
AIRWORTHINESS DIRECTIVE

On the effective date specified below, and for the reasons set out in the background section, the CASA delegate whose signature appears below revokes Airworthiness Directive (AD) AD/GA8/5 and issues the following AD under subregulation 39.001(1) of CASR 1998. The AD requires that the action set out in the requirement section (being action that the delegate considers necessary to correct the unsafe condition) be taken in relation to the aircraft or aeronautical product mentioned in the applicability section: (a) in the circumstances mentioned in the requirement section; and (b) in accordance with the instructions set out in the requirement section; and (c) at the time mentioned in the compliance section.

Gippsland Aeronautics GA8 Series Aeroplanes

**AD/GA8/5
Amdt 1**

Horizontal Stabiliser Inspection

3/2007

Applicability: All GA8 aircraft, serial numbers GA8-00-004 and up.

Requirement: **1. Daily inspection (Stabiliser attach bolt)**

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

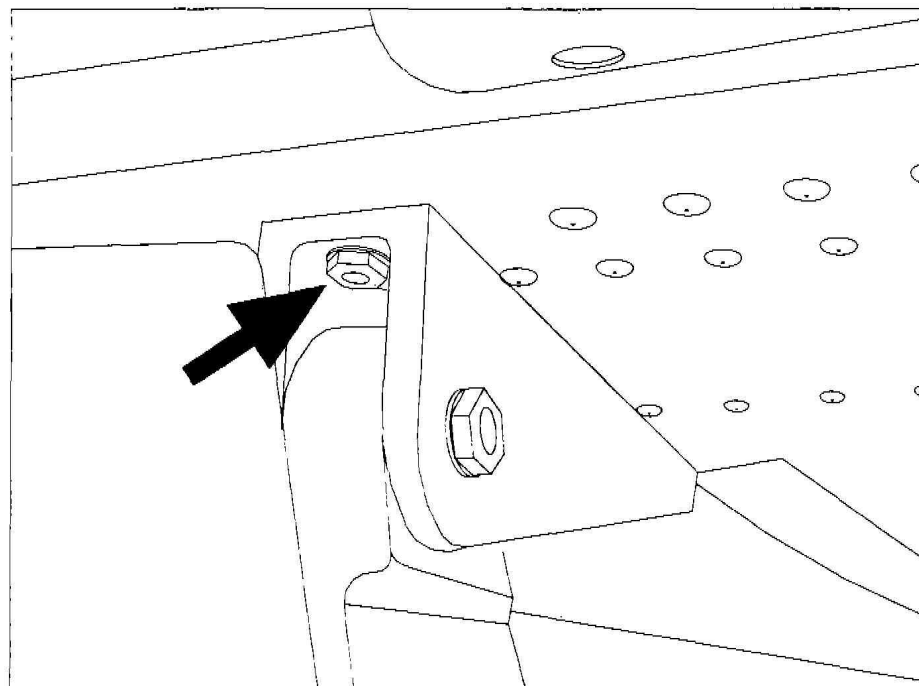


Figure 1 - Horizontal Stabiliser Attach Bolt

2. External Inspection (Lower flange, Stabiliser rear spar)

- (a) 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.

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- (b) 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 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

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

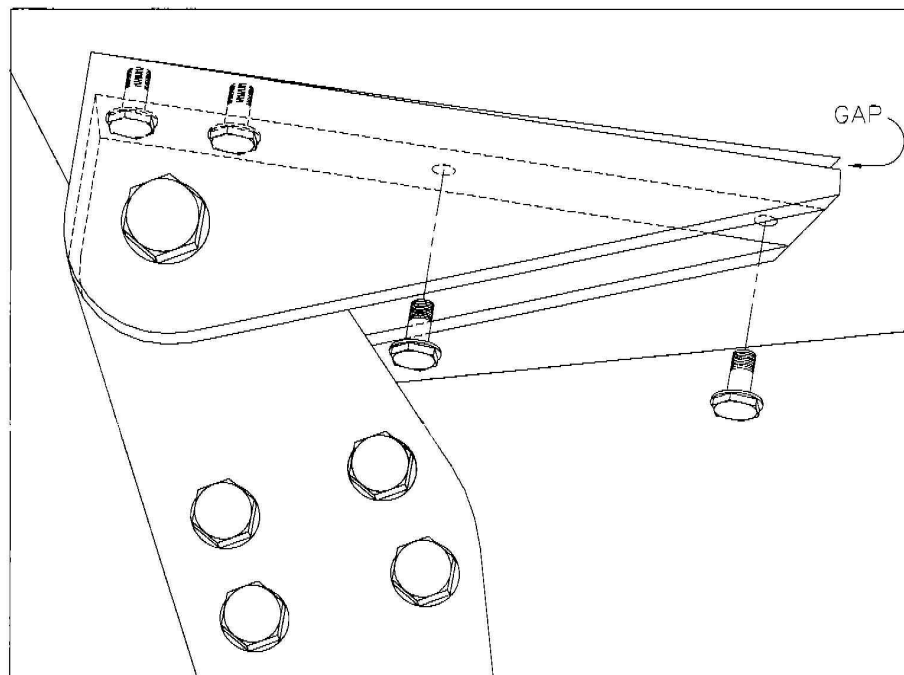


Figure 2 - Rear Pivot Attachment

- (c) If a gap appears, as indicated in Figure 2 above, manufacture a tapered packer from 2024-T3 Aluminium sheet metal, 1.25" wide and as long as required to fill the gap.

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- (d) Coat the packer with suitable primer and paint, as specified in the GA8 Service Manual.
- (e) Install the packer and reinstall bolts. Torque bolts to 20-25 in lb. Follow instruction as recommended by AC43.13-lb, Section 7.40 in torquing bolts with friction locking nuts.
- (f) Replace the lower Horizontal Stabiliser fairings.

4. Internal Inspection

- (a) Remove the upper Horizontal Stabiliser fairings.
- (b) If the Horizontal Stabiliser contains a centreline upper skin access panel, remove the panel and skip to part (e).
- (c) 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.
- (d) Cut an access hole as per the figure 3 below.

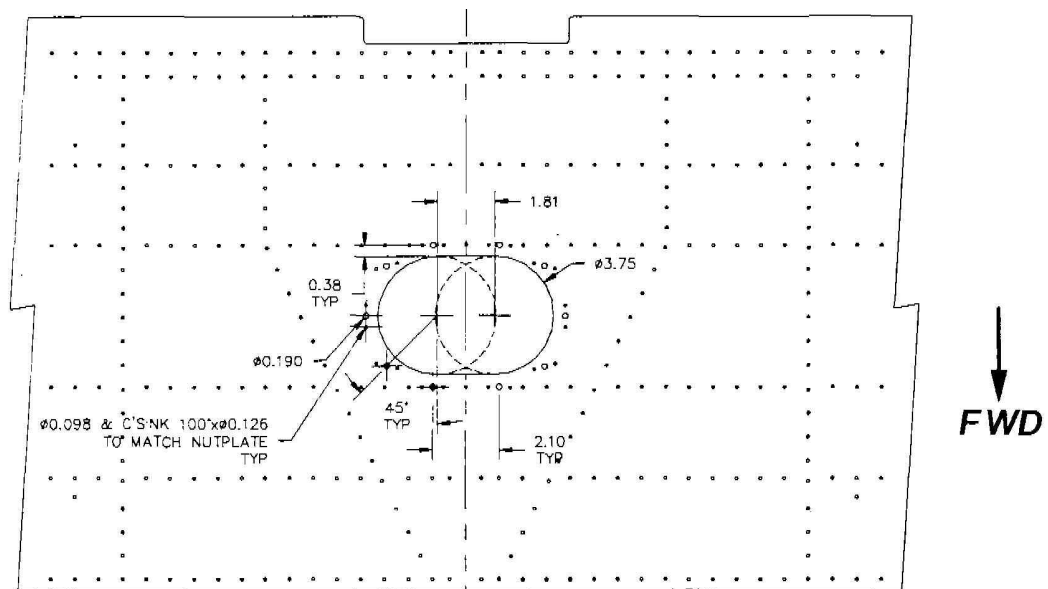


Figure 3 - Access hole

- (e) 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.

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- (f) If cracking is found, contact the manufacturer immediately.
- (g) If no cracking is found, attach anchor nuts as per the figure 4 below. Attach access panel with bolts (or screws) and washers specified.

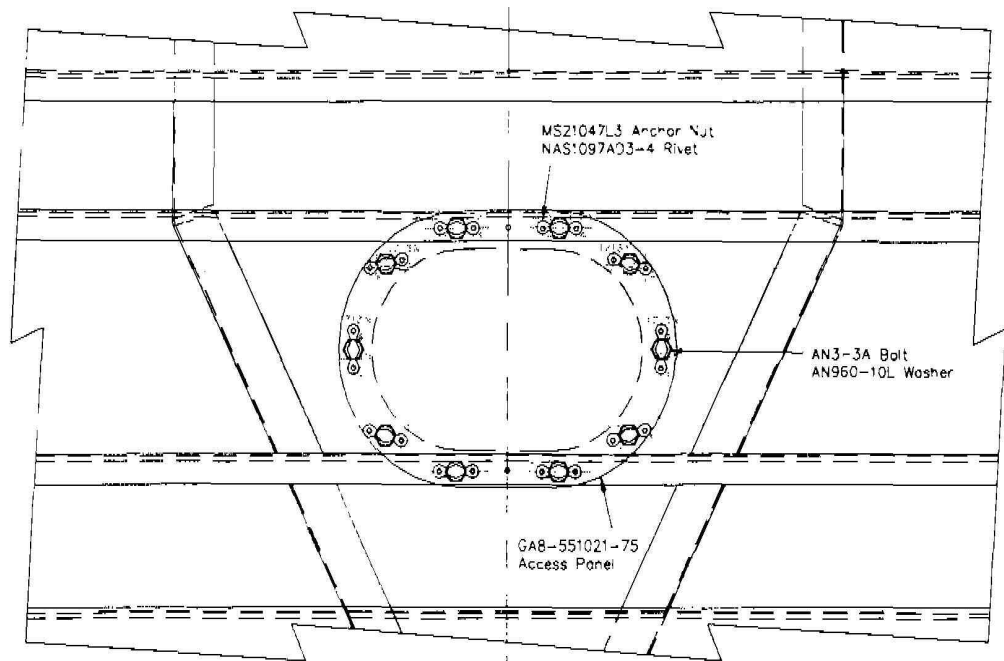


Figure 4 - Access hole with anchor nuts installed

- (h) If the Horizontal Stabiliser was removed from the aircraft, with reference to the GA8 Service Manual, replace components in the opposite order to that removed. Re-rig aircraft and carry out dual inspection.

5. Rear Attach Bolt Replacement

- (a) Remove the rearmost vertical Horizontal Stabiliser attach bolt and nut from both left and right sides as indicated in figure 1.
- (b) **Ensure the bolt and nut mating faces are square.** Spotface either side as required.
- (c) Install new **NAS6603-8** bolt and MS21042-3 nut. Ensure both bolt and nut sit square to surrounding material. Use AN960-10 washers under the nut as required. Torque bolts to 20-25 in lb. Follow instruction as recommended by AC43.13-lb, Section 7.40 in torquing bolts with friction locking nuts.
Caution - do not over torque the bolt.
- (d) Compliance with this part and part 3 (Rear Pivot Attachment Inspection) cancels the requirement to perform the Daily Visual Inspection of this area.

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After accomplishing this Airworthiness Directive, complete the Document Compliance Notice contained in Gippsland Aeronautics Mandatory Service Bulletin SB-GA8-2002-02 Issue 3, and forward to Gippsland Aeronautics at the address provided.

Note: The requirements of this AD are fully contained in Gippsland Aeronautics Mandatory Service Bulletin SB-GA8-2002-02 Issue 4, dated 4 January 2007.

Parts required to perform this Airworthiness Directive

Item	Part Number	Description	Qty
1	NAS6603-8	Bolt	2
2	MS21042-3	Nut	2
3	AN960-10	Washer (as required)	

The following parts are required only when performing internal inspection and only if the access panel is not already fitted.

4	GA8-551021-75	Access Cover	1
	AN3-3A (or AN525-10R6)	Bolt (Screw)	10
	AN960-10L	Washer	10
	MS21047L3	Or equivalent Anchor Nut	10
	NAS1097AD3-4	Countersunk rivet	20

- Compliance:
1. For all aircraft not incorporating the changes identified in Requirement 3 and 5, carry out the Daily Inspection prior to the first flight of each day. This inspection requirement is cancelled when Requirements 3 and 5 are completed at the next *periodic inspection.
 2. For all aircraft, carry out the specified External Inspection by the next periodic inspection and at every periodic inspection thereafter.
 3. For all aircraft not incorporating the CNC machined elevator hinges, carry out Rear Pivot Attachment Inspection by the next periodic inspection.
 4. For all aircraft, an Internal Inspection shall be carried out by the next periodic inspection and at every periodic inspection thereafter.

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5. Unless already fitted, for all applicable aircraft, perform Rear Attach Bolt Replacement by the next periodic inspection.

***Note:** a periodic inspection is defined as a 100 hourly or annual inspection, whichever comes first.

This Amendment becomes effective on 15 March 2007.

Background: Inspection of a high time aircraft has revealed cracks in the Horizontal Stabiliser rear spar splice plate and inboard main ribs around the area of the Horizontal Stabiliser rear pivot attachment. Additionally, failure of some attach bolts in service may be due to improper assembly.

This Airworthiness Directive addresses the problem using 5 separate inspections. The first is a brief daily external inspection. The other 4 inspections are a mixture of internal and external inspections as well as some parts replacement to be carried out at the next periodic inspection.

This amendment is issued to correct the Horizontal Stabiliser rear attach bolt part number to specify a new NAS6603-8 bolt. Requirement 5 (c) of this AD refers.

The original issue of this AD became effective on 15 February 2007.



David Villiers
Delegate of the Civil Aviation Safety Authority

24 January 2007