

# Service Bulletin

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**Subject:**

Horizontal Stabiliser Inspection.

**Applicability:**

All GA8 aircraft, serial numbers GA8-00-004 and above, and GA8-TC 320 model, all serial numbers.  
See Table 1 below.

**Amendments:**

Issue 6 – The inclusion of applicability matrix into the compliance section for improved clarity.

**Background:**

Inspection of a high time aircraft has revealed cracks in the Horizontal Stabiliser rear spar splice plate lower flange and inboard main rib lower flanges around the area of the Horizontal Stabiliser rear pivot attachment bolts.

This Service Bulletin aims to address any problems by five separate inspections. The first is a brief external inspection to indicate any major problems and shall be conducted daily. The other four inspections are a mixture of internal and external inspections as well as some parts replacement to be carried out at the next periodic inspection.

Several Improvements have been made to the Horizontal Stabiliser since the initial issue of this Service Bulletin, these include;

1. Improved Mount channels to reduce possible pre-loading on structure and fasteners, these alleviate any gap that may be found during inspection 3, they were incorporated at manufacture from SNo. GA8-03-024.
2. Additional brackets Pno. GA8-551021-201/202 to more effectively distribute loads through the Horizontal Stabiliser structure. These parts were installed from SNo. GA8-06-115 or in new stabilisers supplied from the 1<sup>st</sup> of January 2007. Refer to Instruction 4.

**Compliance:**

1. For all aircraft not incorporating the changes identified in Instructions 3 and 5, carry out **Instruction 1. Daily Inspection** prior to the first flight of each day. This inspection requirement is cancelled when items 3 and 5 are completed at the next periodic inspection.
2. For all aircraft, carry out the specified **Instruction 2. External Inspection** at the next periodic inspection and at every periodic inspection thereafter (a periodic inspection is defined as a 100 hourly or annual inspection). See Instruction No.2 below. This is a repeat inspection.
3. For all aircraft not incorporating the CNC machined elevator hinges (introduced from Sno. GA8-04-054), carry out **Instruction 3. Rear Pivot Attachment Inspection** of the Horizontal Stabiliser at the next periodic inspection.
4. For all aircraft, **Instruction 4. Internal Inspection** shall be carried out at the next periodic inspection and at every periodic inspection thereafter. This is a repeat inspection. See Instruction No.4 below.
5. If the existing rear attach bolts are AN3, perform **Instruction 5. Rear Attach Bolt Replacement** at the next periodic inspection. See Instruction No.5 below.

	<u>Instr. 1</u>	<u>Instr. 2</u>	<u>Instr. 3</u>	<u>Instr. 4</u>	<u>Instr. 5</u>
Recurrence	Repeat until Ins 3 & 5 is incorporated	Repeat	Once Off	Repeat	Once Off
Inspection Interval	Daily	100h/ annually	Next Periodic Inspection (100h/annual)	100h/ annually	Next Periodic Inspection (100h/annual)
A/C Serial Numbers	-004 to -053	All SN's (NA and TC 320)	-004 to -053	All SN's (NA and TC 320)	-004 to -053

**Table 1: Applicability Matrix**

**Weight and Balance:**

Negligible.

**Parts:**

**For list of required parts see tables within individual instructions.**

**Parts Availability:**

New parts can be obtained directly from Gippsland Aeronautics.

Tel.: +61 03 5172 1200

Fax.: +61 03 5172 1201

Email: [spares@gippsaero.com](mailto:spares@gippsaero.com)

## Instructions:

### 1. Daily inspection (Stabilizer attach bolt)

1. Daily, visually inspect the integrity of the rearmost vertical Horizontal Stabiliser attach bolt and nut on both left and right sides, see Figure 1. This inspection can be carried out externally to the aircraft without removing any fairings or structure.

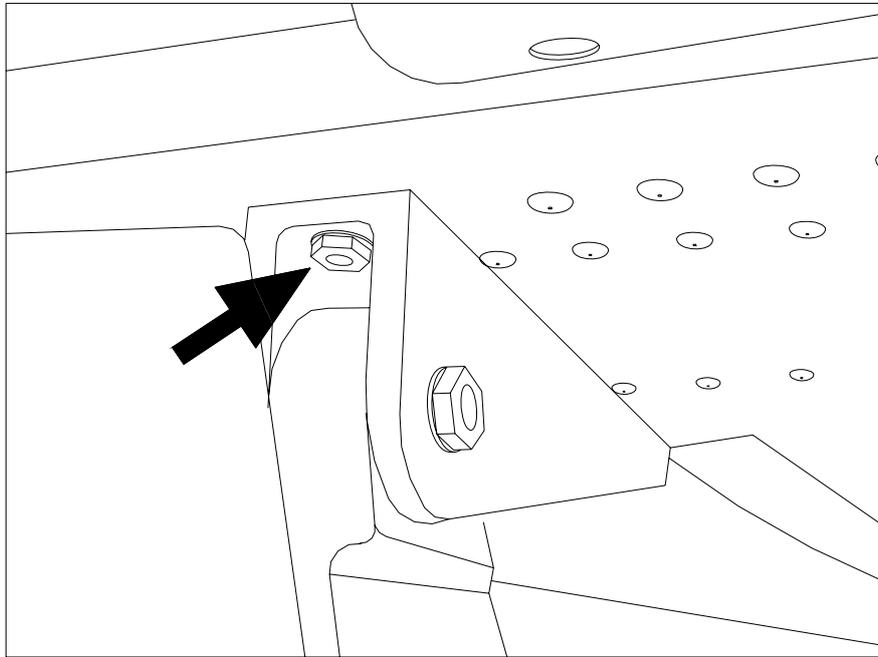


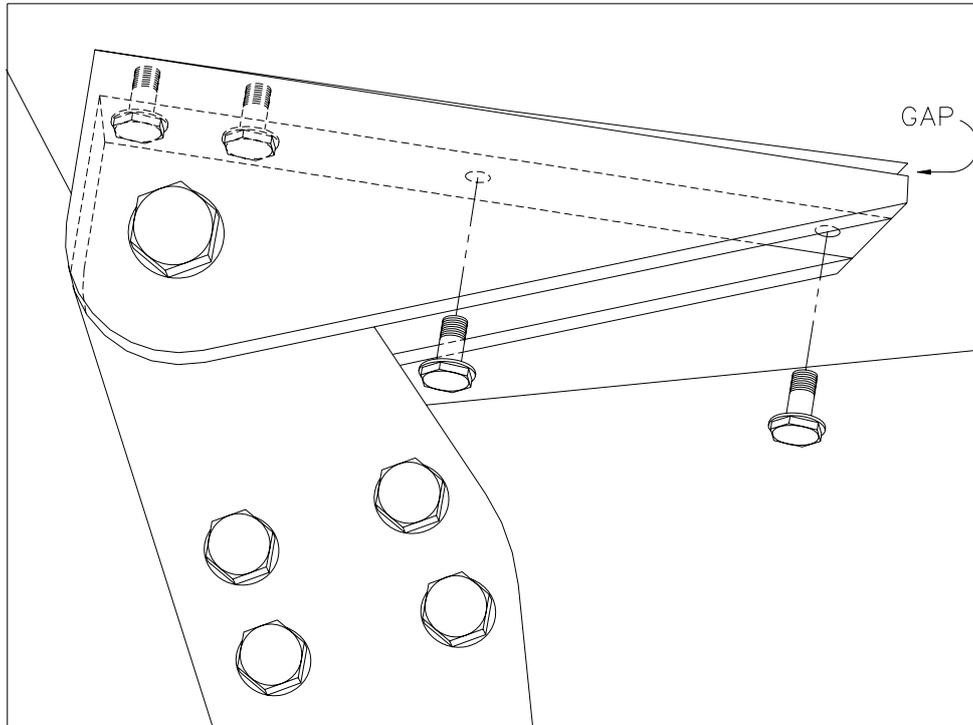
Figure 1

### 2. External Inspection (Lower flange, Stabilizer rear spar)

1. Visually inspect for cracking externally along the rear spar lower flange in the vicinity of the Horizontal Stabiliser rear pivot attachment, particularly just inboard and outboard of the elevator pivot attachment. Check also for working rivets on the inboard elevator pivot attachment to the Horizontal Stabiliser rear spar.
2. Unscrew the lower Horizontal Stabiliser fairing and allow it to drop into the cover. With the aid of an assistant, rock the Horizontal Stabilizer tip vertically up and down by approximately  $\frac{1}{2}$  an inch whilst watching the Horizontal Stabiliser rear pivot attachment. Look for any movement between the pivot attachment and the stabilizer lower skin, and any excessive local deflection or movement of the lower skin surrounding the pivot attachment. Repeat procedure on the other side. Re-attach the lower Horizontal Stabilizer fairing.

### 3. Rear Pivot Attachment Inspection

1. Remove the lower Horizontal Stabiliser fairings.
2. Unscrew the two front bolts from each pivot attachment, leaving the rear two bolts done up tight, as shown in Figure 2. Anchor nuts were used to retain these bolts on early aircraft. Later aircraft have loose nuts (MS21042-3) and washer (AN960-10), access to which can be gained through the upper Horizontal Stabiliser access panel.



**Figure 2**

#### **NOTE:**

*From SNo. GA8-03-024 modified mount channels PNo. GA8-551021-77 and from SNo. GA8-06-090, PNo. GA8-551021-101 have been installed which incorporate a profile to more closely match the lower surface of the Horizontal Stabiliser.*

3. If a gap appears, as indicated, manufacture a tapered packer from 2024-T3 Aluminium sheet metal, 1.25" wide and as long as required to fill the gap.
4. Coat the packer with suitable primer and paint.
5. Install the packer and reinstall bolts. Torque bolts to 20-25 in lb. Follow instruction as recommended by AC43.13-1b, Section 7.40 in torquing bolts with friction locking nuts.
6. Re-install the lower Horizontal Stabiliser fairings.

### 4. Internal Inspection

1. Remove the upper Horizontal Stabiliser fairings.
2. If the Horizontal Stabiliser contains a centreline upper skin access panel, remove the panel and proceed to point 5.
3. Unscrew the lower Horizontal Stabiliser fairings. Disconnect the control cables from the Rudder and the pushrods from the Elevators. Remove Dorsal Fin and disconnect Fin electrical wiring. Remove the Rudder and then the Fin. Restrain the Elevators in the neutral position and carefully remove Horizontal Stabiliser/elevators assembly from the aircraft.
4. Cut an access hole as per Figure 3, attach anchor nuts as per Figure 4.

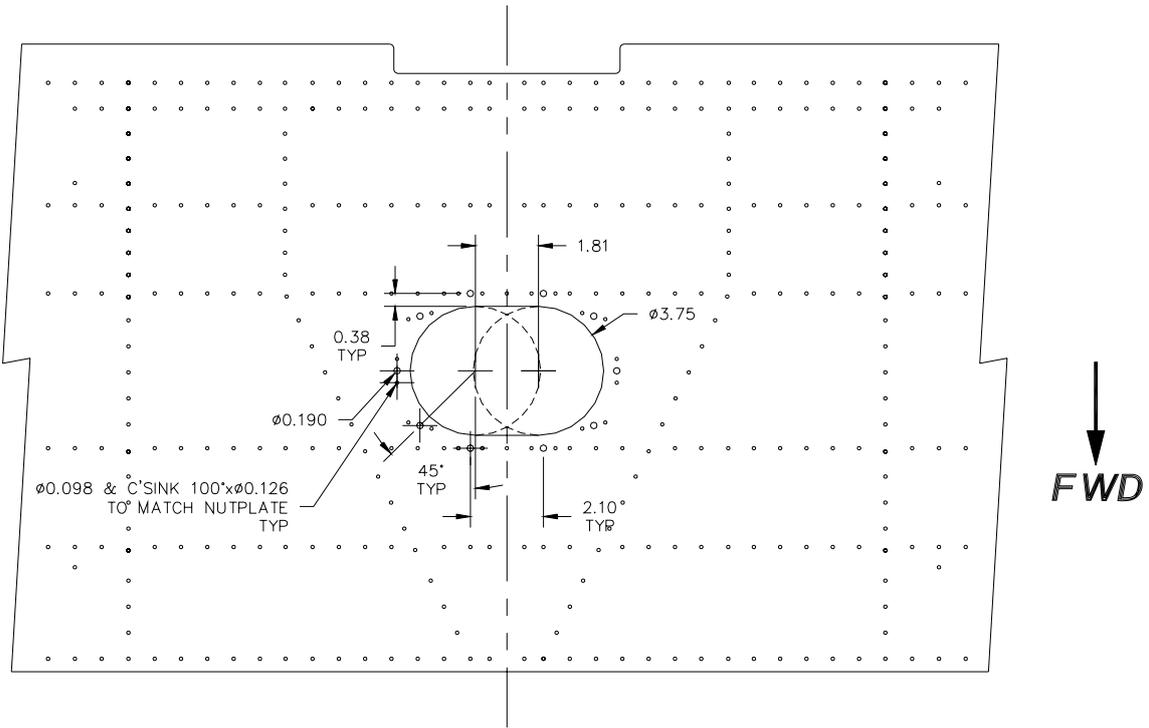


Figure 3

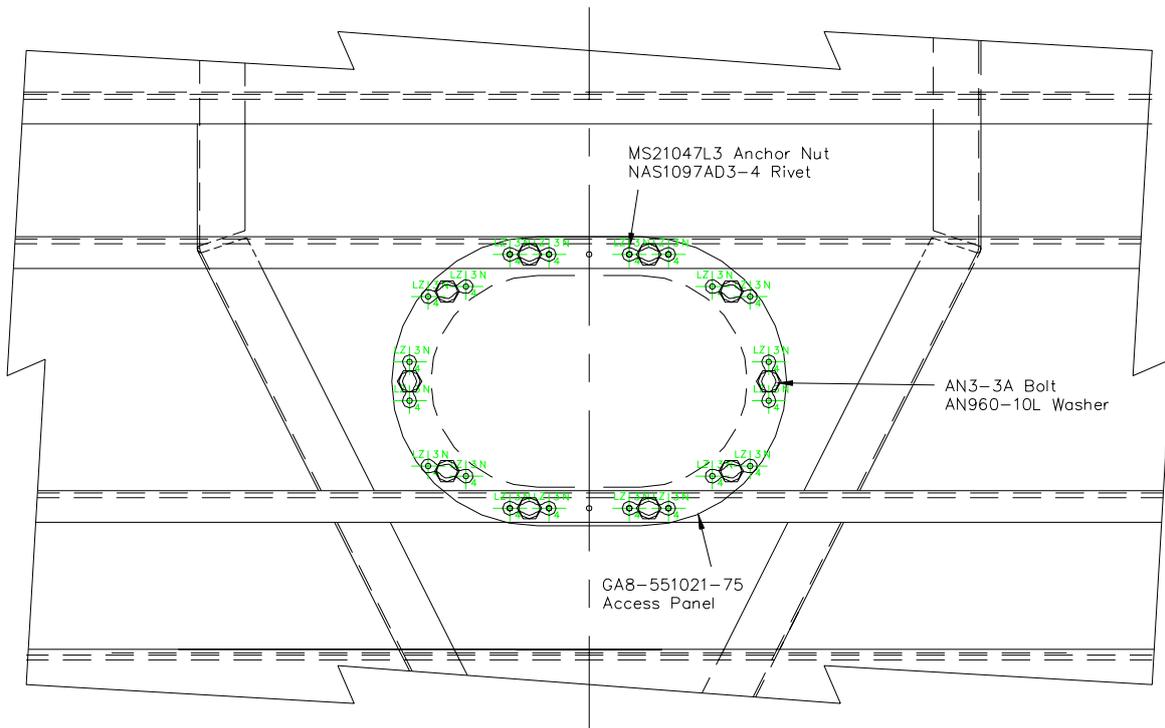
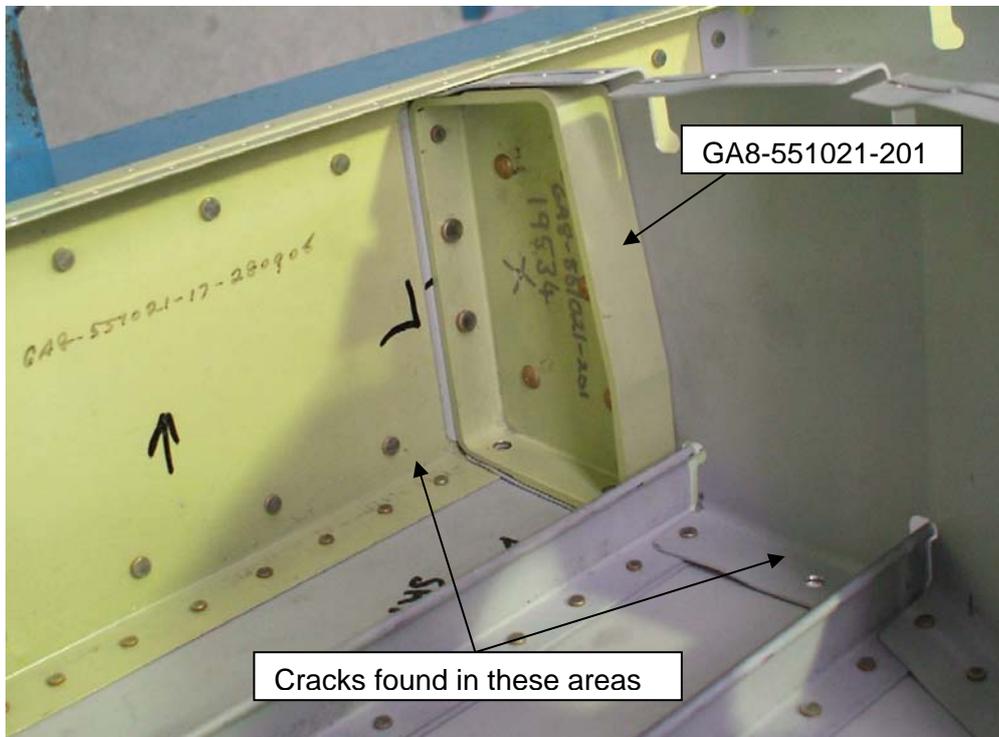


Figure 4

Item	Part Number	Description	Qty
The following parts are required only when performing internal inspection and only if the access panel is not already fitted.			
1	GA8-551021-75	Access Cover	1
2	AN3-3A	Bolt	10
3	AN960-10L	Washer	10
4	MS21047L3	Anchor Nut (or equivalent)	10
5	NAS1097AD3-4	Countersunk rivet	20

**Table 2: Bill of Materials if access panel is not already fitted**

5. Visually inspect for cracking in the lower flange of the rear spar splice plate and in the inboard ribs around the Horizontal Stabiliser rear pivot attachment.
6. Horizontal stabilisers manufactured after 1 January 2007 have load transferring fittings Pno. GA8-551021-201/202 installed. Inspect the area around these parts, refer to Figure 5.



**Figure 5**

Part Number GA8-551021-201 Installed (top skin not fitted)

7. If cracking is found, contact the manufacturer immediately.
8. If no cracking is found, attach the access panel with bolts and washers specified in Figure 4.
9. If the Horizontal Stabiliser was removed from the aircraft, install in accordance with the GA8 Service Manual. Re-rig aircraft and carry out duplicate inspection of the controls.

## 5. Rear Attach Bolt Replacement

1. Remove the rearmost vertical Horizontal Stabiliser attach bolt and nut from both left and right sides as indicated in Figure 1.
2. If the bolt and nut mating faces are damaged or not square, replace the parts.
3. Install new NAS6603-8 bolts in place of existing AN3 bolts, install new MS21042-3 nuts. Ensure both bolt and nut sit square to surrounding material. Use AN960-10 washers under the nut as required. Torque bolts to 20-25 inlb. Follow instruction as recommended by AC43.13-1b, Section 7.40 in torquing bolts with friction locking nuts.

### **CAUTION:**

#### **DO NOT OVER TORQUE THE BOLTS.**

4. Compliance with this instruction and instruction 3 (Rear Pivot Attachment Inspection) cancels the requirement to perform the Daily Visual Inspection of this area.

Item	Part Number	Description	Qty
1	NAS6603-8	Bolt	2
2	MS21042-3	Nut	2
3	AN960-10	Washer	A/R

**Table 3: Bill of Materials for Instruction 5**

## Documentation

Update aircraft log book to reflect incorporation of this Service Bulletin.

## Compliance Notice

Complete the Document Compliance Notice and return to Gippsland Aeronautics by fax or mail.

## Approval:

The technical aspects of this Service Bulletin have been approved under a CASA Authorisation.

## DOCUMENT COMPLIANCE NOTICE



Publication: Service Bulletin

SB-GA8-2002-02 Issue 6 **Mandatory**

Horizontal Stabilizer Inspection

Issue Date: 21 April 2010

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

Service Bulletin SB-GA8-2002-02 Issue 6 has been incorporated in the above aircraft.

Date: \_\_\_\_\_

Signed \_\_\_\_\_

On behalf of (*company name*): \_\_\_\_\_

Please post fax or email this compliance notice to:

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