

ALERT SERVICE BULLETIN



Service Bulletin No.: DAC1-55-01A Rev 3

Date Issued: March 30, 2001

Title: Horizontal Stabilizer Attachment

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DIAMOND AIRCRAFT HIGHLY RECOMMENDS COMPLIANCE

- 1. ATA Code:** 5500
- 2. Effectivity:** Diamond Aircraft model DA20-C1 serial numbers C0001 to C0153.
- 3. General:** There has been one case of a broken front stabilizer mount rod-end. It appears that the rod end failed in fatigue after initial damage to the rod-end from an undetermined cause. The stabilizer has evidence of impact damage. The aircraft landed safely without further incident.
As a precaution this alert service bulletin specifies the replacement of the horizontal stabilizer forward mounting rod end bearing with a total time exceeding 300 hrs with a purpose built replacement assembly.
This revision adds the requirement for installing the lower stabilizer-mounting bracket using an epoxy adhesive.
- 4. Compliance:** At the next scheduled 100-Hour inspection or before the horizontal stabilizer rod-end bearing reaches 300 hrs whichever occurs first.
- 5. Approval:** Engineering data referenced or contained in this Alert Service Bulletin is approved as part of the type design.
- 6. Labour:** Approximately 2 hours will be required to accomplish this Service Bulletin.

7. Material:	Part Number	Description	Quantity Required
	22-5300-62-01	Forward Lower Mounting Bracket	1
	MS20365-1032	Nut, Self locking (or MS21044N3)	2
	AN3-10A	Bolt	2
	AN960-10	Washer, flat	4
	MS21042-4	Nut, Self locking	2
	AN4-5A	Bolt	2
	AN960-416	Washer, flat	2
	AN960-416L	Washer, thin	2
	22-5500-00-01	Shim	3
	DJ22-5300-62-01	Tool for locating holes (On Loan)	1
The above materials may be ordered as a kit DAC1-55-01-AMK0			

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Not Supplied DP110

Epoxy Adhesive (3M product)

15mL (1/2
oz)

Sandpaper

120 Grit Sandpaper

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8. Special Tools and Materials: Drill jig DJ22-5300-62-01

9. References: DA201-C1 Aircraft Maintenance Manual (AMM)

10. Accomplishment Instructions:

- 10.1. Remove the horizontal stabilizer fairing.
- 10.2. Remove the rudder. Reference the Aircraft Maintenance Manual (AMM) chapter 55-40-00 page 201.
- 10.3. Remove the elevator vertical control rod.
- 10.4. Measure the distance X as shown in figure 1. Record the result, this measurement is used during assembly to ensure that the horizontal stabilizer is installed at the correct angle of incidence.
- 10.5. Remove the bolt that connects the forward mounting bracket to the rod-end bearing.
- 10.6. Remove the four bolts that attach the horizontal stabilizer mount plate to the vertical stabilizer.
- 10.7. Disconnect the co-axial cable from the antenna and lift the horizontal stabilizer clear of the airplane.
- 10.8. Remove the rod-end bearing from the vertical stabilizer.
- 10.9. Position the supplied drill jig onto the top surface of the vertical stabilizer as shown in figure 2. Drill two 3/16" diameter holes through top of vertical stabilizer.
- 10.10. Remove the drill jig.
- 10.11. Clean the vertical stabilizer top surface in the area of forward attachment with de-natured alcohol. Scuff the surface in the area of the forward attachment with 120-grit sandpaper. Reference figure 2.
- 10.12. Scuff bottom of the supplied forward lower mounting bracket with 120 grit sandpaper.
- 10.13. Install the new forward lower mounting bracket to the horizontal stabilizer top bracket with the bolts loose. Reference figure 3.
- 10.14. Place the horizontal stabilizer in position on the vertical stabilizer and connect the co-axial cable. Install and torque the four rear attaching bolts to 15.3 ft.lbs.
- 10.15. Check the fit of the lower forward attachment bracket to the top surface of vertical stabilizer. Shimming may be required to achieve the same dimension X as measured previously; or if the gap is tapered. Remove the peel-ply from both sides of shims (peel-ply is the outermost layer of material). Dry fit shims. Shims may be sanded to the correct thickness and taper to fill gap to achieve dimension X.

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- 10.16. Check fit the AN3 bolts to ensure that the length is correct. Washers and/or different length bolts maybe used to ensure proper thread engagement.
- 10.17. Disassemble the forward assembly leaving the rear attachment torqued.
- 10.18. Clean the previously fitted shims (if fitted), the lower mounting bracket and vertical stabilizer top surface with de-natured alcohol to prepare for epoxy adhesive application.

Assembly Instructions

NOTE

The working time of the epoxy is 8-10 minutes have all assembly components and tools ready prior to mixing.

- 10.19. Prepare the epoxy by mixing equal amounts of resin and hardener. Mix for at least 1 minute after it becomes uniform color. Apply epoxy to all contact faces between the lower mounting bracket and vertical stabilizer top surface including the shims if fitted. Install the hardware as shown in figure 3 and torque to 45-50 in lbs (this torque value includes the friction of the locking nut). Allow the epoxy to squeeze out around the bracket and into fastener holes. Remove excess epoxy but leave a small fillet surrounding the lower bracket assembly.
- 10.20. Torque the two AN4-5A bolts to 50-70 in lbs. Reference Figure 3.
- 10.21. Install the elevator vertical control rod. Install new cotter pins.
- 10.22. Install the rudder. Reference the Aircraft Maintenance Manual (AMM) chapter 55-40-00 page 201.
- 10.23. Allow the adhesive to fully cure at room temperature 20 C (68 F) for a minimum of 8 hours.
- 10.24. Install the horizontal stabilizer fairing.
- 10.25. Record in the aircraft's maintenance log that Alert Service Bulletin **DAC1-55-01A REVISION 3** has been accomplished.

11. Credit:Labour Credit: A labor credit of 2 hours is available.

Replacement Part Credit: Parts are available at no charge from Diamond Aircraft Industries Canada for a period 90 days from the issue date of this Service Bulletin.

Drill Jig On loan Deposit: A deposit is required for the drill jig tool. This deposit is refunded in full upon the return of the tool in good working order to Diamond Aircraft Industries Canada.

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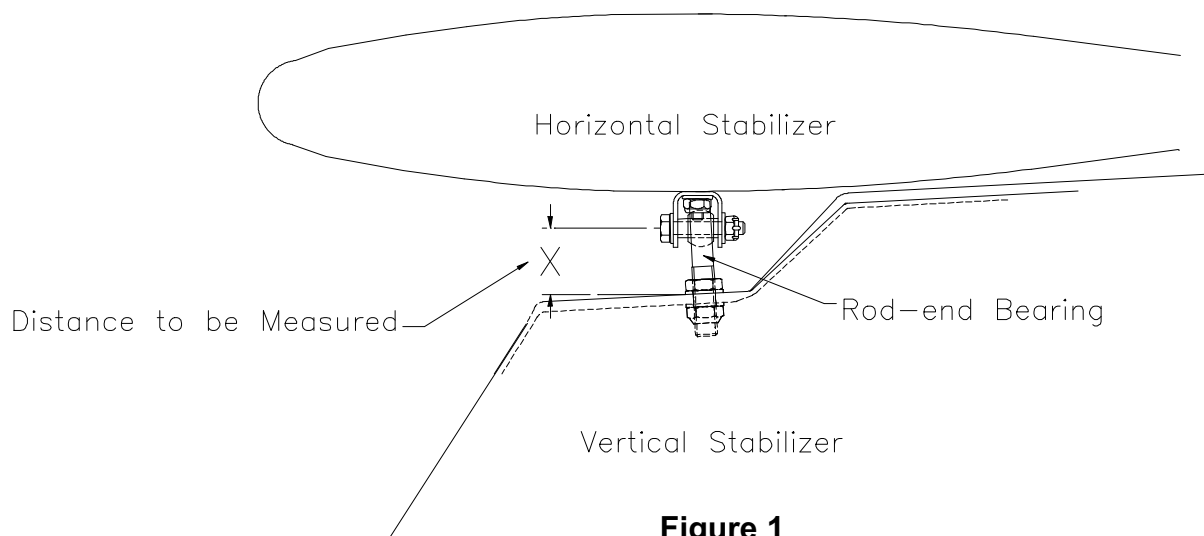


Figure 1
Vertical Stabilizer Side View

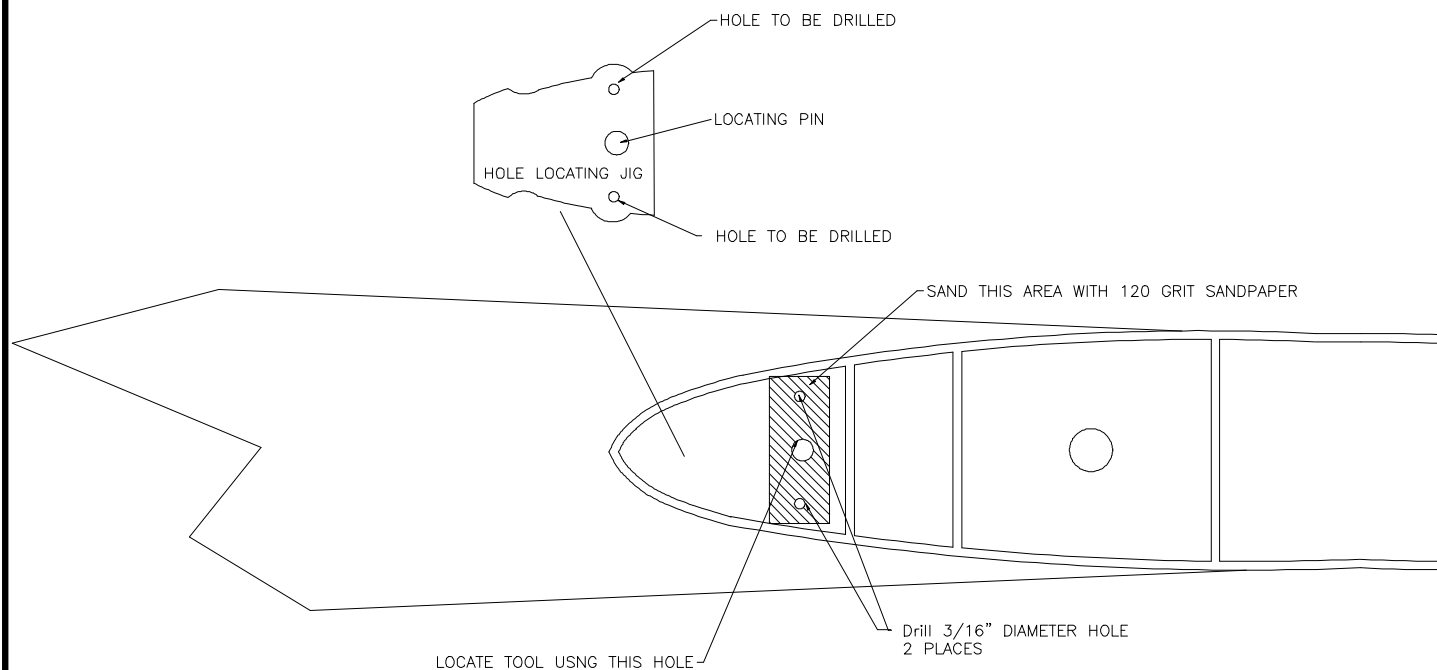


Figure 2
Vertical Stabilizer Looking Down

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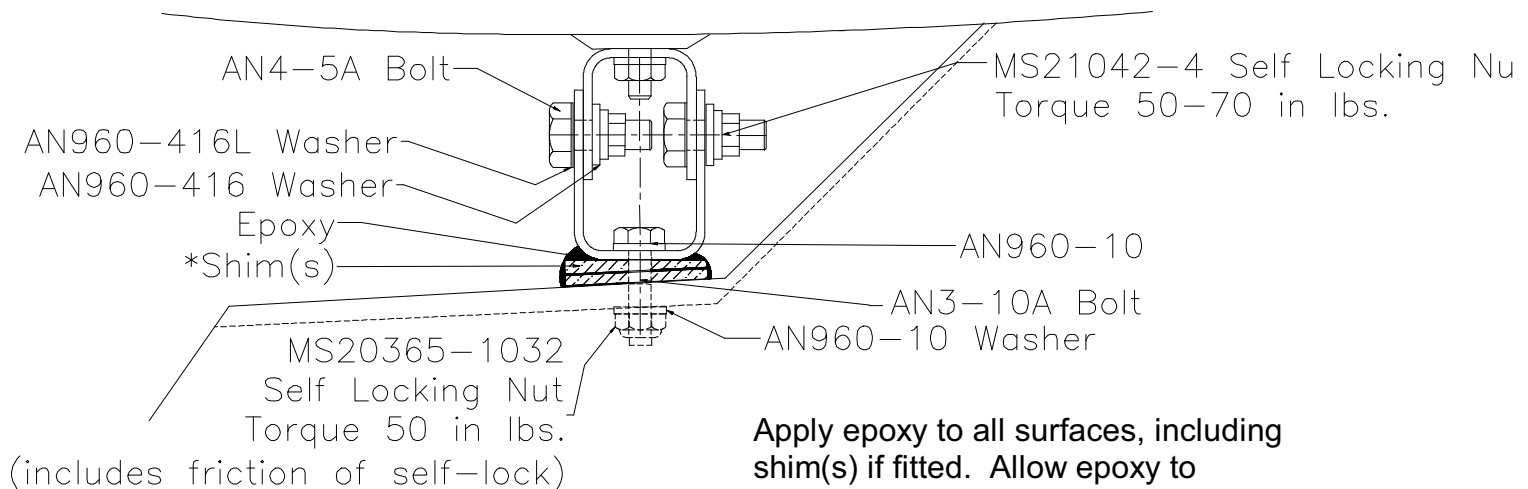


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* Taper a shim if necessary to provide full contact between lower attachment bracket and vertical stabilizer top surface.

Apply epoxy to all surfaces, including shim(s) if fitted. Allow epoxy to squeeze out around the bracket and into the bolt holes. Leave a small fillet of epoxy around the assembly. Leave epoxy in the bolt holes. Remove excess epoxy.

**Figure 3
Final Assembly**

To obtain satisfactory results, procedures specified in this Service Bulletin must be accomplished in accordance with accepted methods and current government regulations. Diamond Aircraft Industries Inc. cannot be responsible for the quality of work performed in accomplishing the requirements of this Service Bulletin. Diamond Aircraft reserves the right to void continued warranty coverage in the area affected by this Service Bulletin if it is not incorporated.

If you no longer own the aircraft to which this Service Bulletin applies, please forward it to the current owner and send the name of the current owner to Diamond Aircraft Industries Inc., at the address below.

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