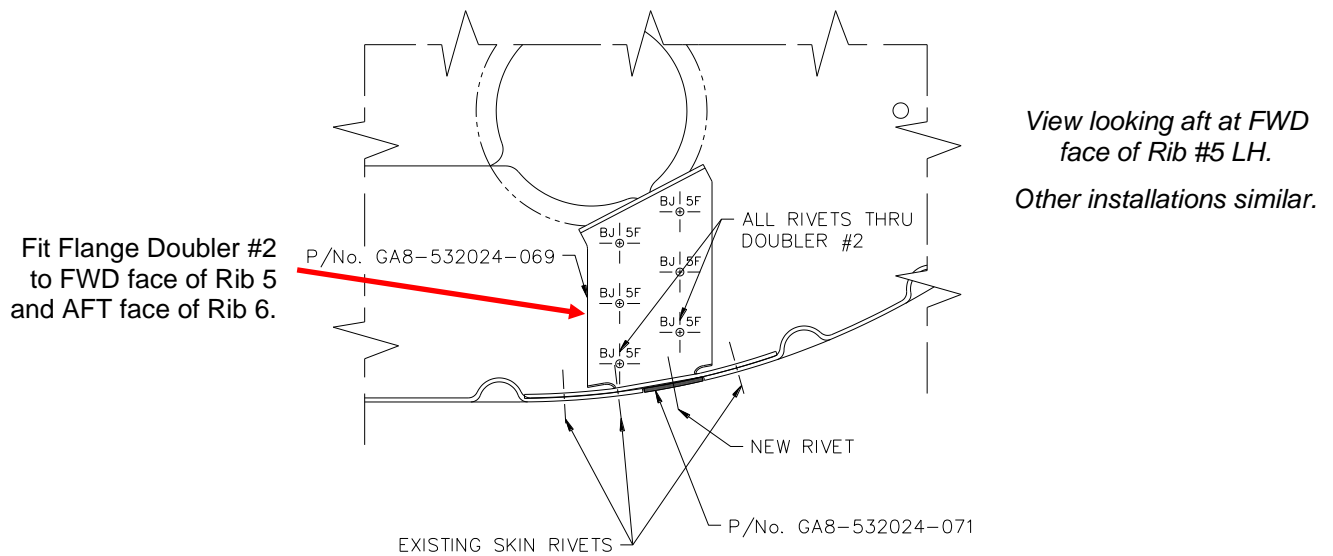
**Figure 41: Doubler Installation Locations – Rib 5**



**Figure 42: Doubler Installation Locations – Rib 6**



**Figure 43: Rivet Installation, Rib #5 Doubler #2**

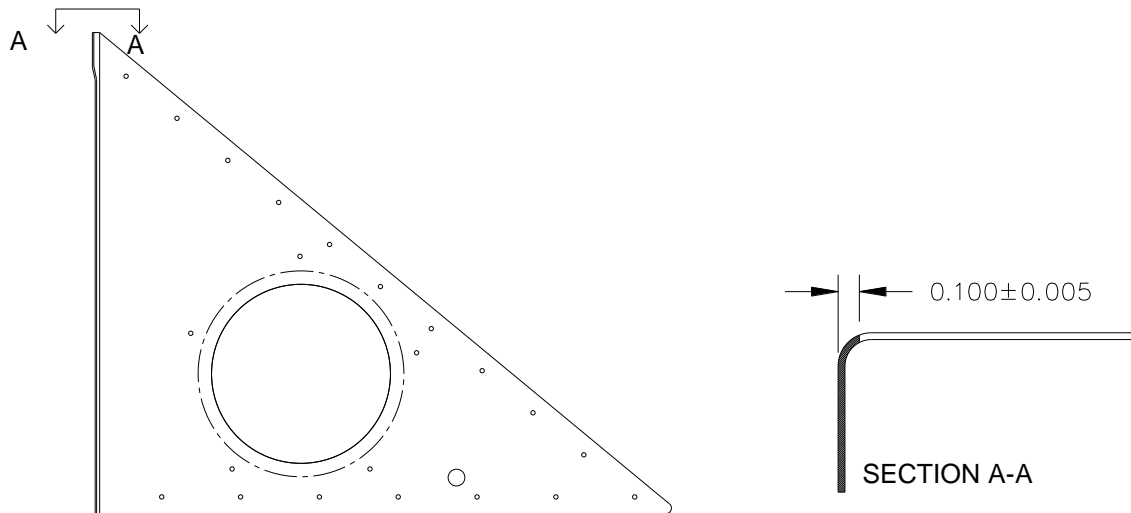


**Figure 44: Flange Doubler Installation**

- u. Drill the rivet holes in the outboard side of the Main Spar Pillar to a diameter of 0.128 – 0.132 inches. Replace the rivets removed in Section 12.3.15 using CR3213-4 rivets. If the holes are damaged then CR3243-4 oversize rivets may be used for some or all locations, using hole size 0.143 – 0.146 inches. Length is to be assessed on installation.
- v. Drill the rivet holes in the inboard side of the Main Spar Pillar to a diameter of 0.160 – 0.164 inches. Replace the rivets removed in Section 12.3.15 using CR3213-5 rivets. If the holes are damaged then CR3243-5 oversize rivets may be used for some or all locations, using hole size 0.176 – 0.180 inches. Length is to be assessed on installation.
- w. Install the replacement Rib #5 and Rib #6 to the belly skin and keel using the same type and size rivets as removed earlier.
- x. Install CR3213-5 rivets (confirm grip length prior to installation) at the existing hole locations in the Rib and Main Spar Side Pillar Assembly above the Floor Skin waterline.
- y. Install three MS20470AD5 rivets through the Floor Attach Angle, Rib #5 and #6, Carry-Through Straps and the Large and Small Doublers (rivet grip length to be verified on installation, Figure 33).
- z. Install quantity of three MS20470AD5 rivets through the Large and Small Doublers, Rib #5 and #6 and the Carry-Through Straps (rivet grip length to be verified on installation, Figure 33).
- aa. Install quantity of seven MS20470AD5 rivets through the Floor Attach Angle, Rib #5 and #6 and the Carry-Through Straps (rivet grip length to be verified on installation).
- bb. Install quantity of fourteen MS20470AD5 rivets through the Rib #5 and #6 and the Carry-Through Straps (rivet grip length to be verified on installation).
- cc. Install quantity of two MS20470AD5 rivets through the Large Doubler, Rib #5 and #6 and the Carry-Through Straps (rivet grip length to be verified on installation, Figure 33).
- dd. Install quantity of fifteen MS20470AD4 rivets through the lower web of Rib 5 and 6 and the Large and Small Doublers (rivet grip length to be verified on installation, Figure 33).
- ee. Install the Inboard Fitting to the rear of Rib #6, using existing fasteners.
- ff. Remove the Temporary Spacer (P/No. GA8-532024-073).

### 12.3.20 Modify Cockpit Door Aft Gusset

- a. Trim the aft end of the Cockpit Door Aft Gusset(s) by 0.100" +/- 0.005" in the hatched area of Section A-A of Figure 45.
- b. Prime the exposed metal using Compound C1 (Table 7).



**Figure 45: Cockpit Door Aft Gusset modification.**

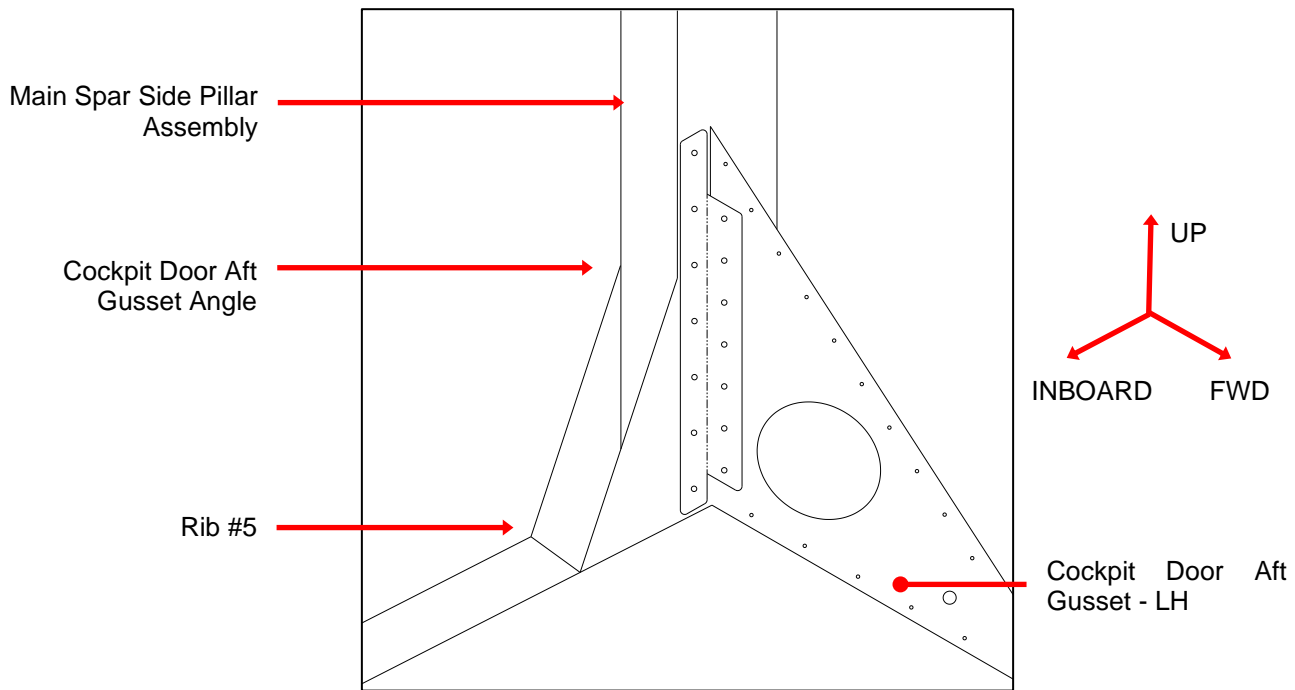
### 12.3.21 Clamp the Cockpit Door Aft Gusset in position.

**NOTE:**

*The Long Packer (GA8-532024-051), Short Packer (GA8-532024-053) and Tapered Packer (GA8-532024-055) will be required to ensure the Cockpit Door Aft Gusset Angle will have a pull-up distance of 0.005" or less when attached to the Main Spar Side Pillar Assembly.*

*If supplied packers are not sufficient, locally fabricate packers to suit from 2024-T3 clad aluminium per SAE-AMS- QQ-A-250/5, to match the Aft Door Gusset Angle profile. Make sure a pull-up distance of less than 0.005" is achieved. Prime using Compound C1 (Table 7).*

- a. Locate the Aft Door Gusset Angle (GA8-532024-027) against the Cockpit Door Aft Gusset and the Main Spar Side Pillar Assembly, using packers as required.
- b. Match drill holes from the Main Spar Side Pillar Assembly into the Aft Door Gusset Angle and packer(s), using a #20 drill to a diameter of 0.161" ensuring 0.35", or greater, edge distance is maintained for all holes (Figure 46).
- c. Trim packers as required to match Aft Door Gusset Angle profile, as required.
- d. Back-drill holes from the Aft Door Gusset Angle into the Cockpit Door Aft Gusset using a #20 drill to a diameter of 0.161" ensuring 0.35", or greater, edge distance is maintained for all holes (Figure 46).
- e. Install CR3213-5 fasteners to attach the Aft Door Gusset Angle to the Cockpit Door Aft Gusset (Assess rivet length on installation).



**Figure 46: Cockpit Door Aft Gusset Angle Attachment (LH shown, RH similar)**

### 12.3.22 Install Replacement Cap

- The original Gusset Cap (GA8-533028-049) may be re-used or new parts installed. Fit the parts in position of removed Gusset Cap.
- Trim Gusset Cap, as required, to avoid fouling on the Small Doubler(s) or Cockpit Door Aft Gusset Angle. De-burr newly exposed edges and prime using Compound C1 (Table 7).
- Mark mounting holes on Ribs #5 and #6. Ensure edge distance of marked holes is 0.325" or greater. When satisfied this condition is met, clamp replacement Gusset Cap in place. Match drill holes through the Ribs #5 and #6 and Large Doublers using a #20 drill to a diameter of 0.161".
- Install the Gusset Cap using CR3213-5 Cherry-Max rivets (assess rivet length on installation).

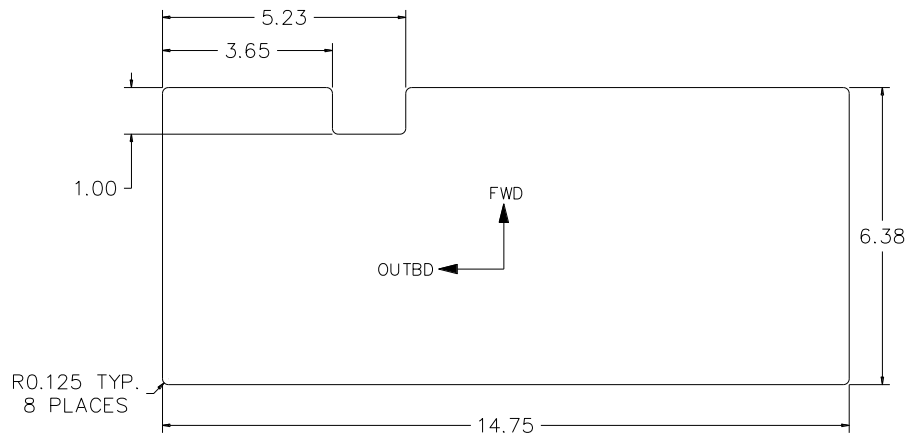
### 12.3.23 Manufacture and Install Floor Skin Patch

- If the centre floor skin was modified as detailed in Section 12.3.4, manufacture a Floor Skin Patch for each side using 2024-T3 clad aluminium per SAE-AMS-QQ-A-250/5 with a thickness of 0.040". Dimensions are as shown in Figure 47 for aircraft equipped with extended crew seat rails and Figure 48 for aircraft without.
- De-burr the part(s).
- Prime the part(s) using Compound C1 (Table 7).
- Select the surface of the part(s) that will be visible when installed and paint using Compound C3 (Table 7) in a colour to match the surrounding area.

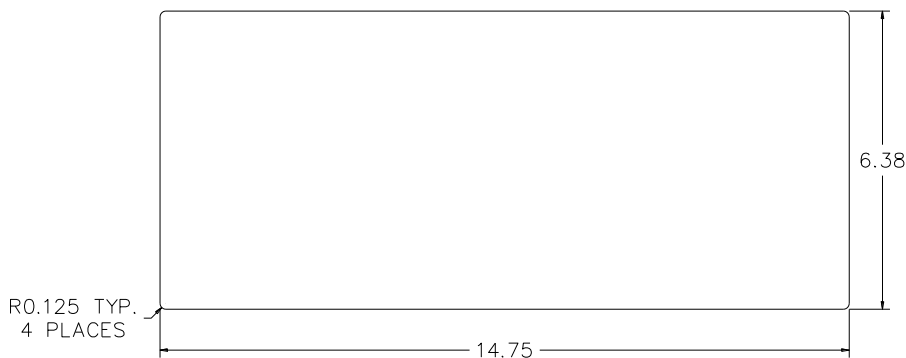
**NOTE:**

*When installing the patch, the channel within the patch should be aligned such that the seat rails will not be raised as a result of the patch installation. Trial fit the seat rails, and trim patch as required.*

- Put the Floor Skin Patch over the cut-out aft of Rib 6. Make sure 0.25" or greater edge distance is maintained for all fastener holes.
- Put Seat Rail(s) in and make sure Patch does not touch Seat Rails. If Patch does touch Seat Rail(s), trim Patch to make sure a minimum gap of 0.050" to Rail(s).
- Match drill holes from the floor skin into the Floor Skin Patch using a #30 drill, to a diameter of 0.129".
- Install the Floor Skin Patch using CR3213-4 Cherry-max rivets. Assess rivet length on installation.



**Figure 47: Floor Skin Patch – Extended Seat Rails (dimensions in inches)**



**Figure 48: Floor Skin Patch – Regular Seat Rails (dimensions in inches)**

### 12.3.24 Systems and Equipment Re-installation and Checks

- a. Install the aileron cable and conduit removed in Section 12.3.10 and apply a neutral cure sealant at the conduit penetration through Ribs 5 and 6 (compound C2 of Table 7 may be used).
- b. Attach the wing strut to the fuselage in accordance with Section 57-10-10 of the GA8 or GA8-TC 320 Service Manual, and check wing rigging.
- c. Install the fittings and fuel vent lines removed in Section 12.3.7.
  - i. Install the Fuel Pump, Fuel Strainer Bowl(s), Fuel Valves and Fuel Lines as were removed in Section 12.3.7.
  - ii. Trial fit the Fuel Pipe Hanger Bracket in position. Back-drill the two mounting holes from the Fuel Pipe Hanger Bracket to Rib #5 using a #20 drill to a diameter of 0.161".

**NOTE:**

*Strainer Bowl(s) or Fuel Lines may need to be temporarily removed to allow access to rivet the Fuel Pipe Hanger in place*

- iii. Install the Fuel Pipe Hanger Bracket to Rib #5 RH using CR3213-5 rivets (assess length on installation).
- d. Install the Wing Root Fairing and Pilot's Grab Handle on the RHS of aircraft.
- e. Install the wall and Floor Components removed in Section 12.3.8 and 12.3.9. Verify correct routing of aileron cables through pulley behind the Cockpit Door Aft Gusset(s).
- f. Place removed/moved Rib #7 Assy(s) back in position and install to the keel beam and belly skin using MS20470AD4 rivets. Ensure correct orientation of Rib #7 Assy(s).
- g. Place removed Intercostal Rib(s) in position and install to the belly skin using MS20470AD4 rivets.
- h. Install Seat Rail Rib Aft – LH and RH to the Belly Skin and to Rib #4 using the same rivets as were removed. Seal either side of the flange attaching the Seat Rail Rib Aft – RH and over the rivet heads/tails per Section 28-10-10 of the GA8.

- i. Route electrical wires through Ribs #5 and #6 to their original location – including any RH wiring looms disconnected as detailed in Section 12.3.11. Secure electrical harnesses to cable tie bases or cable stand offs, returning wiring protection to original configuration.
- j. Test the pitot-static system in accordance with Chapter 34 of the GA8 or GA8-TC 320 Service Manual to confirm that no leaks are present.
- k. Install Cockpit Floor Skin and Centre Floor Skin using the same type of rivets as were removed, and ensuring to reinstall the same type of anchor nuts as applicable.
- l. Install the fittings and fuel vent lines removed in Section 12.3.7.
- m. Perform a fuel system flow rate check in accordance with Section 28-20-50 of the GA8 or GA8-TC 320 Service Manual, ensuring there are no leaks.
- n. Install the Wing Root Fairing and Pilot's Grab Handle on the RHS of aircraft.
- o. Install the Sidewall Components removed in Section 12.3.8 and 12.3.9, including the modified Cockpit Door Aft Gusset(s), ensuring correct pulley installation and routing of aileron cables through pulleys behind the Cockpit Door Aft Gusset(s) and the Aileron Pulley Bracket Covers(s).
- p. Conduct a Ground Power Test in accordance with Section 12.3.25 of this Engineering Release.
- q. Rig the aileron control system and carry out a functional check including free play and travel limits as specified in Section 27-10-70 of the GA8 or GA8-TC 320 Service Manual.
- r. Attach the Flap Lever cables disconnected in Section 12.3.2. Re-install the Flap Lever Assembly.
- s. Rig the Flap Control System and carry out a functional check including travel limits as specified in Section 27-50-15 of the GA8 or GA8-TC 320 Service Manual.
- t. Install the Console Recess and ensure Fire Extinguisher is in correct position.
- u. Attach the Wing Strut to the fuselage in accordance with Section 57-10-10 of the GA8 or GA8-TC 320 Service Manual and check wing rigging.
- v. Pull all overhead circuit breakers.
- w. Install the Battery Box, and then install the Battery.
- x. Conduct an electrical systems check for all disturbed systems. Consult GA8 or GA8-TC 320 Service Manual for wiring diagrams, and also consult applicable Service Manual Supplements contained in the aircraft's Service Manual for wiring diagrams and troubleshooting.
- y. Push in all circuit breakers in the electrical overhead panel.
- z. Install the floor access panels and covers removed in Section 12.3.1 using same fasteners.
- aa. If Section 12.3.3 was implemented, install the GA8-533028-033 Cover Plate over the round access hole and the GA8-533028-047 Cover Plates over the oval-shaped access hole using CR3213-4 Cherry-max rivets into the satellite holes (assess rivet length on installation).
- bb. Install the seat rail removed in Section 12.3.1 of this Engineering Release. Ensure seat rails are placed back in correct position and orientation.
- cc. Install the seats and restraint equipment removed in Section 12.3.1 in accordance with Sections 25-10-01, 25-10-03, 25-20-01 and 25-20-02 of the GA8 or GA8-TC 320 Service Manual.
- dd. Apply Compound C3 (Table 7), in a colour to match the surrounding area to surfaces and rivet heads as required.
- ee. Install the Cabin Wall Trim and Floor Coverings removed in Section 12.3.1 of this Engineering Release



### 12.3.25 Ground Power Test

This test is to be conducted after the ground power receptacle and associated wire and ground bar have been returned. It requires a ground power cart.

- a. Ensure battery is still removed from aircraft.
- b. Pull all under floor circuit breakers
- c. Pull all overhead circuit breakers
- d. Place the Bus 1/ Bus 2 voltmeter switch to position BUS 1 / BATTERY
- e. On the overhead panel, ensure Bus 1 and Bus 2 Master Off
- f. Confirm Ground cart is set for 12/14VDC.
- g. Apply power to ground cart outlet.
- h. Insert connector to the Ground Power Receptacle.
- i. Listen for the ground power solenoid to “click in”. This indicates power is being applied to the coil of the ground power field solenoid. Do not proceed if the sound of the solenoid contactor was not heard. Undertake electrical fault finding.
- j. If ground power cart is fitted with an ampere meter, observe for current flow.
- k. Push in Bus 1 CONTROL and BUS1 MAIN under-floor circuit breakers
- l. Push in SYS 1 overhead electrical circuit breaker
- m. Move Bus 1 Master Switch on overhead panel to ON whilst observing volt meter
- n. The test is passed if the displayed voltage matches that from the ground power +0/-0.5V. If test is not passed, check wiring (See Chapter 24 of the GA8 or GA8-TC 320 Service Manual) and re-test.
- o. When satisfied with correct operation, move Bus 1 Master Switch to OFF.
- p. Remove ground power connector from the aircraft.
- q. The battery box, if removed, and/or battery may be re-installed to the aircraft following this test.

### 12.3.26 Appendix 1: Ground Power Test

This test is to be conducted after the ground power receptacle and associated wire and ground bar have been returned. It requires a ground power cart.

- 1) Ensure battery is still removed from aircraft. See Section 24-00-10 of Service Manual.
- 2) Pull all under floor circuit breakers
- 3) Pull all overhead circuit breakers
- 4) On the LH Instrument Panel, place the Bus 1/ Bus 2 volt meter switch to position BUS 1 / BATTERY
- 5) On the overhead panel, ensure Bus 1 and Bus 2 Master Off
- 6) Confirm Ground cart is set for 12/14VDC.
- 7) Apply power to ground cart outlet.
- 8) Insert connector to the Ground Power Receptacle.
- 9) Listen for the ground power solenoid to "click in". This indicates power is being applied to the coil of the ground power field solenoid. Do not proceed if the sound of the solenoid contactor was not heard. Under take electrical fault finding.
- 10) If ground power cart is fitted with an ampere meter, observe for current flow.
- 11) Push in Bus 1 CONTROL and BUS1 MAIN under-floor circuit breakers
- 12) Push in SYS 1 overhead electrical circuit breaker
- 13) Move Bus 1 Master Switch on overhead panel to ON whilst observing volt meter
- 14) The test is passed if the displayed voltage matches that from the ground power  $\pm 0/-0.5V$ . If test is not passed, check wiring (See Chapter 24 of the GA8 or GA8-TC 320 Service Manual) and re-test.
- 15) When satisfied with correct operation, move Bus 1 Master Switch to OFF.
- 16) Remove ground power connector from the aircraft.
- 17) The battery box, if removed, and/or battery may be re-installed to the aircraft following this test.

### 12.3.27 Appendix 2: Electrical System Function Check

This test is to be conducted after the ground power receptacle and associated wire and ground bar has been returned. It requires a ground power cart.

**CAUTION:**



**CONFIRM AIRCRAFT IGNITION KEY IS REMOVED FROM AIRCRAFT IGNITION**

Table 9 to Table 15 list basic aircraft equipment. Other systems which were disturbed by incorporation of this bulletin must also have appropriate functional checks. These may be recorded in Table 16.

**Equipment required to perform test:**

Variable power supply with current limiting function.

**Table 9: Main Lights.**

Action	Technician	Completed Or Record. ✓		
Pull all circuit breakers.				
Make sure <b>All</b> Switches is Off.				
Engage Circuit Breakers on solenoid box.				
Master Switches ON.				
Avionics Switches ON.				
Test operation of NAV Lights. <b>LH wing    RH wing    Tail</b>		LH	RH	Tail
Record display voltage and current on Volt/Amp meter on Power supply.		.....V .....A		
Test operation of Strobe Lights. <b>LH wing    RH wing    Tail</b>		LH	RH	Tail
Test operation of Landing Lights. (Inner) <b>LH wing    RH wing</b>		LH		RH
Test operation of Taxi Lights. (Outer) <b>LH wing    RH wing</b>		LH		RH
Test operation of Wing Courtesy Light.				
Test operation of Passenger Courtesy Light <b>and</b> Overhead Panel Lamp.				
Test operation of Map Light ( <i>Includes dimmer operation</i> ).				

**Table 10: Instrument Lighting**

Action	Technician.	Completed Or Record. ✓		
Pull all circuit breakers observe that no instrument lighting will come on when switch is operated.				
Engage Instrument Light breaker.				
Test operation of Instrument Dimmer lighting    CHT ( <i>Very difficult to see</i> ); Volt/Amp meter; Oil meter; LH Fuel Gauge; RH Fuel Gauge.		CHT	V/A	Oil
		LH/F	RH/F	
Test operation of Coaming lights and dimmer circuit of Coaming lights.				
Test operation of Overhead Electrical Panel lighting and dimmer circuit.				
Test operation of Standby Compass lighting. ( <i>Look for red light on needle</i> )				

**Table 11: Fuel Systems**

Action	Technician.	Completed Or Record. ✓	
Test operation of Fuel Pump from Overhead Electrical panel Operate for less than 1 second the Fuel Boost Pump Observe illumination of Fuel Boost lamp			
Push in "START" circuit breaker Depress the "PUSH TO PRIME" switch. Operate for less than 1 second. Observe illumination of Fuel Boost lamp Pull the "START" circuit breaker			
Fuel Flow Transducer indicator type fitted ( <b>JPI FS 450 Bus 1</b> ) Or ( <b>EDM-800 Bus 1 Avionics.</b> )		JPI	EDM
		BUS 1	BUS1/A
Test operation of Fuel Gauges ( <i>Pull circuit breaker</i> )			

**Table 12: Indicator Lamps**

Action	Technician.	Completed or N/A ✓		
		W/I	VAC	Pitot
Warning Lights Vac, Pitot & Oil = On/illuminated ; ALT = Off Alternate Air (if fitted). ( <b>Make sure Caution warning C/B are engaged Bus 1 &amp; 2</b> )		Oil	Alt.	Alt/A
Warning Light Test if pressed. All lights on?				
Operation of Warning Lamp Dim Switch. Ensure that switch position matches the lamp intensity. All lights on and dimmed except Oil lamp full brightness.		Position		
		Dimmed		
Operation of Alternate Air lamp. ( <i>Normally Aspirated engine only</i> ). Open and close the control cable. ( <i>Requires 1A Stall breaker pushed in</i> )				

**Table 13: Other**

Action	Technician.	Completed ✓
Test Voltage at Aux power receptacle. Matches volt amp meter indication.		
Turn Co-Ordinator power flag not present with application of power to the Turn Co-Ordinator.		
Confirm each avionics unit installed powers on. For remote mounted equipment this may be verified by status lights on the unit or by messages displayed on the avionics display units installed.		

**Table 14: Pitot Tube Heating**

Action	Technician.	Completed ✓
Remove cover from Pitot tube. Apply power to Pitot tube.		
Observe current draw increase, typically 20A on start-up reducing by 10A.		
Observe Heat Pitot lamp off.		
Observe tube heating by touching the tube immediately after power has been applied.		
Turn off Pitot Switch circuit breaker. Observe illuminated Heated Pitot lamp.		
Allow the tube to cool and return the pitot tube cover.		

**Table 15: Fan**

Action	Technician.	Completed ✓
Fresh Air Fan Low Setting		
Fresh Air Fan High Setting		

**Table 16: Any Other Equipment**

Action		Technician.	Completed ✓
Equipment	Test		

### 13 Documentation:

All Aircraft: Update aircraft logbook to show incorporation of this Service Bulletin.

GA8 Service Manual C01-00-01 does not include Rib 5 / 6 P/No. GA8-532023-305 / -306 / -307 / -308 in the Airframe Limitations Section. Therefore, when these ribs are installed to those aircraft by this bulletin, one of the options given in Table 17 must be done.

**Table 17: Action Required – Aircraft Maintained in Accordance with C01-00-01**

AIRCRAFT OPERATIONAL CONFIGURATION	ACTION REQUIRED	DOCUMENTATION REQUIREMENTS
Aircraft S/No. 01-004 to 03-025 maintained in accordance with GA8 Service Manual C01-00-01	Rib Replacement	Incorporate Service Bulletin SB-GA8-2003-04, <b>OR,</b> Service Manual Supplement C05-96-96 at latest issue must be inserted in the Aircraft's Service Manual at the completion of this modification.

### 14 Continuing Airworthiness:

Continuing airworthiness requirements for various options are listed in Table 18

**Table 18: Continuing Airworthiness**

AIRCRAFT STRUCTURAL CONFIGURATION	ACTION REQUIRED	CONTINUING AIRWORTHINESS REQUIREMENTS
Rib 5 / 6 P/No. GA8-532023-37 / -38 / -77 / -78 GA8-532023-301 / -302 / -303 / -304	Part 1 (Section 12.1)	Shall be performed every 100 hours or during annual inspections, whichever is the sooner.
Rib 5 / 6 P/No. GA8-532023-305 / -306 / -307 / -308 GA8-532024-041 / -042 / -043 / -044	None	Inspections revert to the requirements of the applicable Airplane Service Manual.

Note that "U" part numbers are un-drilled versions of the standard parts. When installed, the P/No. GA8-532023U305 / U306 / U307 / U308 parts used by this Bulletin become P/No. GA8-532023-305 / -306 / -307 / -308. Airworthiness Limitations for these parts are provided in Section 4 of the applicable Aircraft Service Manual.

### 15 Compliance Notice:

Complete the Document Compliance Notice and return to GippsAero by mail, fax or email.

## DOCUMENT COMPLIANCE NOTICE



Document:

**SB-GA8-2013-99**

**Issue 4**

Aircraft Serial Number: GA8-\_\_\_\_\_

Service Bulletin SB-GA8-2013-99 Issue 4 has been incorporated in the above aircraft.

Part 2 accomplishment:

- LH RIB 5 and LH RIB 6
- RH RIB 5 and RH RIB 6

Part 3 accomplishment: – Serial numbers for Replacement Rib and Permanent Doublers installed:

LH FWD RIB \_\_\_\_\_ RH FWD RIB \_\_\_\_\_

LH AFT RIB \_\_\_\_\_ RH AFT RIB \_\_\_\_\_

Aircraft flight hours: \_\_\_\_\_ Date: \_\_\_\_\_

Signed \_\_\_\_\_

Print Name: \_\_\_\_\_

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