GippsAero

PO Box 881, Morwell, Victoria 3840, Australia
Ph + 61 (0) 3 5172 1200
Fax + 61 (0) 3 5172 1201
www.gippsaero.com.au

SB-GA8-2009-59
Issue 2

MANDATORY

Service Bulletin

1 Subject:

Horizontal Stabiliser Repair

2 Applicability:

Table 1: Applicability

AIRCRAFT	SERIAL NUMBER(s)	ACTION
GA8 and GA8-TC 320	Up to S/No. GA8-07-114	Do Section 13 of this Service Bulletin, including the installation of new Stiffener Brackets (Items 1 and 2 of Table 4).
GA8 and GA8-TC 320	S/No. GA8-07-115 and above.	Do Section 13 of this Service Bulletin.

3 Amendments:

Table 2: Issue Status

Issue	Description	Ref.	Date
1	Initial issue.	GAE11-739	16 Sep 2009
2	Revised applicability and formatting updated.	GAE11-2758	14 Oct 2025

4 Background:

Cracking of the internal structure has been noted in some horizontal stabilisers in the lower flange of the inboard ribs and or the lower flange of the rear spar splice channel. The cracks typically develop adjacent to the stabiliser mounting channel attachment bolts and are monitored in service via GippsAero Service Bulletin SB-GA8-2002-02 Issue 6 (or later approved Issue).

In 2009, Issue 1 of this Service Bulletin was released, providing a standard repair for typical cracks and allowing existing aircraft to be fitted with the new load distribution fitting which had been introduced to new aircraft production in 2007. In 2025, minor cracking was identified in an aircraft equipped with these fittings and so Issue 2 of this Service Bulletin was prepared, expanding the applicable aircraft serial number range.

NOTE:

Compliance with this document does not remove the requirement for internal inspections in accordance with Service Bulletin SB-GA8-2002-02.

5 Compliance:

This Service Bulletin provides rectification actions for cracks identified during the stabiliser inspections detailed in SB-GA8-2002-02 (Issue 6 or later approved issue). Where cracking is identified, the repairs contained in this Service Bulletin are Mandatory (see Table 3).

The modifications detailed in this Service Bulletin may also be applied to stabilisers which are not cracked as a preventative measure.

Table 3: Compliance

CRACKS FOUND	COMPLIANCE	COMPLIANCE TIME
Yes	**MANDATORY**	Before further flight.
No	**OPTIONAL** (Highly Recommended)	At the Operator's, Owner's or Maintenance Provider's discretion.

6 Weight and Balance:

Negligible effect on weight and balance.

7 Electrical Load Analysis:

No effect on aircraft Electrical Load Analysis.

8 Approval:

The airframe repair described in this Service Bulletin has been approved pursuant to Australian Civil Aviation Safety Regulation 21.095 (1998).

9 Parts:

The following parts are required to accomplish this Service Bulletin.

Table 4: Parts Available from GippsAero as Kit SB-GA8-2009-59-1

ITEM	PART No.	DESCRIPTION	QTY	REMARKS
1	GA8-551021-201	Stiffener Bracket LH	1	
2	GA8-551021-202	Stiffener Bracket RH	1	
3	GA8-950075-023	Rib 1 Section	2	
4	GA8-950075-025	Rear Spar Doubler	1	
5	AN3-5A	Bolt	2	
6	NAS1303-8	Bolt	2	
7	AN3-6A	Bolt	4	
8	MS21042-3	Nut	8	
9	AN960-10L	Washer	8	
10	CR3213-4-1	CherryMAX Rivet	30	
11	CR3213-4-2	CherryMAX Rivet	130	
12	CR3213-4-3	CherryMAX Rivet	20	
13	MS35206-218	Screw	10	
14	MS20365-440	Nut	10	

NOTE:

MS20470AD3 and 4 Rivets of various lengths to be supplied by the repair facility.

Table 5: Compounds List

ITEM	COMPOUND NUMBER	DESCRIPTION
C1	Primer	MIL-PRF-23377 Type I & II Class C2, OR BMS10-11 TY I CL A GR A, OR BMS10-79 TYII CL A
C2	PPG 2-Pack	Top Coat: Aviation Urethane Paint. MIL-PRF-85285 Type I Class H topcoat may also be used.
C3	PR1422 B-1/2 PR1422 B-2	Sealant. Other products meeting AMS-S-8802 may also be used.

10 Parts Availability:

New parts can be obtained directly from GippsAero.

Tel: +61 (0)3 5172 1200

Fax: +61 (0)3 5172 1201

Email: PARTS@gippsaero.com.au

11 Labour:

32 man-hours should be allocated for completing the work detailed in this Service Bulletin. This time does not include set up etc.

12 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

13 Accomplishment Instructions:

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

WARNING:

ALL WORK SPECIFIED IN THIS SERVICE BULLETIN SHALL BE CARRIED OUT BY APPROPRIATELY QUALIFIED PERSONNEL

NOTE:

Read all the applicable instructions prior to initiating any work.

The installer must ensure this design change is compatible with configuration of the aircraft. Contact GippsAero Engineering for further guidance if the instructions of this Bulletin are unsuitable for a particular aircraft configuration or do not achieve the required outcomes.

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

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.

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

Unless stated otherwise, hardware removed during the procedure below is to be inspected and re-used if serviceable.

Unless stated otherwise, all dimensions are in inches.

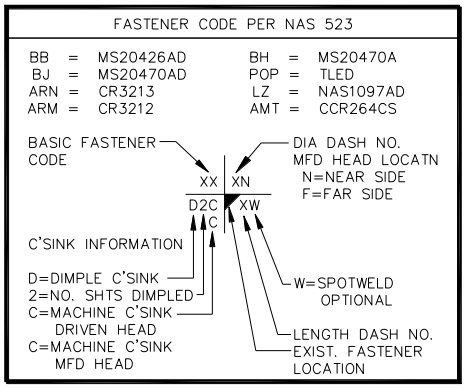

Figure 1: Fastener Codes

13.1 Inspection:

13.1.1 Inspect the horizontal stabiliser in accordance with SB-GA8-2002-02 Issue 6 (or later approved issue). This Service Bulletin is available from the GippsAero website; www.gippsaero.com.au

13.1.2 Carry out full internal and external inspection of the stabiliser structure in the area of the Mount Channels.

13.1.3 Any cracked components must be replaced.

13.2 Preparation

13.2.1 Remove and safely store the elevators, rudder and fin assemblies.

13.2.2 Remove the horizontal stabilizer from the aircraft.

13.2.3 Remove the horizontal stabilizer access panel.

13.2.4 Remove both rear stabilizer mounting channels.

13.3 Removal of Rear Spar Assembly

13.3.1 Remove the rivets along the rear spar line and skin doubler from the upper and lower skins full span as outlined in Figure 2.

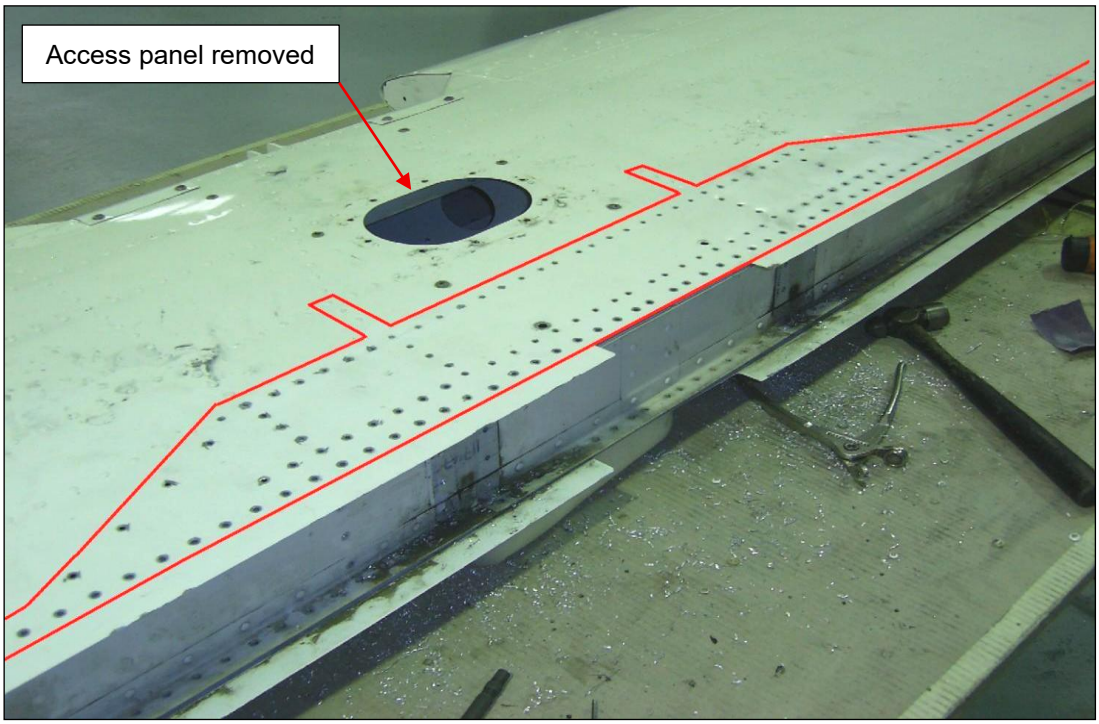

Figure 2: Rivets to be Removed from Skin

13.3.2 Remove the 3 rivets (4 rivets for tailplanes with laminated hinge fittings) from the inboard flange of the inboard elevator hinge, LH and RH at Rib 1. See Figure 3.

13.3.3 Remove the rivets through the rear spar at ribs 2, 3, 4, and 5, LH and RH. See Figure 3.

13.3.4 Remove the 12 rivets from each outboard elevator attach hinge at rib 6 and remove hinge (for laminated elevator hinges).

13.3.5 Remove the 14 rivets from each outboard elevator hinge at rib 6 and remove hinge (for CNC machined elevator hinges).

13.3.6 Remove the 4 rivets through the spar to rib 6, LH and RH (for laminated elevator hinges).

13.3.7 Remove the 2 countersunk rivets through the spar to rib 6, LH and RH (for machined elevator hinges).

13.3.8 Remove the spar assembly.

13.3.9 Replace components in accordance with instructions 13.4 through 13.6 as required.

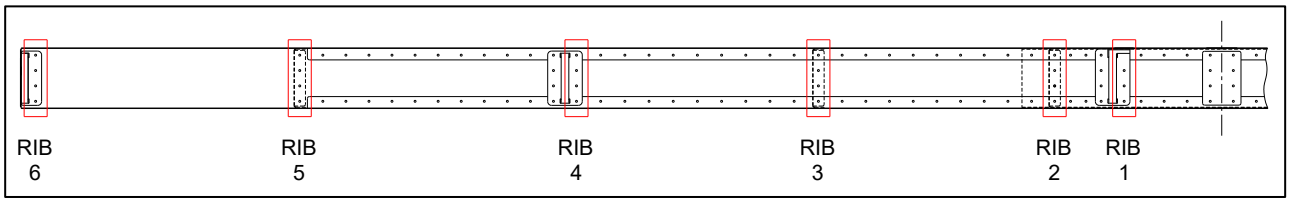

Figure 3: Spar Rivets to be Removed (Left side of stabilizer shown only)

13.4 Replacement of the Aft Section of the Inboard Ribs

13.4.1 Remove the remaining upper and lower rivets in the aft section of the inboard ribs (if not already removed). See Figure 2.

13.4.2 Cut and remove aft section of both inboard ribs at the point indicated by the dotted line in Figure 4. De-burr and finish all blended edges with a Scotch-Brite® pad, rotary polishing tool or similar to achieve a surface finish of at least 125 microinch Ra (3.2 micron Ra). Apply Primer (Item C1 of Table 5) to the cut edge.

NOTE:

Take care to avoid damage to surrounding structure.

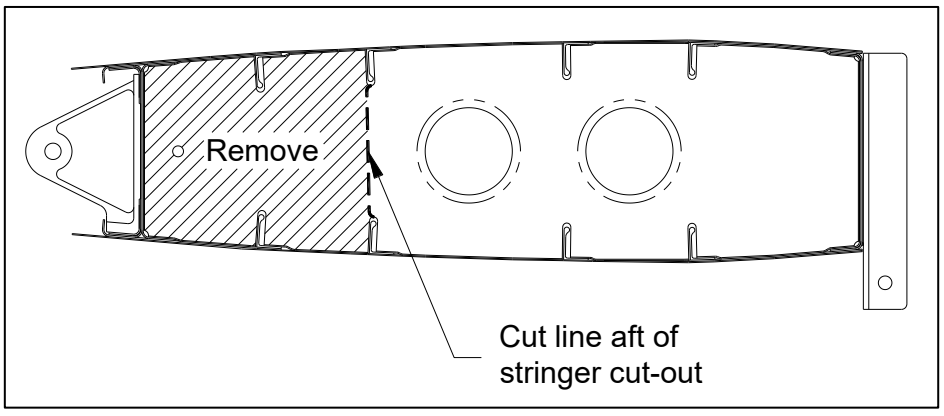

Figure 4: Inboard Rib Modification

13.4.3 For aircraft already fitted with stiffeners (Item 1 and 2 of Table 4), carefully drill the rivets and remove the parts from the removed portion of the rib. These parts may be re-used if serviceable; carefully inspect the part for damage, including damaged rivet holes, cracking or corrosion. Discard if defects are found. If the paint on the part is damaged or missing it must be repaired using Item C1 of Table 5.

13.4.4 Mark the lower and rear flanges of the new Rib 1 Section (GA8-950075-023) using a dark coloured fine line marker. Draw a line along the lower and rear flange 0.470 inch (12.0mm) from the outer face of each rib section. See Figure 5.

NOTE:

The accuracy of this line is important as it sets the position of the Channel Mount bolts in relation to the Stiffener Bracket web Ref step 7.2.

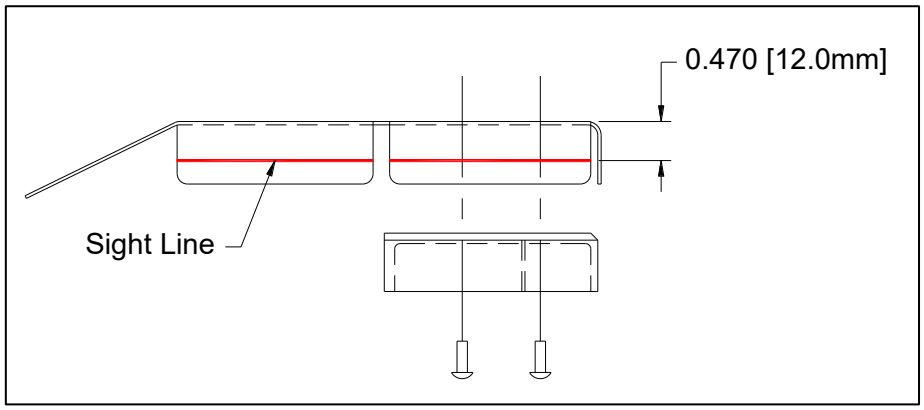

Figure 5: Mark Rib Section

13.4.5 Use a straight edge across the rear flanges of both No 2 ribs and align both Rib 1 Section rear flanges with the straight edge. Ensure the rib rear flange is square to the straight edge and that the line from the previous step is central in the bolt holes for the Stabiliser Mounting Channel. See Figure 6

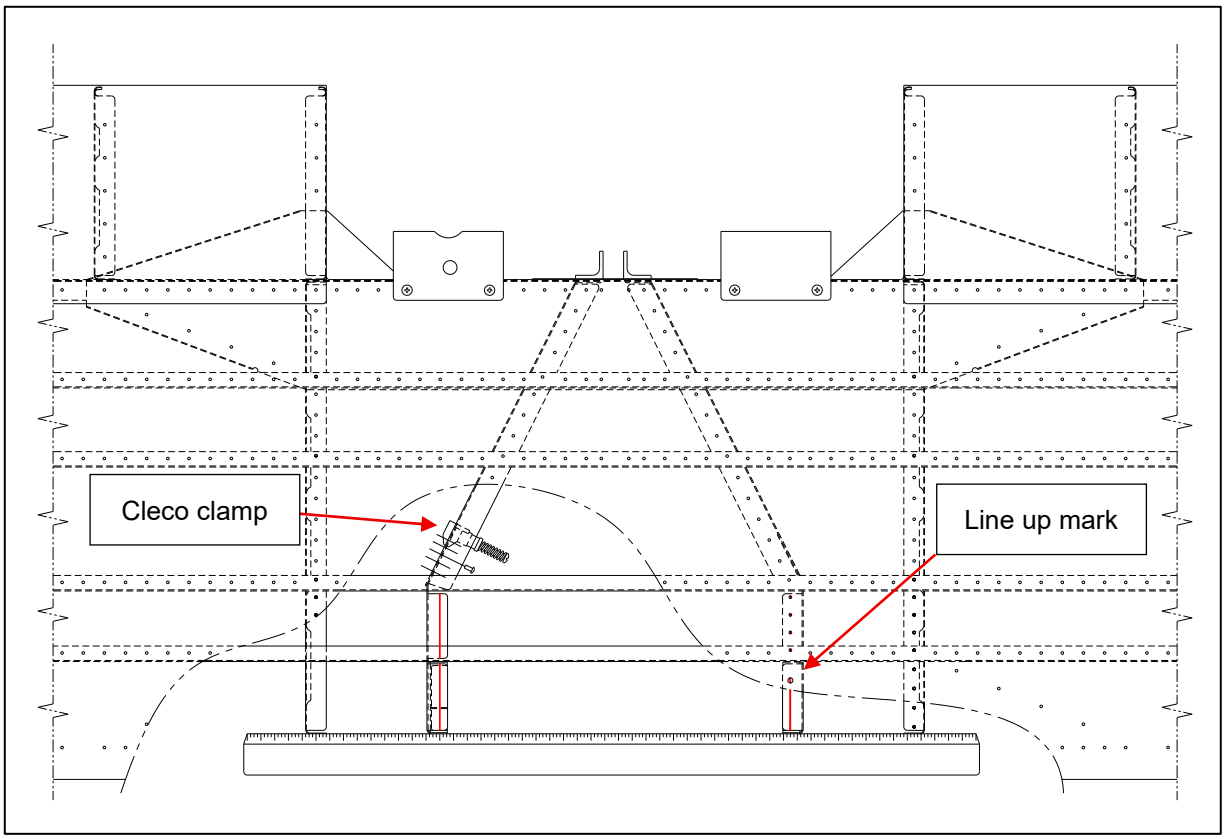

Figure 6: Installation of Rib Sections

13.4.6 Clamp the attachment flange of the Rib 1 Section to the web of the No.1 Rib as shown. Drill through the holes in the flange at the forward end of the Rib 1 Section (hole diameter 0.125 – 0.135 in). Remove rib section and deburr all holes.

13.5 Installation of the Stiffener Bracket

13.5.1 Fit Stiffener Brackets (Item 1 and 2 of Table 4) as shown in Figure 7. Position each bracket into the lower rear corner of each Rib 1 Section as tightly as possible (Cleco clamps are suggested) ensuring that the long edge of the bracket is on the lower side of the rib (i.e. the side where the Stabiliser Mounting Channel is) as shown below. Drill the 5 holes through the rib (hole diameter 0.125 – 0.135 in) and debur all holes.

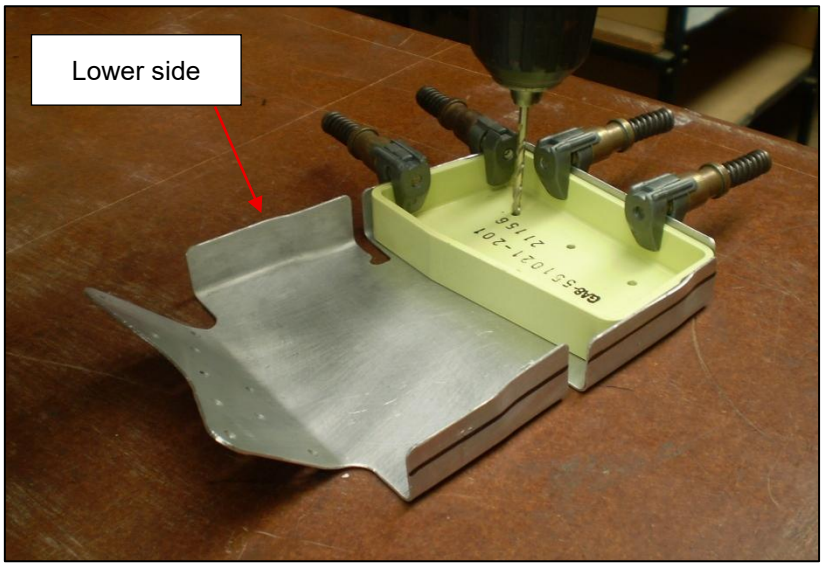

Figure 7: Typical Installation of Stiffener Brackets to Rib Sections

13.5.2 Rivet Stiffener Bracket to each rib using MS20470AD4 rivets.

13.5.3 Rivet each Rib 1 Section complete with Stiffener Bracket to inboard rib forward section using 10 x MS20470AD4 rivets in each rib. See Figure 8. (Left hand side Pictured)

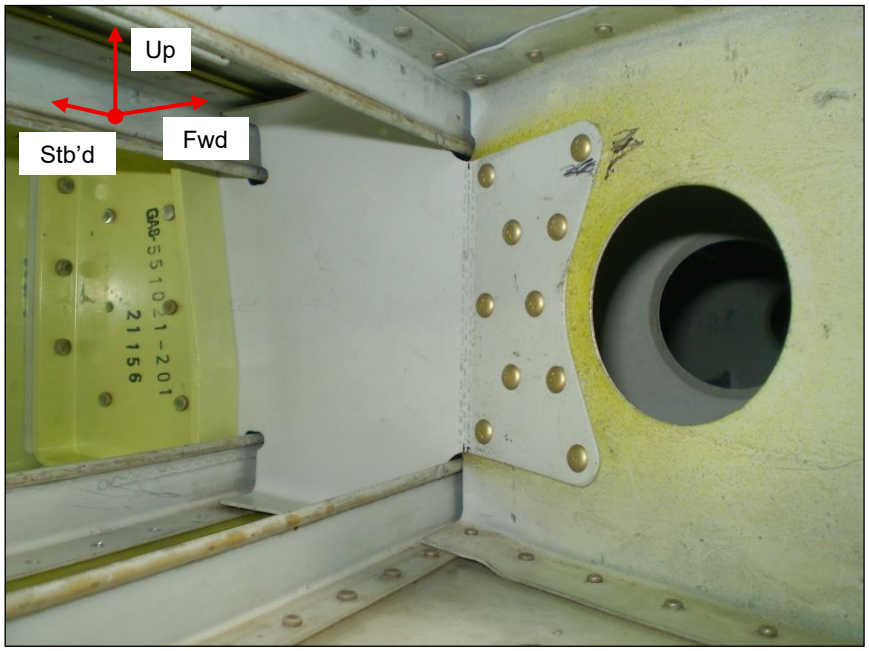

Figure 8: Rib Section and Stiffener Installed

13.6 Replacement of the Rear Spar Doubler (if required)

13.6.1 Position the rear spar assembly to maintain alignment of the 2 spar halves. This can be done using a table with a flat surface and edge clamps.

13.6.2 While being careful not to enlarge any rivet holes, remove all rivets from the cracked Rear Spar Doubler Channel (GA8-551021-017).

13.6.3 Ensure the lower flanges of both rear spars (GA8-551021-015) and the lower flange of the new rear spar doubler (GA8-950075-025) are flush as shown in Figure 9.

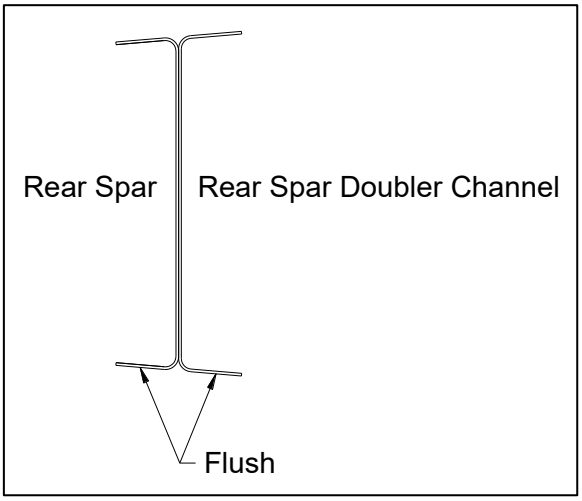

Figure 9: Spar Doubler Alignment

13.6.4 Once the rear spars and doubler are held in position with correct alignment the new doubler may be drilled using the existing holes in the spars (hole diameter 0.125 – 0.135 in for 1/8" solid rivets).

13.6.5 Remove new doubler channel, deburr all holes and rivet in place being careful to maintain spar alignment.

13.7 Refitting the Rear Spar.

13.7.1 Refit the rear spar and the upper and lower doublers into the horizontal stabiliser, align all ribs with spar and pin in place, align spar and doublers to skins using existing holes and pin into position.

13.7.2 Carefully align the mark from step 13.4.4 on both inboard rib lower flanges with the centre of the existing 3/16 inch stabiliser mounting channel holes. This ensures that the holes are drilled through the Stiffener Brackets centred in its flange.

13.7.3 Drill the holes through the Stiffener Brackets undersize, using a 1/8 inch drill, and install a MS35206-218 screw and MS20365-440 nut or similar at each hole in the Stiffener Bracket. Lightly tighten these screws enough to draw the skin, doubler, rib flange and fitting together.

13.7.4 Drill through the vertical face of the load Stiffener Brackets using the existing holes in the inboard elevator hinges as a guide; 3 places each bracket (or 4 places for aircraft fitted with laminated hinges). Drill these holes undersize using 1/8 inch drill and install an MS35206-218 screw and MS20365-440 nut at each hole. Lightly tighten these screws enough to draw the elevator hinge, spar, rib flange and fitting together.

13.7.5 Progressively increase the tension on these screws to pull the Stiffener Brackets back and down into final position. Ensure that there are no gaps at the rear or bottom of the Stiffener Brackets.

13.7.6 Remove undersize screws one at a time and carefully enlarge each hole in the fitting to the final size: Ø0.125 – 0.135 in for 1/8" solid rivets and Ø0.156 – 0.171 for 5/32" solid rivets (see Figure 10). Reinstall each screw after drilling each hole to maintain the fittings position.

13.7.7 When all holes are drilled to their correct size remove the rear spar, debur and remove all swarf from all holes.

NOTE:

As the stabiliser is being riveted make periodic checks of its alignment, any misalignment or twist should be corrected prior to completion.

13.7.8 Reinstall the rear spar aligning all ribs, doublers and the Stiffener Brackets then pin in place.

13.7.9 Remove additional rivets at the top skin from the trailing edge forward along each rib as required to allow the skin to be opened up far enough for access when riveting.

13.7.10 Rivet the spar to each rib using MS20470AD4 rivets (length to suit).

13.7.11 Refit both outboard elevator attach hinges, then pin all other elevator hinges in position. Run a string line through the centres of the outboard hinges and use as a reference to check the alignment of the other hinges. Correct any misalignment prior to riveting in place. Rivets used for hinge installation are MS20470AD4 except that the inboard machined hinges also use MS20470AD5 (see Figure 10; length to suit; rivet lengths provided are for reference only). See also Figure 1.

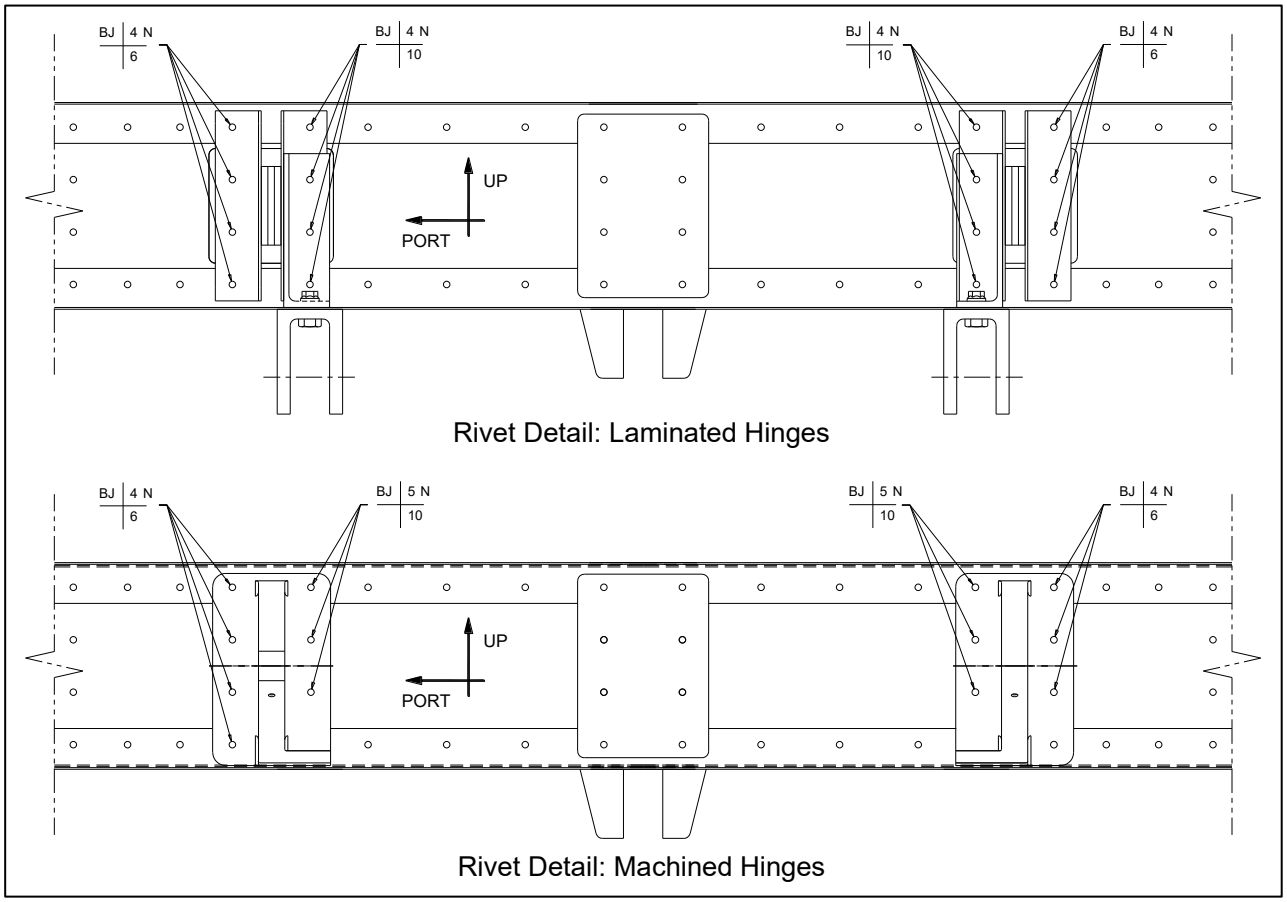

Figure 10: Inboard Hinge Installation (View Looking Forward at Rear Face of Spar)

13.7.12 Rivet lower skin and doublers using MS20470AD3 or MS20470AD4 solid rivets as required, use supplied CR3213-4-1, -2 or -3 CherryMAX rivets only if required.

13.7.13 Rivet upper skin and doublers using MS20470AD3 or MS20470AD4 solid rivets and supplied CR3213-4-1, -2 or -3 CherryMAX rivets as required.

13.7.14 Touch up or repaint stabiliser as required using C1 and C2 (Table 5). Apply internal corrosion treatment as required.

13.7.15 Wet install stabiliser attach brackets using C3 (Table 5).

13.8 Completion

13.8.1 Refit horizontal stabiliser to fuselage and inspect rigging as per the GA8 / GA8-TC 320 Service Manual, Chapter 27-30-10.

13.8.2 Refit stabiliser access panel.

13.8.3 Inspect and refit fin.

13.8.4 Inspect and refit rudder and rudder control cable and verify deflections.

13.8.5 Inspect and refit elevator and elevator control cable and verify deflections.

13.8.6 Carry out rigging checks of elevator and rudder systems as per the GA8 / GA8-TC 320 Service Manual, Chapters 27-20-00 and 27-30-00.

13.8.7 Carry out duplicate inspection of flight control systems as required.

14 Documentation:

Update aircraft logbook to reflect incorporation of this Service Bulletin.

15 Continuing Airworthiness:

There are no new Instructions for Continued Airworthiness associated with this Service Bulletin

16 Compliance Notice:

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

DOCUMENT COMPLIANCE NOTICE

GippsAero	**Document:** **SB-GA8-2009-59** **Issue 2**

Aircraft Serial Number: GA8-_____

Service Bulletin SB-GA8-2009-59, Issue 2 has been incorporated in the above aircraft.

Date of Incorporation:_____

_____
Signed

Print Name: _____

If this Service Bulletin requires any inspections be carried out, describe the result of these inspections:

Please post, fax or email this compliance notice to:

GippsAero Technical Services
P.O. Box 881
Morwell Victoria 3840
Australia
Fax.: +61 03 5172 1201
Email: TECHPUBS@gippsaero.com.au