B.G.A. TECHNICAL COMMITTEE.

TECHNICAL NEWSHEET.

TNS/3/4/88..

PART 1 AIRWORTHINESS "AGGRO". (Please add to the 1988 Red Pages).

1.1 Grob G103 Twin II Accro. Elevator Push-Rod.

AD 88-1 herewith requires inspection for corrosion. TM 315 - 14 refers. Serial No's as listed.

1.2 ASW 20L Trimmer Modification. An optional "fix" proposed by R. Cousins, is approved by BGA, (copy herewith). Incorporates a common or garden tap washer, to good effect!.

1.3 Pirat. Bulletin BE - 027/87 - Is an "Appreciation Sheet of Technical Condition" after completing 1800 hours. Copies from UK Agents.

1.4 Putchatz. Bulletin BE 34/50 - 3/87. Extention of Life to 6000hrs, includes an inspection schedule at 1000 hrs.

1.5 Jantar - 2B. Bulletin BE - 030/87 requires Inspection of balancing weights in the nose.

1.6 Jantar 1. Replacement of Main SparSpigots at 1500 hrs. Bulletin BR - 032/87 requires mandatory replacement, subsequent to fatigue - test programme.

1.7 Jantar (all series) "Compensation for play in the wing-to-fuselage connection". Refer to Bulletin BR - 032/87.

1.8 Grob 109/109B Motor-Gliders. Replacement of the two inner elevator hinges. TM-817-25 requires replacement by May 1988. From UK Agents. Inspect DAILY until replacement.

1.9 Jantar II (STD) Elevator Restriction. caused by a foul between bellcrank at the base of the fin. Pushrod bolt too long fouls lower rudder hinge. (Reported by P.D. Smith, Cheltenham & Glos.).

1.10 Bocian Cracks in triangular strips and glue failure, in tailplane support structure. Damage possibly dur to solid tail wheel? (Strubby G.C.).

1.11 Libelle - Rudder Drive Actuator. - welded tube seam spilt. Found on NDT check (D. Crinson).

1.12 Nimbus 2. Aileron Control Restriction at Rubbing Strip. Sketch herewith by Mike Law,(R.E.M.E. Germany)

1.13 PIK 20 Rudder Lower Hinge. Cracks and total failure leading to rudder seperation from the glider. SB M20-26 and BGA TNS/5/83 and TNS 10/84 had not been complied with. (Reported by P. Goodwin - Saltby).

1.14 KA8 Rudder Cables After re-assembly of the rudder, with the fuselage inverted, rudder cables can become entangled with theaileron circuit, creating interreactive controls! (Reported by E. Sussex G.C.)

1.15 D.G. 400 Extention time for engine unit not to exceed 13 secs. T/Note 826 - 18 refers.

1.16 LS4/4A Extention of Service Life to 6000hrs, subject ti inspection at 3000hrs to Tech/Bulletin 4027.

1.17 LS 6. Replace Gas Strut in Undercarriage.. Tech/Bulletin 6012 refers to specific serial No's.

1.18 LS6 Introduction of hydraulic damper cancels Vne restriction. Tech Bulletin 6010/6011 refer.

1.19 SF. 28A Tandem Falke. Assymetric spoiler due to failure of pulley attachment at wing Rib 8. T/Note 770 - 16 refers & LBA AD/88-30.

1.20 ASK 21 Inspection of Rudder Pedals, Airbrakes and Rear Canopy. T/Note 20 (Summerised).

(a) Rudder Pedals - security of plastic tube in the "S" shaped conduits.

(b) Airbrakes (Quick-release connectors at wing root where fitted). Check for play and secutiry, and :-

Bellcrank in the fuselage for cracks. (To be replaced by Pt No 210.43.0005 by May '88).

(c) Rear Canopy - Support tube for the rear gas-strut cracked, probably due to leaving open in high winds. Check hinge for cracks. (Re-inforcing to drawing 210.12.55 available).
(Full details available from R & D Aviation, Unit 23, Bankside, Kidlington, Oxon. OX5 1JE. Tel: 0865 841441).

1.21 PIK 16 Push Rod End fittings. Inspect to Bulletin M784/78 (From CAA source).

1.22 T.59 Kestrel. Both wings parted company with the fuselage on the ground after landing, having been flown with the main pin omitted! (Cotswold G.C.)

1.23 GASIL 2/88 (and 3/88) (Extracts).

Wooden propeller detached/F.O.D. in oil pumps.refuelling hazzards, the latter caused by static discharge!. Water in fuel.

1.24 Swallow (and similar designs). Rudder cables wear the fairleads, damaging the fin spar. (Sketch attached from Humberside Aviation).

1.25 DG 300 Empty weight/C.G. revisions to accomodate light weight parachutes. T/Note 359-13 requires Flight Manual revisions, and possible changes to tail mounted lead ballast. Copy attached.

1.26 Club Libelle 205, Hornet, Mosquito, Glasflugel 304. Elevator Drive. AD/88-89 (herewith) requires immediate action.

1.27 Bocian 1E. Failure of TRIM TAB drive cable causes control difficulties. Fracture occurred at tab attachment. (Extract from Incident Report by Highland G.C.)

1.28 GQ Security Parachutes INC (USA). FAA A/D 88-05-08 (herewith) would apply if any of these parachutes are in use in the U.K.,

1.29 Ventus BT.. (Serial No's 66, 70 thru 98). T/Note 825-9 "Lower maximum permitted gross weight (power plant & fuel tank removed) with wing upon 17.6m or 16.6m" (From UK Agents).

PART 2 GENERAL MATTERS

2.1 Ventus BT. Tailwheel - optional Mod T/Note 825-6.

2.2 Ventus BT. Multi-blade folding prop. Optional T/Note 825-7

2.3 Grob 109B Engines. Cylinder Head Gaskets introduced by T.M. 4601-4.

2.4 ASW 20. Elevator/Stabiliser. Jap Sealing (optional). Tech Note 27 refers & introduces compensating elevator spring.

2.5 Ventus BT. Introduction of Aluminium Fuel Tank to replace G.R.P. T/Note 825-5.

BGA NOTE: Where no head rest is fitted, crash protection should be provided.

2.6 Janus CM, introduction of Rotax 535C Engines. Less noise and more simple installation. Tech Note 809-5 refers.

2.7 KA13 TAILSKID (Product improvement modification) A more resilient skid assembly has been devised by Stratford-On-Avon G.C. (sketch attached).

2.8 Grob G103 "Twin II" Weak Link Limitation.

TM 315-19 raises the weak link rating from 600da N to 754 daN

2.9 Aero-Tow-Rope Materials. At the O.S.T.I.V. Sailplane Developement Panel & Safety Panel meetings held in the UK 11/13/3/88, the consensus of opinion was that polyproplene ("water-skiing") rope, which is both inexpensive and inelastic, is preferable to small diameter (elastic) nylon, in avoiding "slingshot" upsets. The maximum legal length (150 metres overall) in the UK should be used.

2.10 Ventus BT and CT. Exhaust muffler. T/Note 825-9 introduces optional exhaust collector and muffler.

K13 TAILSKID (Product Improvement Modification)

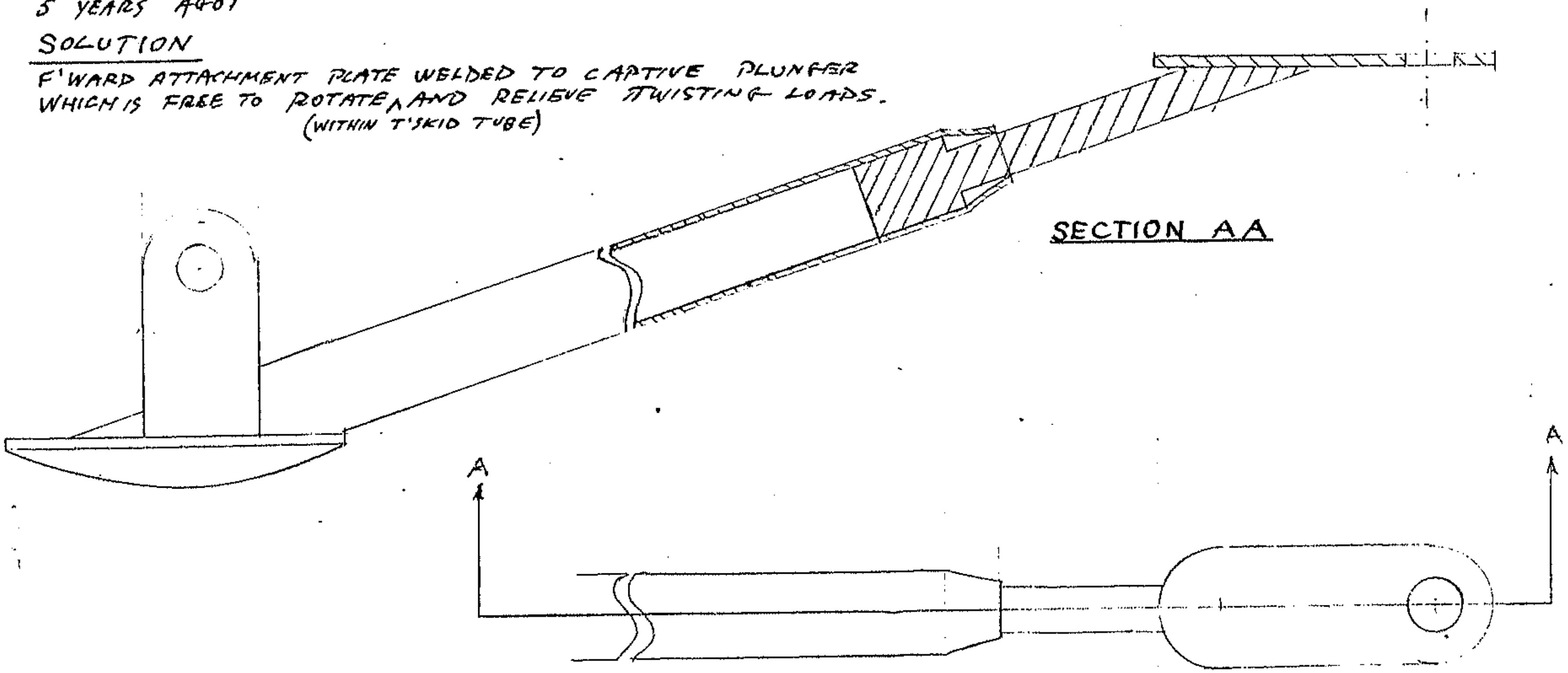
BGA TNS 13/88
Approved.
CTO 23/2/88

PROBLEM.

YAW ON TOUCHDOWN TWISTING FORWARD ATTACHMENT PLATE AND FUSELAGE ATTACHMENT BOLT. (BOLT FAILED 5 YEARS AGO)

SOLUTION

F'WARD ATTACHMENT PLATE WELDED TO CAPTIVE PLUNGER WHICH IS FREE TO ROTATE AND RELIEVE TWISTING LOADS. (WITHIN T'SKID TUBE)



NOT TO SCALE

G.A.S.I.L
3/88
PROP: FAILURE

E6. WOODEN PROPELLER DETACHED IN FLIGHT

Aircraft : Evans VP1 (Applicable for many other types)
Date : July 1987 Registration : G-BGLF
Engine : Volkswagon
Reportable Accident near Cranfield, Beds.

The pilot had just levelled off at 2000 ft, when, without any warning, the wooden propeller detached. A glide was initiated in an attempt to return to the airfield, but as the aircraft was too low, the pilot carried out a forced landing in a field. Minor damage was sustained by the undercarriage.

The method of mounting the propeller on this aircraft is common in principle with many others, in that the crankshaft flange has six threaded flanged bosses set into it with their forward ends protruding. The intention of the design is that torsional coupling to the propeller is achieved by tight engagement of these protruding boss ends in appropriately sized holes in the propeller with only thrust loads being taken by the attachment bolts.

Examination revealed that the fit of the bosses in the propeller was slack. In addition, fatigue due to bending loads was present on the fracture surfaces of the bolts, the fractures occurring at a position just inside the threaded section of each boss. Examination of the bolt remnants led the maintenance organisation to suspect they were of inferior quality, resulting in their fatigue failure.

CAA Comment:
The PFA will be publishing the following in 'Popular Flying'.

"Serious damage can occur to wooden propellers due to slackness occurring on the propeller and the retaining nuts or bolts. This damage is not only serious and expensive to the propeller but can also endanger the aircraft and in extreme cases result in loss of the propeller.

Great care must be taken when fitting a wooden propeller. The tensioning of the nuts or bolts must be done a little at a time and alternately, to ensure that the propeller sits down square and the nut or bolt tensions are correct. The engine torque is normally transmitted to the propeller by means of studs which engage in the rear face of the propeller and a ring of bolts keeps the propeller firmly in place and tensions the propeller into place on the rear driving flange. The propeller tracking and nut or bolt tensions MUST BE CHECKED AFTER THE FIRST GROUND RUNS AND TEST FLIGHT. This is all the more important with a new propeller, which must obviously settle in. Changes in temperature and humidity can also start this trouble. It is important to remember that a wooden propeller will react to conditions just as any wooden component will. It is highly recommended that the above checks be carried out at reasonable intervals to ensure that the propeller is secure. From our experience, we recommend the following inspection cycles...

a) Aircraft used frequently for aerobatics, racing, glider towing and "Circuits and bumps" ... every 30 hours or 1 month, whichever is sooner.

b) Aircraft on normal use but used occasionally on the above ... every 50 hours or 2 months, whichever is sooner.

c) Aircraft on normal use ONLY ... every 100 hours or 3 months, whichever is sooner.

Engines which are allowed to "kick back" when stopping, can start this trouble. Pilots should inform an engineer if this happens.

A reminder that the nut or bolt safety locking will require removal, in order to carry out these checks. Replacement of this safety locking is necessary, before the aircraft flies again.

With care, thought and understanding, wooden propellers can give very good service and achieve a remarkably long life."

G.A.S.I.L
2/88
PROP: FAILUP=

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10

Glaser-Dirks Flugzeugbau GmbH
Im Schollengarten 19-20, 7520 Bruchsal 4
Telefon 07257/89-0, Telex 7822410 GLDG
LBA anerkannter Herstellungsbetrieb ID 25
LBA anerkannter Luftfahrttechnischer Betrieb IIA 279

Technical Note

TN 359/13

BOATNS/3/88.

DG-300

Subject: Empty weight C.G. range
Manual revisions

Effectivity: Sailplanes DG-300, DG-300 ELAN
Serial No. 3 E 1 up to 3 E 272

Accomplishment: within 30 days

Reason:

1. When using thin parachutes, there is the possibility, that the pilots position is behind the position used for calculating the present empty mass C.G. range diagram.

2. Manual revisions

Instructions:

1. Using the new empty weight C.G. range diagram and with the data of the weight and balance report and from the table on page 14 flight manual the actual min. cockpit load has to be determined.
If this value exceeds 70 kg (154 lbs.) one of the following measures 1a or 1b has to be executed.

   1a. Enter the new value for the min. cockpit load in the table on page 14 flight manual and in the cockpit placard (No. 12 see diagram 6 maintenance manual).

   1b. Remove or reduce the amount of lead ballast in the tail of your DG-300.
   Therefor remove the rudder.
   After this measure execute a new weight and balance measurement.
   Enter the results into the table on page 14 flight manual.
   Adjust the rudder and secure it properly.

TAIL BALLAST WEIGHT

2. Exchange the following manual pages against the new pages issued Febr. 1988.
The changes are marked at the side.

Page	Content and changes
Flight manual	
0	Manual amendments
1	Content - new issue dates
2	" " " "
12	Loading chart - removable ballast supplemented
13	Loading chart - removable ballast supplemented
17	Length of the towing cable changed to 30 - 70 m
25	Wing tanks - text amended
27	Filling the wing water ballast tanks - warning supplemented
29	Service and care - new translation petroleum ether
29a	Service and care - corrected

TNS/3/88.

LIBELLE. HORNET. MOSQUITO } ELEVATOR DRIVE.

AIRWORTHINESS DIRECTIVE

88-28 Glasflügel

Date of issue:
February 23, 1988

Affected Sailplane:
German Type Certificate No. 304
Club-Libelle 205
Hornet, Hornet-C
German Type Certificate No. 318
Mosquito,
Glasflügel 304
all serial numbers

Subject:
Elevator drive

Reason:
Difficulties in the control of the sailplane were encountered when an elevator drive bracket broke on one side in flight.

Action:
1. On sailplanes having an earlier type elevator drive bracket (without reinforcements identified as part 6, modif. 2, in accordance with the drawing of the Technical Note) a visual inspection for possible cracks in the bracket arms must be carried out. It must also be checked that the bracket arms are not twisted out of line.
2. On sailplanes having an earlier type elevator drive bracket (without reinforcements), the bracket must either be reinforced according to the drawing of the Technical Note or be replaced by a reinforced bracket. When the tailplane is reassembled, it must be made sure that the correct number of spacing washers are fitted between the bracket arms and the ball bearings (tag washers when removing the bracket).

Compliance:
Action step 1 : Daily, prior to first flight
Action step 2 : Not later than April 30th, 1988

Technical publication of the manufacturer:
Hansjörg Streifeneder Technical Note No. 205-16, 206-12, 303-12, 304-3 of January 12, 1988
which becomes herewith part of this AD and may be obtained from Messrs. Hansjörg Streifeneder, Glasfaser-Flugzeug-Service GmbH, Hofener Weg, D-7431 Grabenstetten, Federal Republik of Germany.

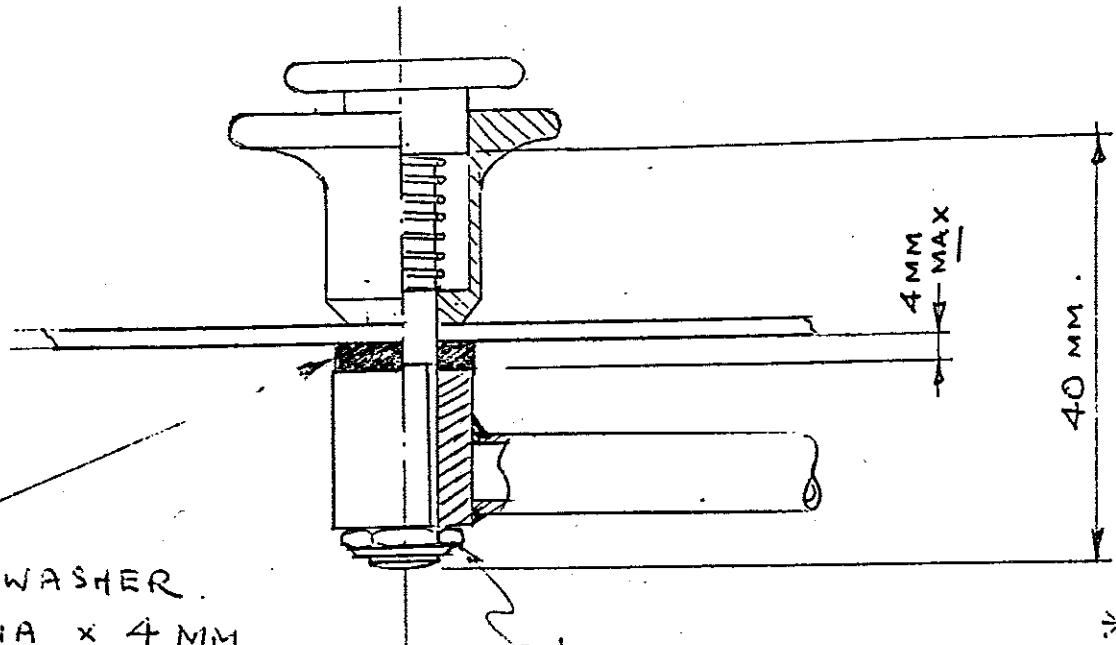
Accomplishment and log book entry:
Welding according to drawing No. 205-33-9 (modification 2) must be done by a licensed aircraft welder.
Accomplishment of action 1 must be done by a skilled person.
Accomplishment of action 2 must be entered in the sailplane's log by a licensed inspector.

Note:
The reinforced elevator bracket, manufactured according to drawing No. 205-33-9 (modification 2) or the additional metal strips with welding wire 1.7734.2 may be obtained from:

APPENDIX A.

A.S.W 20L. OPTIONAL TRIM Mod: 17.2.88.

ASW 20/20FL Service Bulletin N.12 Refers - BGA TNS/1/88.
Schleicher T/Note 30 (AS/87-148) Refers - BGA TNS/12/87.



SUGGESTED FRICTION WASHER MODIFICATION TO A.S.W. 20 L TRIM ARRANGEMENT.

R. COUSINS.
17.2.88.

Approved by BGA Ref ASW 20/1/88.
CTO.
28/2/88.

AIRWORTHINESS DIRECTIVE

TNS/3/88

GROB G.103A

88-1 Grob

Date of issue:
February 3, 1988

Affected sailplane:
German Type Certificate No. 315
Grob G 103 A Twin II Acro,
s/n 3544-3878 inclusive (only with supplement "K")

Subject:
Elevator push-rod III (103A-4244) or IV (103A-4694)

Reason:
Corrosion may occur in the lower mounting area of the described elevator pushrod by water of condensation. The elevator push-rod has to be inspected for precaution and exchanged if necessary.

Action and compliance:
1. Inspection of the elevator push-rod before next take-off in accordance with action 1 of the Service Bulletin unless already accomplished. Check for exsisting of a welding seam in the area about 10 cm at the upper end of the rod.
2. Exchange elevator push-rod in accordance with action 2 of the Service Bulletin and by positiv result of welding seam; in this case inform German LBA.

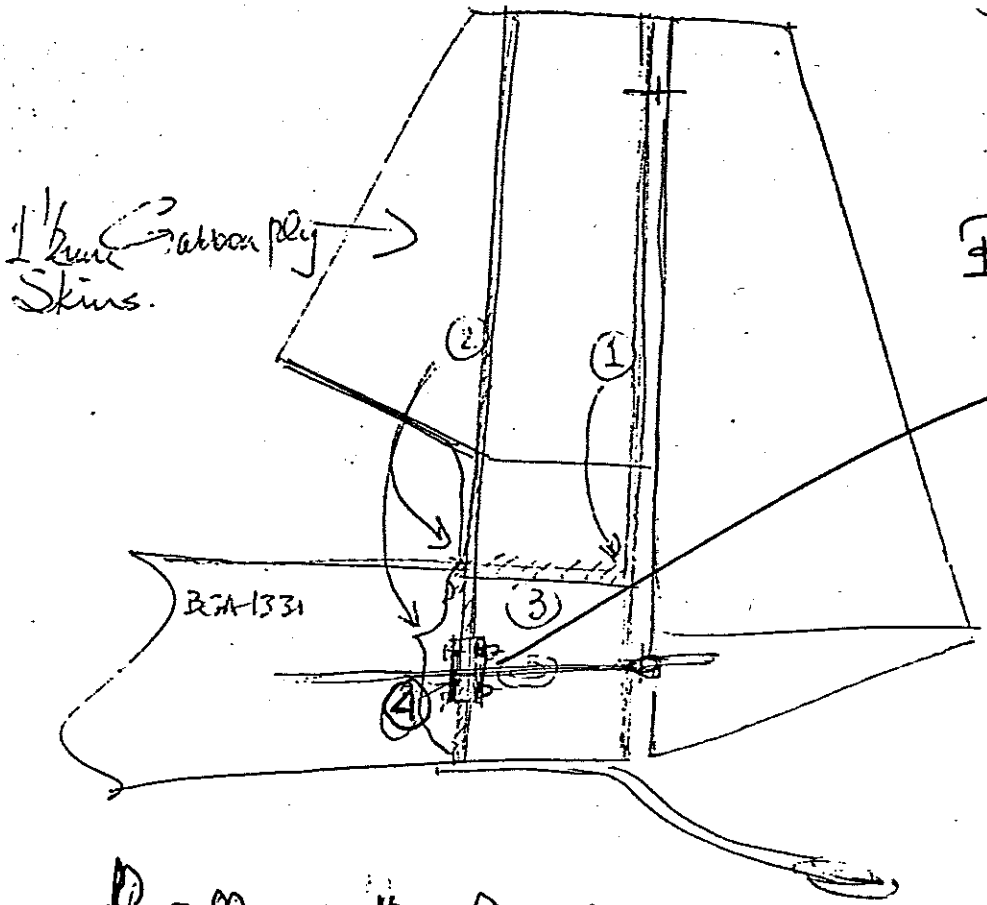
Technical publication of the manufacturer:
Grob Service Bulletin TM 315-34 of Dec. 8, 1987
which becomes herewith part of this AD and may be obtained from Messrs. B. Grob Flugzeugebau, Industriestr., D-8948 Mindelheim-Mattsies, Federal Republic of Germany.

Accomplishment and log book entry:
Action to be accomplished by a skilled person and to be checked and entered in the sailplane's log by an authorised inspector.

TNS/3/88.

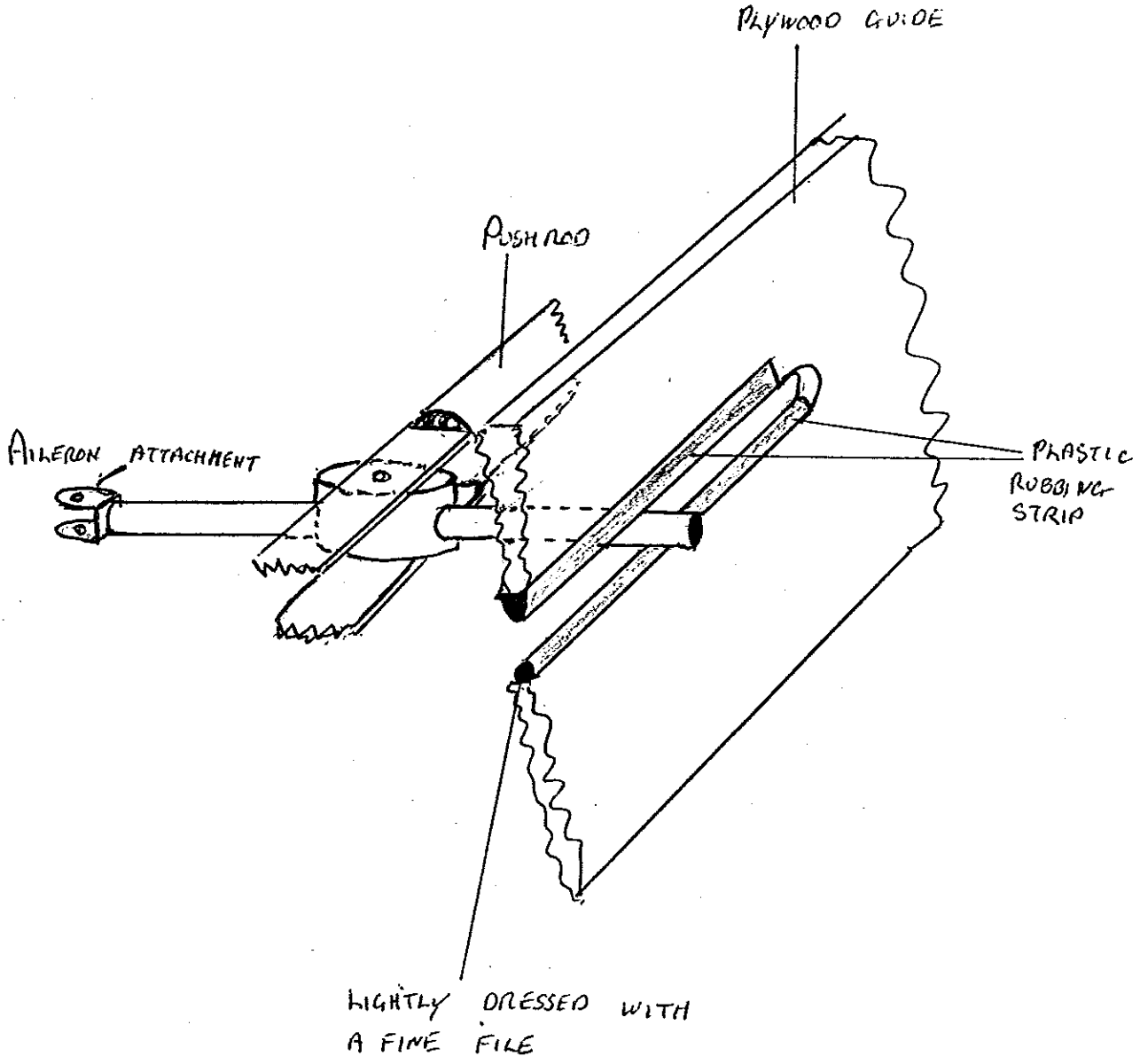
SWALLOW.

(REPORTED BY HUMBERSIDE AVIATION)



- Cable cuts through at (4), anchorage of front fin spar to fuselage weakens.

TNS/3/88.



NIMBUS 2. Aileron Control Restriction at Rubbing Strip

(Mike Law. RAF.C.)
REME 23/2/88

G.A.S.I.L
2/88
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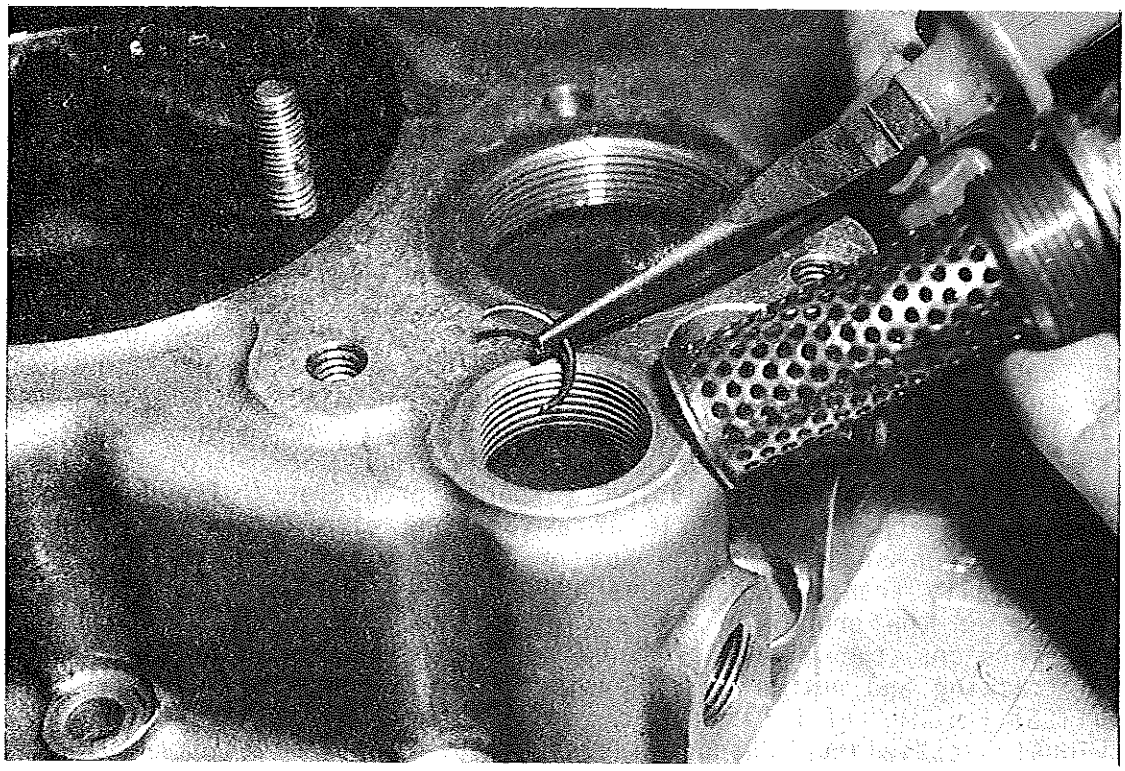
E4. LOSS OF OIL PRESSURE DUE TO FOD IN OIL PUMP GEARS

Aircraft : Cessna FR172 Reims Rocket
Date : September 1987
Engine : Lycoming IO-360-KB

A total loss of oil pressure occurred on take-off.

Investigation revealed that a small half-circular hard steel ring had entered the oil pump gears causing them to jam and sever the oil pump drive. The source of this foreign object was not discovered, but it was not unlike a piece of a keyring and could easily have entered the engine through oil filling cans or have been lying in the engine since manufacture. It had passed through a small mesh suction filter prior to the oil pump. The engine had run 164 hours since new.



E5. WING RE-INFORCING PANELS FOUND CRACKED

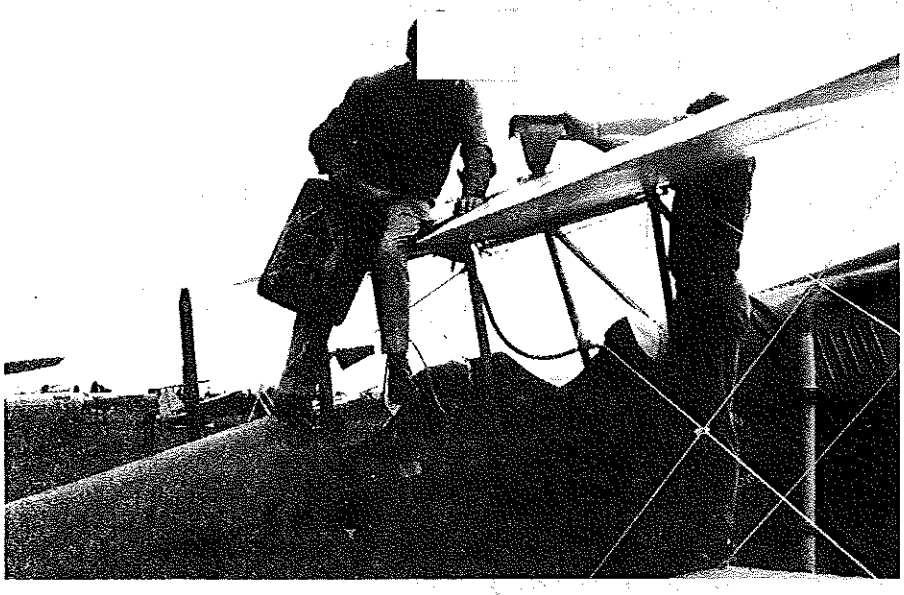
Aircraft : Piper PA28-140 Cherokee
Date : June 1987 (Received December 1987)

During wing removal and spar inspection in accordance with (now suspended) AD87-08-08, the inboard reinforcing panels forward and aft of the main spar were found cracked through in several places outboard of the walkway area and in the no-step positions. These panels are difficult to inspect unless the wing is removed. Part Nos are 62061-02 and 04. The aircraft had flown 9741 hours since manufacture in 1962.

CAA Comment:
It should be noted that the effectivity date for this AD was suspended on 28th September 1987 and therefore it does not have to be complied with until the suspension is lifted. It should be pointed out that the FAA have not cancelled the directive.

Fire Hazard

REFUELLING.



In this case there was a good operational reason for supplying the aviation fuel in a can. Note - a metal can and chamois leather being used.

There is always a risk of fire when refuelling from cans due to static electrical discharge. The following is part of a letter published in the November 1987 EAA magazine in the United States.

"I was involved in a gasolene fire while obtaining auto-fuel for my Luscombe 8A at a service station. I have the EAA auto-gas STC. I was using a plastic 16 gallon container which, with the sloshing gasolene, generated enough static electricity to cause a spark between the funnel (metal) and the grounded gasolene hose. A small amount of gasolene was still draining from the funnel. The resulting fire caused me to be burned from the waist up (52%). I spent 12 weeks in hospital nine of which I was unconscious. I am a very fortunate person to have lived through this ordeal.

If you must handle gasolene, use a metal safety can (properly grounded). Above all - buy your aircraft fuel at the airport where proper dispensing facilities are available. The few pennies saved by handling fuel from the service station to the airport do not outweigh the risk. There is always the possibility of fire when handling gasolene!"

In Canada the owner of a Fleet 80 Canuck (it looks like a Piper Cub) aircraft experienced a flash fire whilst refuelling his aircraft from a plastic container through a plastic funnel and felt fuel strainer. The partially burned funnel and strainer were given to a laboratory and their analysis included the following information:

a) The incident was a classical example of a fuel-generated electro-static spark ignition where the fuel becomes charged during the container filling process. Some of this charge will be retained on the fuel surface and some transferred to the container surface.

b) Walking to the aircraft causes fuel sloshing and more charge generation.

c) Pouring the gasolene through the filter funnel would cause some charge to be generated by the surface of the funnel and container. A loss of charge however would be generated by the felt filter medium, a prolific charge generator.

.....Contd

d) A more significant fire or even an in-tank explosion was prevented by the rich mixture of the gasolene/air mixture in the aircraft tank. The strength of this mixture would weaken as it became diluted with the atmosphere. Hence the fire occurred on the top surface of the funnel and away from the fuel surface. The ambient temperature of 13.3 deg C was responsible for the over-rich condition and if this incident had happened at a temperature below about 0 deg C it could have been more serious. The laboratory stated the following precautions should have been taken:

i) The plastic container should have been grounded during the filling process, the use of a wire to ground from the bottom of the container is recommended.

ii) The container, pump and gasolene drum were not bonded. It is difficult to ground and bond plastic containers and such containers, if possible, should be avoided. The possibility of using approved conductive plastic containers should be explored if metal containers are not available.

iii) A bond between the aircraft, funnel and containers is essential.

iv) Avoid felt filters (a safer metal filter funnel incorporating a filter screen, which is manufactured in West Germany had been evaluated by the laboratory).

v) Again it is strongly recommended that only metal or otherwise approved containers and funnels be used for the purpose.

Maintenance

Again in Canada, an explosion killed a mechanic and destroyed a float aircraft parked behind closed hangar doors. The day was very cold and the mechanic and his helper were working on a fuel system. The hangar was heated by a blower system which would be circulating dust particles around the enclosed area. At the time of the explosion the mechanic was pouring fuel into a container fitted to a wing fuel tank. The movement of the particle-laden air currents over the aircraft surfaces may have built up a static charge which, when combined with flammable fuel vapours produced catastrophic results.

Working with fuel in an enclosed area is dangerous. Such work should be done outside, particularly when the relative humidity is low. Also, there should be effective electrical bonding between the aircraft, the fuel source, piping or funnel and the ground before refuelling is undertaken. The use of plastic or any material which cannot be properly bonded and grounded increases the chance of explosion and fire.

CAA Comment:
Static charge builds up most easily in dry air. Since warm air can contain more moisture than cold air, the driest days in the UK may well be the clear, crisp days of winter. All personnel working with fuel inside or outside should note this. Civil Aircraft Inspection Procedures AL/3-17 para 6.11 details the precautions.

6. FUEL EMERGENCIES [P]

Pilots are reminded that the UK Air Traffic Control system does not have a "fuel emergency" category in the appropriate section of the Manual of Air Traffic Services. The term should therefore not be used by flight crew. Aircraft in difficulty due to fuel problems should make a Distress or Urgency call, as appropriate, as for any other emergency. The nature of the problem can then be defined in subsequent RT exchanges and appropriate assistance obtained.

8. FIRE DURING REFUELLING FROM PLASTIC BUCKETS

GASIL 3/88 P/E

Aircraft : Piper PA23 Aztec
Date : January 1988

The aircraft had been parked for two weeks at Ibadan in Nigeria with the fuel tanks only quarter full whilst awaiting delivery of Avgas. The tanks were then drained into plastic buckets to check for water and contamination.

The fuel was in the process of being returned into the right-hand inner wing tank through a plastic funnel/filter arrangement. Two bucketfuls had been transferred in this manner but shortly after starting to pour the third bucketful into the filter, the fuel vapours ignited. The fire spread rapidly along the wing causing damage to the right wing, engine cowlings, landing gear doors, etc. before being extinguished by the airport fire service.

It was an extremely dry dusty day and it seemed certain that ignition must have been caused by static discharge on the plastic bucket. The reporter points out that an earthing wiring clip is necessary, particularly on plastic buckets, in conditions such as these.

CAA Comment:
This incident illustrates exactly the comments made in Item 5 in last months GASIL on the care needed in handling fuel.

9. UNSERVICEABLE AIRCRAFT NOT PLACARDED

P/E

Aircraft : Cessna 152
Date : January 1988

There was a standard instruction to refuel any aircraft which was low on fuel.

However, when an attempt was made to start the engine, prior to taxying, it immediately burst into flames and although the occupant managed to escape unhurt, the aircraft was almost destroyed.

It transpires that an engineer had removed the carburettor because of a fault but the aircraft had not been placarded unserviceable.

CAA Comment:
A valuable aircraft has been lost because of a lack in communication and failure to observe an essential procedure such as placarding an aircraft as unserviceable. An earlier GASIL described a case of a pilot attempting to fly an aircraft with the rudder removed for maintenance!!

ENGINE STARTED ON the PRIMER!

GASIL 3/88. P/E

17. WATER CONTAMINATION IN FUEL SYSTEM

Aircraft : SF25B Falke
Date : 6th September 1987
Reportable Accident at Waldershare Park Airstrip, Kent

The AAIB report states that, on the morning of the accident the weather was fine with a 10-15 knot wind from the south west. The aircraft had been refuelled that morning and had subsequently flown for 1 hour 15 minutes. The aircraft was serviceable after landing apart from some interference on the radio. It was decided that a more experienced pilot would conduct an airborne check on the radio which was to be combined with the dual instructional flight. Normal pre-flight checks were carried out including a check of the fuel contents which established that there was adequate fuel for the proposed flight. The engine ran satisfactorily for the two to three minutes that it took to complete the required checks and briefing. Having decided that the aircraft was delivering full power at the start of the take off run, the student pilot continued the take off along the strip which was substantially into wind. At a height of about 50 ft, the pilot followed the normal procedure for the site, turned right through approximately 40 degrees to align his climb-out track with the gap in the surrounding trees.

The normal climb-out track however, takes aircraft over the site of a gun club which is active on a Sunday morning. There was an existing agreement between the gun club and the gliding club operating the site that aircraft would not overfly the gun club when it was active. The instructor reminded the student that as it was a Sunday morning he should adjust his track to avoid the gun club. In response, the student entered a fairly steep right turn at a height estimated to be between 100 ft and 150 ft. This turn was entered at about 40 knots, the normal climbing speed, and stabilised at an angle of bank between 30 and 40 degrees. Shortly after this turn was established, the instructor realised that the engine was losing power and immediately took control from the student. He continued the turn and lowered the nose to gain speed in order to improve the manoeuvrability of the aircraft but was unable to avoid a wood that was downwind from the position where he suffered engine failure. The aircraft struck the trees in a nose down attitude and banked 20 degree to the right. There was no fire but the student died from his injuries before reaching hospital. Both sets of five point harnesses had suffered partial failure.

A strip examination of the engine revealed significant quantities of water in the fuel filter bowl and engine driven pump together with large quantities of bacteria which indicated that the water had been present for some time.

No evidence of any pre-crash defect in the flying control system or the engine was found.

CAA Comment:
This tragic accident highlights once again the importance of fuel drain checks being carried out during maintenance and pre-flight inspection. The CAA video "Fuel Management" (available for £6.32 from CAA P and PS at Cheltenham) emphasises these points.

PLEASE DISPLAY ON CLUB NOTICE BOARD!

If a crack is discovered and if the distance between spigot plates and swivel bearing is b ≤ 10 mm, the crack may initially be blended out (refer to page 4 for procedure):

- Removal of crack is possible:
  Carry out Action 2 not later than 31 December 1992
  Warning: After blending, check that dimension b is still ≤ 10 mm.
- Removal of crack not possible:
  Carry out Action 2 immediately

If a crack is discovered and if the distance between spigot plates and swivel bearing is b > 10 mm, Action 2 must be carried out immediately.

2. Replacement of the spar spigot assembly
Replace the spar spigot assembly in accordance with Installation Instruction No. 306-29/320-5.

The modifications must be performed in conformance with the following drawings:

New Drawing			Replacement for		
Drawing No.	Issued	Title	Drawing No.	Issued	Title
102-1909/1910	30.08.1990	SPIGOT ASSY LH/RH	102-1012/1013	15.02.1975	SPIGOT ASSY RH/LH
			102C3-1012/1013	26.11.1980	
104-1909/1910	30.08.1990	SPIGOT ASSY LH/RH	104-1003/1004	20.09.1979	SPIGOT ASSY
			104-1012/1013	30.05.1978	RH/LH

Weight and Balance: Empty weight and c. of g. have to be determined after the installation of the new spar spigot assemblies.

Remarks: Action 1 can be carried out by a competent person who is versed in the operation of the inspection methods and has to be certified in the logbook. Action 2 may only be carried out by an aviation workshop with authorization for GRP repairs. The proper execution has to be certified in the logbook by an authorized inspector.

Mattsies, 11 October 1990

LBA approved: 05. Dez. 1990

Dipl.Ing. J. Altmann
(Airworthiness engineer Certification staff)

Approval of translation has been done by best knowledge and judgement. -In any case the original text in German language is autoritive.-

Note: If in the meantime you have sold your glider, we would ask that you kindly pass this information immediately to the new owner and forward his address and aircraft s/n to us.

Subject: Inspection and replacement of spar spigot assemblies

Concerning:

Model: ASTIR CS	TCDS No.: 306
- Series:	- S/N:
ASTIR CS	1001-1536
ASTIR CS 77	1601-1844
ASTIR CS Jeans	2001-2248
CLUB ASTIR II	5001-5061 (Suffix "C")
STANDARD ASTIR II	5001-5061 (Suffix "S")
G 102 CLUB ASTIR III	5501 & up (Suffix "C")
G 102 CLUB ASTIR IIIb	5501 & up (Suffix "Cb")
G 102 STANDARD ASTIR III	5502 & up (Suffix "S")
Model: SPEED ASTIR II	**TCDS No.: 320**
- Series:	- S/N:
SPEED ASTIR II	4001-4027
SPEED ASTIR IIB	4028-4107

Urgency: See Actions

Procedure: As a result of the replacement action of the G 103 TWIN ASTIR spar spigot assemblies, the Gliding Federation of Australia issued a directive to inspect the similar main spigots of single-seater sailplanes. Because the reports of ostensibly discovered cracks are increasing, GROB has decided to issue this Service Bulletin as a pure precautionary measure.

Actions: The following actions are to be taken:

1. Inspection of the main spigot assembly
Before the next flight, inspect both spar spigot assemblies for cracks using a suitable procedure (dye penetrant, magnetic particle).

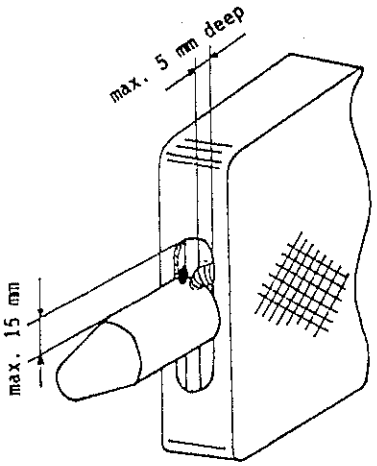
Important: When carrying out the crack inspection, ensure that any gap between the spigot plates and the spigot is not interpreted as a crack.

If no crack is discovered and if the distance between spigot plates and swivel bearing is (refer to figure on page 3):

- b ≤ 10 mm: Carry out Action 2 not later than 31 December 1992
- b > 10 mm: Carry out Action 2 not later than 30 June 1991

Comments to crack inspection

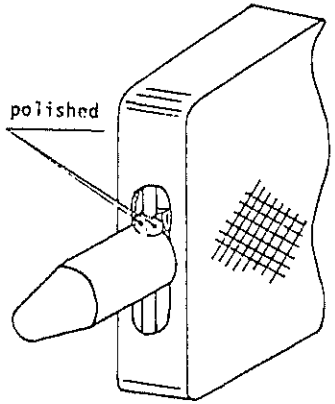
To perform the crack inspection the section of the wrapping around the main spigot has to be removed (max. 15 mm) and the adhesive material removed to expose the welding seam (max. 5 mm deep, see figure).
Be very careful not to scratch or otherwise damage the spigot or plate.



If the weld seam is continuous around the plate, the complete toe of the welding seam has to be inspected. Grooves or nicks in the surface of the welding seam which are not part of a crack must be polished out and the crack inspection performed again.

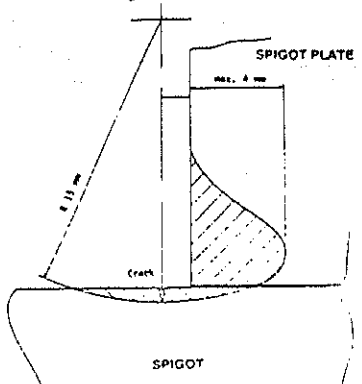
Procedure for blending out a crack

A crack may be blended out if the following conditions are fulfilled:
* crack on one side not deeper than 0.75 mm
* cracks on both sides not deeper than 0.5 mm each



Blending out should be done with grinding caps or equivalent. The grinded surface has to be polished.

Sketch mentioned below shows a cross section of blending out a crack.



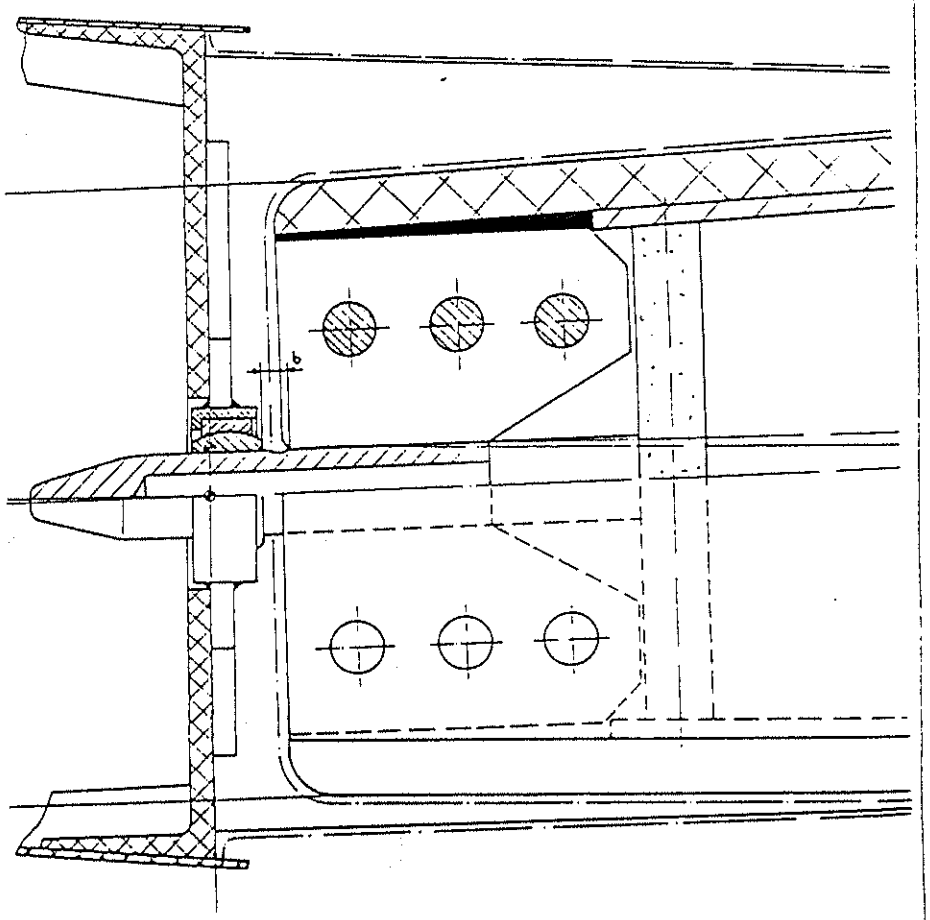
Finally apply a coating of resin to the exposed area (wood and metal).

GROB LUFT- UND RAUMFAHRT

Service Bulletin
TM 306-29
TM 320-5

GROB
ASTIR CS
SPEED ASTIR II

Definition of the distance b

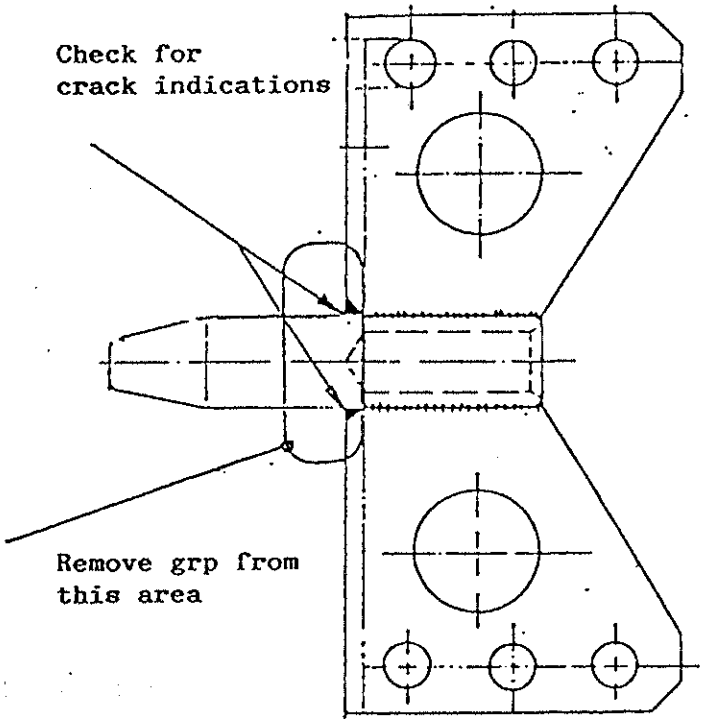


CAA AD No

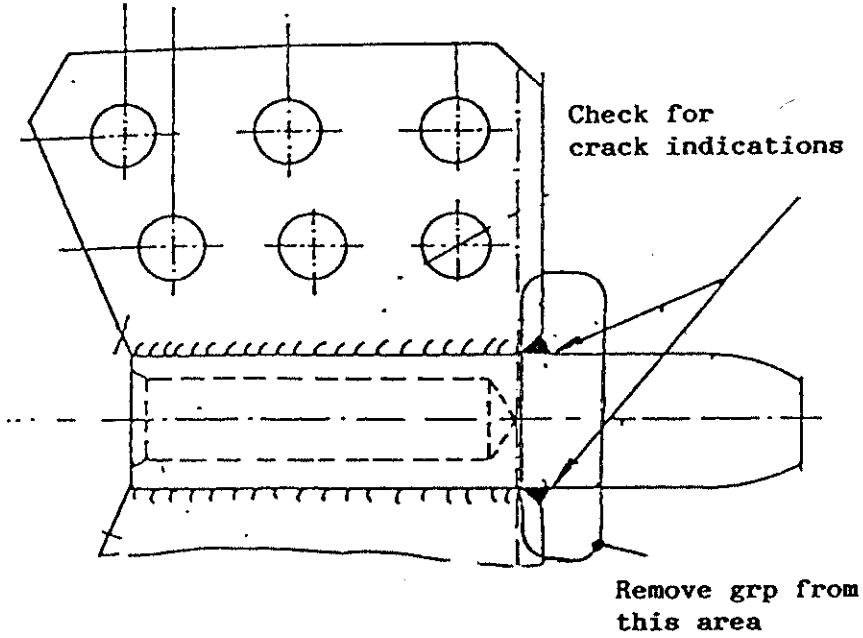
006-10-88 (continued)

FIGURE A

(Not to Scale)



G109 SPIGOT FITTING



G109B SPIGOT FITTING

GROB G109 SERIES MOTOR GLIDERS
Page 5

Issue 1
November 1988

CAA AD No	Associated Material	Description	Applicability - Compliance - Requirement
006-10-88 (continued)			(v) Where the spitots are found to be not cracked either after the actions of (iii) or (iv) above, reprotect the area where the grp has been removed, either with a lacquer or a brushed coat of epoxy resin. Replace the wings to the instructions in the Flight Manual. Repeat the instructions commencing at (i) above except that only the reprotection has now to be removed, at intervals not exceeding 300 hours.

(AD continued overleaf)

CAA AD No	Associated Material	Description	Applicability - Compliance - Requirement
006-10-88 (continued)			(iii) Inspect the end of the weld and the spigot itself at the toe of the weld for cracks, using a x10 magnifying glass (four places) - see Figure A. There are two spigots per aircraft and cracks can occur on the top and on the bottom of the spigot. (iv) If a crack is suspected, and appears to be confined to the weld itself, ie does not extend circumferentially into the spigot, or where there is a lack of weld penetration, the wings may be replaced. The aircraft may be flown to a place where the existence of cracks can be confirmed or otherwise by NDT means, by an Organisation approved for that purpose by the CAA. The flight must be conducted with the pilot only on board. Abrupt manoeuvres and/or high speeds are prohibited. If a crack is confirmed either in the weld only or in the spigot itself, rectification must be carried out to the manufacturer's approved repair scheme before further flight. Report the results of the inspections to the manufacturer and to the SDAU of the CAA.

CAA AD No	Associated Material	Description	Applicability - Compliance - Requirement
		PART 2 - ADDITIONAL ITEMS CLASSIFIED AS MANDATORY BY THE CAA	
012-11-86	TM 817-20	Flight Controls - Improvement of flutter behaviour - Variation of the requirements of LBA AD 85-218/2.	Applicable to G109B motor glider Serial Nos 6200 to 6434 inclusive except as indicated in Grob Technical Information TM 817-20. Notwithstanding the compliance requirements contained in Technical Information TM 817-20 MODIFY the aircraft in accordance with the TI not later than 31 December 1987. Until the modification is embodied the permitted Never Exceed Speed (Vne) is reduced to 100 kts/190 km/h. A placard to this effect must be displayed adjacent to the air speed indicator.
006-10-88		Spar stub end fittings - Cracks at or near the toe of the weld on the top and bottom surface of the spigot.	Applicable to all G109 and G109B Series motor gliders. Compliance is required not later than 50 flying hours from the receipt of this Directive. (i) Remove the wings in accordance with the Flight Manual instructions. (ii) Remove the glass reinforced plastic (grp) or the protective lacquer covering the spar stub extremity, avoiding any damage to the metal parts, sufficient to expose the top and bottom weld ends and the weld transition into the spigot body - see figure A.

(AD continued overleaf)

CAA AD No	Associated Material	Description	Applicability - Compliance - Requirement
	86-219	Flight and Maintenance Manuals - Replacement of pages.	Applicable to all G109 motor gliders. Compliance required as detailed in AD. Grob Technical Information TM 817-22 also refers.
	87-142	Fuel - Inspection and replacement of the lower sealing ring in the fuel shut-off valve.	Applicable to G109 and G109B Serial Nos as detailed in AD. Compliance required as detailed in AD. Grob Technical Note No 817-23 also refers.
	88-50	Inspection and replacement of the two inner elevator hinges.	Applicable to Grob G109B Serial Nos 6200 to 6445 inclusive. Compliance required as detailed in AD. Grob Technical Note TM817-25 also refers.
	90-315	Fuselage - Inspection of studs in the root rib stud plate.	Applicable to G109B Serial Nos 6200 through 6362. Compliance required as detailed in AD. Grob Service Bulletin G109B, TM 817-29 also refers.

Issue 7
December 1990

GROB G109 SERIES MOTOR GLIDERS

CAA AD No	Associated Material	Description	Applicability - Compliance - Requirement
		PART 1 - LUFTFAHRT-BUNDESAMT AIRWORTHINESS DIRECTIVES	
	83-6	Flight Manual - Correction of pages.	Applicable to all Serial Nos. Exchange pages 4, 11, 31, 37, 41 and 43 of the Flight Manual dated 14-12-1982 on or before 31 March 1983 for new ones. Grob Technical Note No. 817-8 refers.
	83-104	Gravity Range - Correction of Flight Manual and procedure for spin recovery.	Applicable to all Serial Nos. Action to be accomplished in accordance with Grob Technical Note No. 817-10 not later than 15 July 1983.
	85-132	Main Landing Gear - Fractures of the undercarriage legs.	Applicable to G109 and G109B Serial Nos. as detailed in AD. Compliance required as detailed in AD. Grob Technical Information TM 817-19 also refers.
	85-218/2	Flight Controls - Aileron flutter at speeds above 190 km/h.	Applicable to G109B Serial Nos as detailed in AD. Compliance required as detailed in AD. Grob Technical Note No 817-20 also refers.

CAA AD No	Associated Material	Description	Applicability - Compliance - Requirement
	86-138	Improved marking of canopy emergency release and re-location of ventilation placard.	Applicable to DG-400 Serial Nos 4-1 to 4-176. Compliance required as detailed in Airworthiness Directive. Glaser-Dirks Technical Note 826/16 also refers.
	87-108	Inspection/Modification of engine extension/retraction drive.	Applicable to DG-400 Serial Nos 4-1 to 4-188. Compliance required as detailed in Airworthiness Directive. Glaser-Dirks Technical Note 826/18 also refers.
	87-109	Inspection/Modification of engine wiring.	Applicable to DG-400 Serial Nos 4-1 to 4-178. Compliance required as detailed in Airworthiness Directive. Glaser-Dirks Technical Note 826/19 also refers.
	88-99	Empty weight CG range, plugged piece of hose at the pneumatic fuel pump, manual revisions and locking pins on wing tips.	Applicable to DG-400 Serial Nos 4-1 to 4-228. Compliance required as detailed in Airworthiness Directive. Glaser-Dirks Technical Note 826/20 also refers.
	90-43	Modification of powerplant.	Applicable to DG-400 all Serial Nos through 4-249. Compliance required as detailed in Airworthiness Directive. Glaser-Dirks Technical Note 826/22 also refers.

GLASER-DIRKS DG-400 SERIES MOTOR GLIDER

CAA AD No.	Associated Material	Description	Applicability - Compliance - Requirement
		PART 1 - LUFTFAHRT-BUNDESAMT AIRWORTHINESS DIRECTIVES	
	83-171	Flexible wing fuel tanks.	Applicable to DG-400 Serial Nos as detailed in Airworthiness Directive. Compliance required as detailed in Airworthiness Directive. Glaser-Dirks Technical Note 826/3 also refers.
	84-155	Rotax 505 engine, canopy jettison device, DEI, towing cable release mechanism.	Applicable to DG-400 Serial Nos 4-1 to 4-87. Compliance required as detailed in Airworthiness Directive. Glaser-Dirks Technical Note 826/6 also refers.
	84-157	Power plant, vibration cracks.	Applicable to DG-400 all Serial Nos. Compliance required as detailed in Airworthiness Directive. Glaser-Dirks Technical Note 826/11 also refers.
	85-219	Replacement of fuel shut off valve gaskets.	Applicable to DG-400 Serial Nos 4-1 to 4-140. Compliance required as detailed in Airworthiness Directive. Glaser-Dirks Technical Note 826/14 also refers.
	85-223	Powerplant - cable guides - inspection to prevent possible fouling of engine extension.	Applicable to DG-400 Serial Nos 4-1 to 4-140. Compliance required as detailed in Airworthiness Directive. Glaser-Dirks Technical Note 826/15 also refers.