

COMMONWEALTH OF AUSTRALIA

DEPARTMENT OF TRANSPORT

AIRWORTHINESS DIRECTIVE GLIDERS

GFA AD/131 FFA 5

GLIDER TYPES AFFECTED: Diamant 16.5 and 18 Serial Nos. 11 - 80

BACKGROUND:

Scatter in bonding of shear web cannot be ruled out.

REQUIRED ACTION:

Carry out the instructions for re-inforcement of the R.H. wing stub spar as per the attached Diamant Service Bulletin No. 08 (comprising 7 pages).

COMPLIANCE:

This directive is mandatory.

This directive is issued pursuant to Air Navigation Regulations under the delegated authority of the Secretary of the Department of Transport.

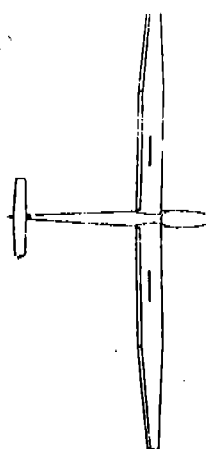


(Douglas Lyon)  
CHIEF TECHNICAL OFFICER AIRWORTHINESS  
GLIDING FEDERATION OF AUSTRALIA

Date of Issue: 20th February, 1979.

**SERVICE BULLETIN**Mandatory

Page 1 of 3

REINFORCEMENT OF RIGHT WING STUB SPAR**1. Planning information:****1.1 Applies to the following gliders:**

- Type: DIAMANT 16,5 and 18
- Serial Nos.: 11 - 80

**1.2 Reason:** Scatter in bonding of shear web cannot be ruled out.**1.3 Purpose of the present bulletin:** Instruction for reinforcement of the RH wing stub spar.**1.4 Compliance:** Mandatory before lifting restrictions of Service Bulletin No. 06, but not later than after 1500 flying hours for S/N 26÷80 and 1000 hours for S/N 11÷26. See also page 2, para 2 and 3.**1.5 Approval:** Approved by Swiss Federal Air Office for Airworthiness Directive**1.6 Man power:** 15 man-hours**1.7 Materials:** Kits SK HBV-191 and SK HBV-194 available from REPAIR AG CH-9423 Altenrhein Switzerland at owners cost**1.8 Tools:**

- Bolt removing tool
- Grinding equipment:
  - centre drill
  - face grinder 5/8" dia.
- Expanding Reamer 5/8" dia.

 } or step grinder
**1.9 Weight:** + 2,5 lb**1.10 Balance:** Negligible effect: Arm 13,58 in (345 mm)**1.11 Reference to other publications:** Repair Manual FV 816, Flight Manuals FV 818, FV 819 (D16,5), FV 820, FV 821 (D18)

1.12 Execution: The reinforcement work shall be performed by an approved fiberglass glider repair shop, e. g.

Europe: REPAIR AG, CH-9423 Altenrhein  
Switzerland

Austria: Flughafen Wien  
Betriebsgesellschaft  
Segelflugzeugwerkstätte  
A-1300 Wien

Great Britain: John Hulme  
10 Turnbridge Lane,  
Bottisham, Cambs.,  
England.

USA: - Fred Jiran Glider Repairs  
Mojave Airport, Bldg. 6  
Mojave, Calif. 93501  
- Avtec Corp. 1433 Industrial  
Way  
P.O.Box 1328  
Gardnerville,  
Nevada 89410  
USA  
- Sprague Aviation  
Glenside Circle  
Lafayette, Calif. 94549  
USA  
- Smitty's Soaring Service  
Deansboro Road RT 12 B  
Clinton, New York 13323  
USA

South Africa: J.C. Dunbar & Sons  
Dunbar House 684  
Main Pretoria Rd.  
Johannisburg  
South Africa 786-2720

\* Australia

## 2. Accomplishment instructions

For DIAMANT 16.5 S/N 11 - 25 and D 18 (all): Appendix I

For DIAMANT 16.5 S/N 37 - 51, 58 - 68: Appendix II,  
after 3000 flying hours : Appendix I

After complying with the Service Bulletins 07 and 08 the restrictions of Service Bulletin no. 06 are no longer applicable and the glider is cleared to fly within the limitations of the Flight Manual. Service Bulletin 06 is cancelled.

## 3. Periodic inspections

3.1 After reinforcement of the wing stub spar, inspect the fittings every 100 flying hours, but at least once a year and after hard landings, for cracks, looseness and other defects.

3.2 Inspect the fittings of not reinforced wing stub spar every 50 hours, but at least once a year and after hard landings.

### \* Australia

Glider Repair and Overhaul Services, Tocumwal Aerodrome, Tocumwal, N.S.W. 2714.  
Bacchus Marsh Aviation Services, Aerodrome, Bacchus Marsh, Vic., 3340.  
Edmund Schneider Pty. Ltd., Two Wells Road, Gawler, S.A., 5118.

- 3.3 At the same intervals as above check the bending frequency of the wing on assembled glider as follows:
- 3.3.1 Inflate tyre to 30 psi.
  - 3.3.2 Shake wing tip up and down and count number of cycles per minute at natural frequency. Enter into log book.
  - 3.3.3 If lower frequency is observed refer to the manufacturer immediately.
  - 3.3.4 After repairs or repainting of wing check bending frequency.
- 3.4 These inspections may be accomplished by the owner.

The Service Bulletin shall be kept with the Technical Documents. Its compliance shall be entered in the log book and reported to the manufacturer.

(for DIAMANT 16,5 S/N 37 - 51, 58 - 68  
with less than 3000 hrs only)

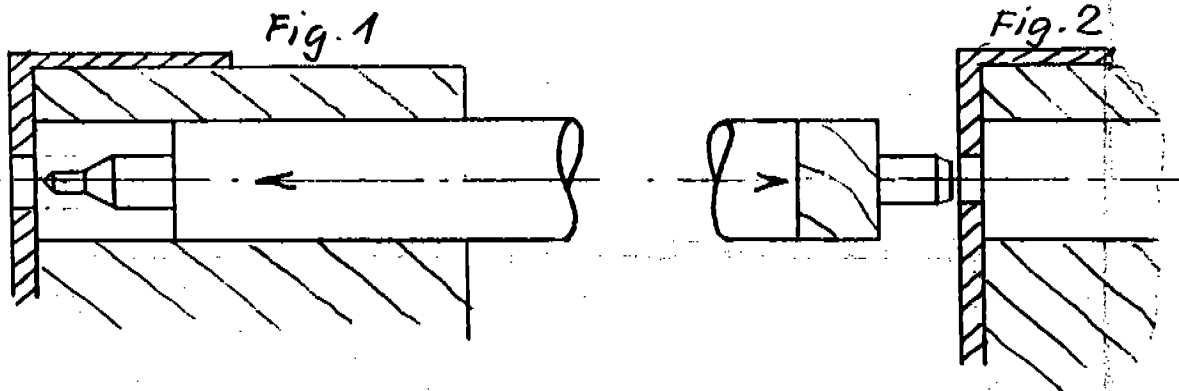
Accomplishment instructions (see SK-HBV-194)

1. Trestle up right wing.
2. Partially grind stub spar in area of upper first wrapping, smooth off edges 1/8".
3. Level bosses to bolts of main fitting with staple fibre soaked with resin XB 2878 A/B.
4. Prepare glass fabric for first wrapping (Pos. 4,6,8,10), provide cut-out for assembling stud.
5. Degrease stub spar carefully with acetone or chloroethene or trichloroethlene.
6. Laminate in layers upper first wrapping (Pos. 4,6,8,10), stretch with foil over stub spar. Remove excess resin and press laminate with rubber covered boards and clamps.
7. Leave to cure.
8. Turn wing over.
9. Partially grind stub spar in area of lower first wrapping, smooth off edges 1/8", degrease.
10. Laminate lower first wrapping (Pos. 3,5,7,9)
11. Leave to cure.
12. Degrease front end of stub spar and finger fitting plate.
13. Laminate horizontal wrapping around finger fitting (Pos. 12,13,14).
14. Leave to cure.
15. Trim laminated area.

Accomplishment instructions (see SK-HBV-191)

1. Lay bare bolts of finger fitting by grinding off the lateral enlargements.
2. Partially grind stub spar in area of upper first wrapping, smooth off edges 1/8".
3. Level bosses to bolts of main fitting with staple fibre soaked with resin XB 2878 A/B.
4. Prepare glass fabric for first wrapping (Pos. 4,6,8,10), provide cut-out for assembling stud.
5. Degrease stub spar carefully with acetone or chloroethene or trichloroethylene, roughen bonding surfaces slightly
6. Laminate in layers upper first wrapping (Pos.4,6,8,10), stretch with foil over stub spar. Remove excess resin and press laminate with rubber covered boards and clamps.
7. Leave to cure.
8. Turn wing over.
9. Partially grind stub spar in area of lower first wrapping, smooth off edges 1/8", degrease.
10. Laminate lower first wrapping (Pos. 3,5,7,9)
11. Leave to cure.
12. Trim laminated area.
13. Remove 2 bolts of finger fitting by means of a bolt removing tool.
14. Place U-shaped cuffs (Pos. 1) with intermediate layer of a separating foil on the stub spar. Fill cavities with glass fabrics.
15. Remove cuffs, degrease and roughen bonding surfaces, laminate fabric filling with resin XB 2878 A/B. Press on cuffs (with protecting foil) in order to obtain good adhesion between fabric filling and stub spar. Leave to cure.
16. Remove cuffs.
17. Remove protecting foil from one cuff, roughen green primer surface slightly, degrease.
18. Degrease and roughen slightly bonding surface on stub spar.
19. Bond cuff onto stub spar by means of resin AV 144 (100 parts of weight) and HV 997 (60 parts of weight). Apply resin to both surfaces beforehand. Leave to cure for 12 hours at a minimum of 20°C.

20. Carefully drill off and ream  $\varnothing$   $\begin{matrix} 0.6306'' \\ 0.6299'' \end{matrix}$  holes in cuff from finger fitting as follows:
- 20.1 Drill off centre by using centre drill (Fig. 1)
  - 20.2 Drill hole  $5/8''$  from outside using  $5/8''$  face-grinder with centre (Fig. 2)
  - 20.3 Ream hole to  $\begin{matrix} 0.6306'' \\ 0.6299'' \end{matrix}$ . Deviation to  $0.631''$  is acceptable.



21. Prepare and carry out bonding of second cuff (Pos. 1) as per para. 17 to 19.
22. Carefully drill off second cuff (2 drilled holes of  $\begin{matrix} .6306'' \\ .6299'' \end{matrix}$  dia.).
23. Insert 2 bolts (Pos. 2).
24. Fill up and laminate cavities with staple fabric and wrap a 2 in wide fabric strip 140 (Pos. 12) with resin XB 2878 A/B around cuffs (start second wrapping 1,2 in before cuffs).
25. Leave to cure, then trim.

NOTE: Alternate method for grinding hole (para 20):

Grind hole 16 H7 with special step grinder using existing hole as guide as per Fig. 1.

## INFORMATION SHEET

relating to FFA Service Bulletin no. 8

- a. The accompanying Service Bulletin and appendices are intended for the information of aircraft owners and of workshops officially approved for the repair of glassfibre sailplanes.

Such repair workshops shall carry out the instructions contained in the Bulletin under their own responsibility and at their own risk.

- b. The Service Bulletin and its appendices do not imply any transfer of responsibility as to the manner in which any such work is carried out, nor do they provide any extension or renewal of any manufacturer's guarantee whose period of validity has expired, nor supplement any guarantee which may still be current.

- c. The Service Bulletin and its appendices are approved by the Swiss Federal Air Office.

- d. The Service Bulletin and its appendices, as well as this information sheet which forms an integral part of the Bulletin, are subject to Swiss law.