B.G.A. TECHNICAL COMMITTEE.

TECHNICAL NEWSHEET.

TNS/7/8/88.

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

1.1 Grob G103 Twin Astirs/Accros. - Main wing spigot failure during fatigue test. The attached note was circulated to all owners. A Grob Working Party is currently changing these in the UK. Contact John Adams 0889/270577.

1.2 YS. 53 Cracks in the Centre Section Structure. Check for play by moving the wing tips fore and aft. This defect is recurring, and reported by Tony Moss, Borders G.C.

1.3 KA23. Rudder Travel Restriction caused by slippage of the nylon tubes in the "S" bends on the rudder pedals. (Reported by Midland G.C)

1.4 DG. 400. Tech/Note 826/20 (from UK agents) introduces weight and balance changes. L.BA AD/88-99 (herewith) refers to fuel system and other defects.

1.5 T.59 Kestrels, Moisture Damage to balsa wood in leading edges. Vent and drain holes should be checked. TNS/6/87 refers 5mm drain holes should be drilled midway between the access holes and the root rib/end. (Reported by Don Austin).

1.6 Disabled Persons Manual Rudder Conversions. (KA 7/ K13 etc). Fatigue failure of the pivot bolt mounting for the manual control lever has been reported. The detailed design of the component requires re-enforcement sketch attached. (Reported by Trent Valley G.C).

1.7 Hoffman H.36 Dimona. Service Bulletin 24 (mailed by CAA to owners) requires dimentional check of main wing bolts.

1.8 L'Hotelier Connectors in Control Systems. The enclosed advice has been mailed in BGA Club Newsletter for display on notice boards.

1.9 Standard Cirus. Rudder Mass Balance top bracket unboarded from the rudder. (Reported by D.C. Phillips. Stratford on Avon).

1.10 Blanik. Corrosion in Upper Spar Boom at Root End. The attached report and sketches require immediate attention. (By D. Masterson).

1.11 Pilatus B.4. Drag Spar Pin. Improper Engagement. The attached sketch is self explanatory.

1.12 Pilatus B.4. Locked Brake Buckles U/C Fork. The attached sketch refers to fractured hub bolts joining the Tost brake unit. (Reported by Blackpool & Fylde G.C)

1.13 Ventus & Ventus CT, Jamming of Airbrake Cover Strips. LBA AD 88-116 herewith, and T/Note 349-13 refer.

1.14 T.65 Vega. Corroded Aileron Hinges and Drive Box. Annual inspection in depth is recommended, after corrosion found in drive box. (Reported by Ken Blake).

1.15 Imported "Used" Sailplanes. Safe-Life Limitations imposed by the manufacturer, and by the Airworthiness Authority of the country of origin, cannot be ignored, and documentary proof of safe-life remaining (or consumed) will be required before to BGA C of A can be issued. BGA Form 267 must record the hours/launches flown.

1.16 Stromberg Carburrettors (Limbach/Grob Engines etc) Failure of the diaphram will cause difficult starting. (Reported by Hereford G.C). Wear on the float valve assembly will cause malfunction and loss of power.(TNS/1/2/88 refers).

1.17 G.103/Twin Astir/Accro. C.G. Tow Hook, Main pivot bolt loose - secured with Loctite. (Reported by H.Q. Air Cadets).

1.18 LS3, LS3a, LS3-17 Sailplanes Increase in Service Life. LBA AD. 88-81, extends the life to 6000 hours, provided that the inspection in Rolladen - Schneider Tech. Bulletin 3038 is complied with before 3000 hours.

1.19 Spark Plug Retention The separation of the spark plug from the cylinder head, on take-off, from a Revmaster Variant of a V.W derived engine, caused a serious accident. If in doubt, fit Helicoil inserts.

1.20 KA23. Trim Spring Failures could cause accidents to inexperienced pilots. Fatigue at the end of the spring cause sudden out-of-trim conditions. Reported to UK agents by BGA. (Failure reported by Midland G.C)

1.21 Grob 109 Airworthiness Directives The latest issue of Foreign AD's Vol III is attached herewith.

PART 2 **GENERAL MATTERS.**

2.1 **PA18 Cub and PA25 Pawnee Airframe Spares.** Univair, 2500 Himalaya Rd, Aurora. C.O. 80011, U.S.A. (303/364-7661 Fax 303/344-3254, TX 317327 will accept VISA). Free parts catalogue available.

2.2 V.W. Aero Engines Barry Smith, of Acro Engines & Airframes Rd, 0642 - 470322, 2 Wren Close, Redcar, TS10 4SB, is keen to discuss STAMO replacements with deprived FALKE owners.

There are also a wide range of Microlight engines by Rotax, which may be worthy of consideration by persons with the capability to prepare a major modification in compliance with JAR 22 design requirements. The BGA have been discussing with NORTON, the longer term application of their rotary range of engines.

2.3 T.21 (Self-Sustaining) Conversions. The BGA has now received a properly engineered modification submission, upon which approval can be considered. The integrity of the powerplant and propeller installation, fuel system, engine controls etc, should be based upon JA22 Design Requirements for Sailplanes and Powered Sailplanes. Only engines and propellers approved for application to microlights or motorised sailplanes should be considered.

2.4 Four Blade (Hoffman) Propeller Approvals for PA-18-180, Rally 180, Robin DR 300/400, PA25 - Pawnee. Trials on these installations are in hand. CAA Approval for the Robin 180 and Pawnee 235 is imminent (hopefully).

2.5 Damaged/Repairable Gliders and Components. The CTO is prepared to compile a catalogue of components, which may be repairable, or otherwise fit to incorporate in repairable glider and motor-glider projects. Please send brief details of what you have and what you want to the BGA office.

R.B.STRATTON.

CHIEF TECHNICAL OFFICER.

AUGUST 1988.

The British Gliding Association Ltd.
Registered No. 422605 England
Registered Office as address

Administrator and Secretary: Barry Rolfe

Kimberley House, Vaughan Way, Leicester
Telephone 0533 531051

British Gliding Association

MEMO TO: EXECUTIVE COMMITTEE

TECHNICAL COMMITTEE

ALL TWIN ASTIR/ACCRO OWNERS

GROB 103 TWIN ASTIR/ACCRO SPAR END SPIGOT FAILURE

Ref TNS/7/8/88.

21/6/1988.

1) INTRODUCTION

A somewhat unique failure of a single sample of the spar-end (steel) spigot has occurred, on the full scale fatigue test rig set up by M.O.D, for the Accro (Viking) gliders operated by the Air Cadet Gliding Schools. The fatigue test rig is programmed to represent the duty cycle of such schools, and an operational Load Measurement (OLM) record has been made of such operations. Included in the O.L.M are periodic simulations of aerobatics, including some 5.3 "g" manoeuvres. It was during such a high "g" simulation, that one of the two spigots, having accumulated some 14,400 simulated winch launches finally broke.

R.A.E. have estimated that a crack was initiated at about 7000 launches, and propagated very slowly to failure at 14,400. (Equating to some 3000 flying hours in the Air Cadet Role).

2) Highest time Twin Astirs and Accros are known to be flying in Germany (winched), Australia and France (aerotowed). The fleet leader is at Sisteron, at between 7500 and 8000 flying hours.

3) The high time Twin Astir (MK2) in the UK is BGA 2676, (EGN) owned by Oxford University Gliding Club and operated at RAFGSA Bicester. Constructed in 1980, Serial No 3542, it has accumulated some 14,000 launches (mostly winched) and some 3000 flying hours.

With the approval of the owners, the B.G.A arranged with Grob for the root-end spigots to be removed, and replaced, by new components. This work was completed at Soaring (Oxford) Ltd's facilities at Hixon Airfield, Nr Stafford. The work took about 4 days, and the glider returned to service on 15th June 1988.

Grob, the LBA (German Airworthiness Authority), and the A.I.G.B. (German equivalent of RAE) hadaccess to these uniquely high time spigots, which, according to ultrasonic non-destructive tests (NDT) carried out in the U.K, had some material anomalies in them. The A.I.G.B confirmed that cracks had been initiated at the tip of the welds, which secure the spigots to the side plates. (See sketch).

Lasham's Accro, which has been 30% winch/auto-tow launched, has accumulated 3000 launches in 900 hours of flying, and has been used extensively for aerobatic training, has been NDT'd, and cracks have been identified.

4) AIRWORTHINESS CONSULTATIONS.

The BGA have remained in consultation with Grob (through Soaring Oxford), the R.A.E the, RAF Central Servicing Development Establishment (who devised the ultrasonic NDT technique) the L.B.A (through the C.A.A. Design Surveyor for Light Aircraft and Gliders), HQ RAF Support Command, and M.O.D (P/E).

The latter convened a meeting in London on Friday 17th June 1988, to which the B.G.A. were invited, together with Grob, the CAA, and the LBA (Mr Irmer).

At the conclusion of the meeting, the BGA/CAA/LBA and Grob representatives discussed the lines of action that were likely to be taken by Grob and the LBA to satisfy international airworthiness requirements as required of contracting states to ICAO.

1) LBA will review all designs in which this type of joint has been incorporated.

2) LBA will consult with the manufacturer, to produce an Airworthiness Directive which will be circulated internationally.

3) Grob have designed a more fatigue tolerant joint, which will be fatigue tested, and which will become available for incorporation later this year. It will be incorporated in the MOD (P/E) fatigue test rig at Slingsbys.

4) Grob will issue a Technical Note, outlining the specific actions and remedies that will have to be applied.

5) THE NATURE OF AIRWORTHINESS DIRECTIVES

a) In two recent cases FAA (USA) AD's issued after in flight spar failures in Piper Cherokees (AD 87/08/08R2) and Piper Commanche's (AD 83/19/03) have had to be suspended because it was subsequently discovered that the single sample failures to which they related, had been caused by unique operating conditions

which were inapplicable across the fleets, worldwide. (When AD's are suspended, the search for cracks ceases!).

b) Likewise, the single sample failure of a spar-end spigot under test-rig conditions to a unique OLM, may one day be found to be not entirely relevant across these fleets worldwide? (e.g. cracks might not have propagated?)

c) The near catastrophic failure of a Boeing 737 pressure hull (when the roof came off), was found to be unique to very high cabin-pressure cycled, very short hauling, aircraft. All high cycle aircraft were inspected. Of the 1500 Boeing 737's worldwide, few, if any were grounded.

d) The G.103 fleet, worldwide consists of 850 gliders.

Of the 98 gliders in Air Cadet Schools out of 196 spigots, 84 have been found to have cracks. Cracks have been indentified at very low hours/launches indeed, suggesting that some cracks may be initiated in manufacture?

There are 10 G.103's in BGA clubs.

6) RECOMMENDATIONS.

a) Whereas the contents of the Grob Tech. Note and the LBA Airworthiness Directive cannot be anticipated, one of the possibilities discussed with Grob (Roland Discher - Airworthiness Engineer), and Herr Irmer (LBA Design Surveyor), on Friday 17th June, was that these gliders should be excluded from aerobatics and winch and auto-tow launching, pending further instructions.

b) Owners may of course choose not to operate their gliders pending further advice.

c) Owners may wish to make known their requirements for replacement, to the U.K Agents.

d) Owners may wish to have their spigots NDT'd as per the attached sketch (courtesy of CSDE and Dan Air).

R.B. STRATTON

CHIEF TECHNICAL OFFICER.

21.6.1988

DAN-AIR SERVICES LTD.
ENGINEERING DIVISION

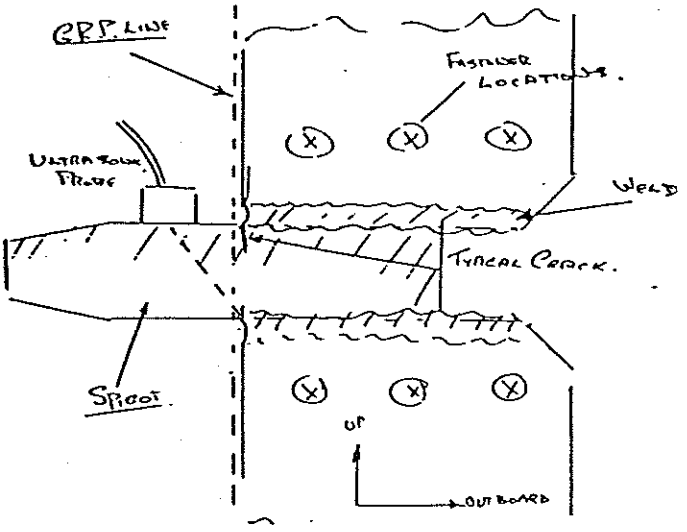
(SAMPLE NDT Technique) Ref. 90/BGA

LASHAM AIRFIELD
NEAR ALTON
HAMPSHIRE GU34 5SP
Telephone:
Basingstoke (0256) 56123 ext 292

C.A.A. APPROVAL No. AI/4518/55
F.A.A. REPAIR STATION No. 810-18F
M.O.D. APPROVAL No. IJJPOI
Office Telex 858239
Stores Telex 858603

N.D.T. TEST

APPROVEI



Customer ....Lasham...Gliding...Club Order/Job No.....3873.....

Address .....Lasham..Airfield,..... Description ..Glider...WingS

.....Nr...Alton,...Hants..... .....End...Spigot..... Technique No. ....N.D.T. modified.....

.... Identification Marks B.G.A. 3223

Part No. ...34075/K/305/1986..... Ser. No. 34075 Aircraft Type GROB TWIN ACRO G103A

METHOD	X-RAY	GAMMA	ULTRASONIC	MAGNETIC	PENETRANT	EDDY CURRENT

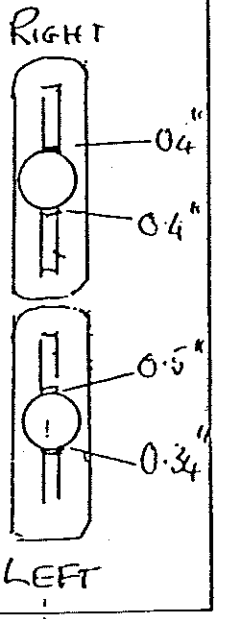
TECHNIQUE OR JOB DESCRIPTION

Request for investigation of possible cracks in spar end spigot, at the end of the weld attaching verticle anchoring plates to spigot. This area is covered by G.R.P.

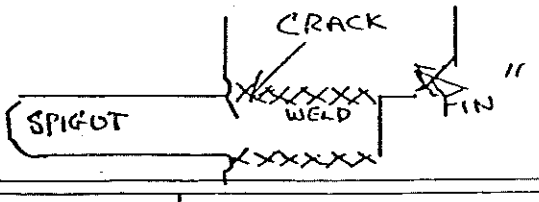
DETAILED REPORT

1. Following telecon with R.A.F. Swanton Morley the pins were examined by an ultrasonic shear wave technique described.
2. LH & RH spar spigots gave crack indications, top and bottom, weld ends.
3. G.R.P. was ground away (about 0.2") to expose the plates and welds.
4. Weld ends were mag/particle inspected.
5. Right wing – top weld – crack 0.4" long.
   – bottom weld – crack 0.4" long.
   Left wing – top weld – crack 0.5" long.
   – bottom weld – crack 0.34" long.

Cracks appear to run into spigots. Depth unknown, unless progressively ground out and M.P.I. inspected until no crack remains, then measure.



BGA Note. 900hrs/3000launches.



ACTION REQUIRED

ASSOCIATED JOB CARD No.

Certified that the above mentioned specimens/parts/materials/systems* have been tested/examined in accordance with the terms of the contract/order applicable thereto and the requirements of the Civil Aviation Authority relating to the testing of such specimens/parts/materials/systems*. This Certificate does not relate to the standard or quality of manufacture of the item/material except as may be specified in the test contract/order.

Work carried out in accordance with F.A.A. Regulations.

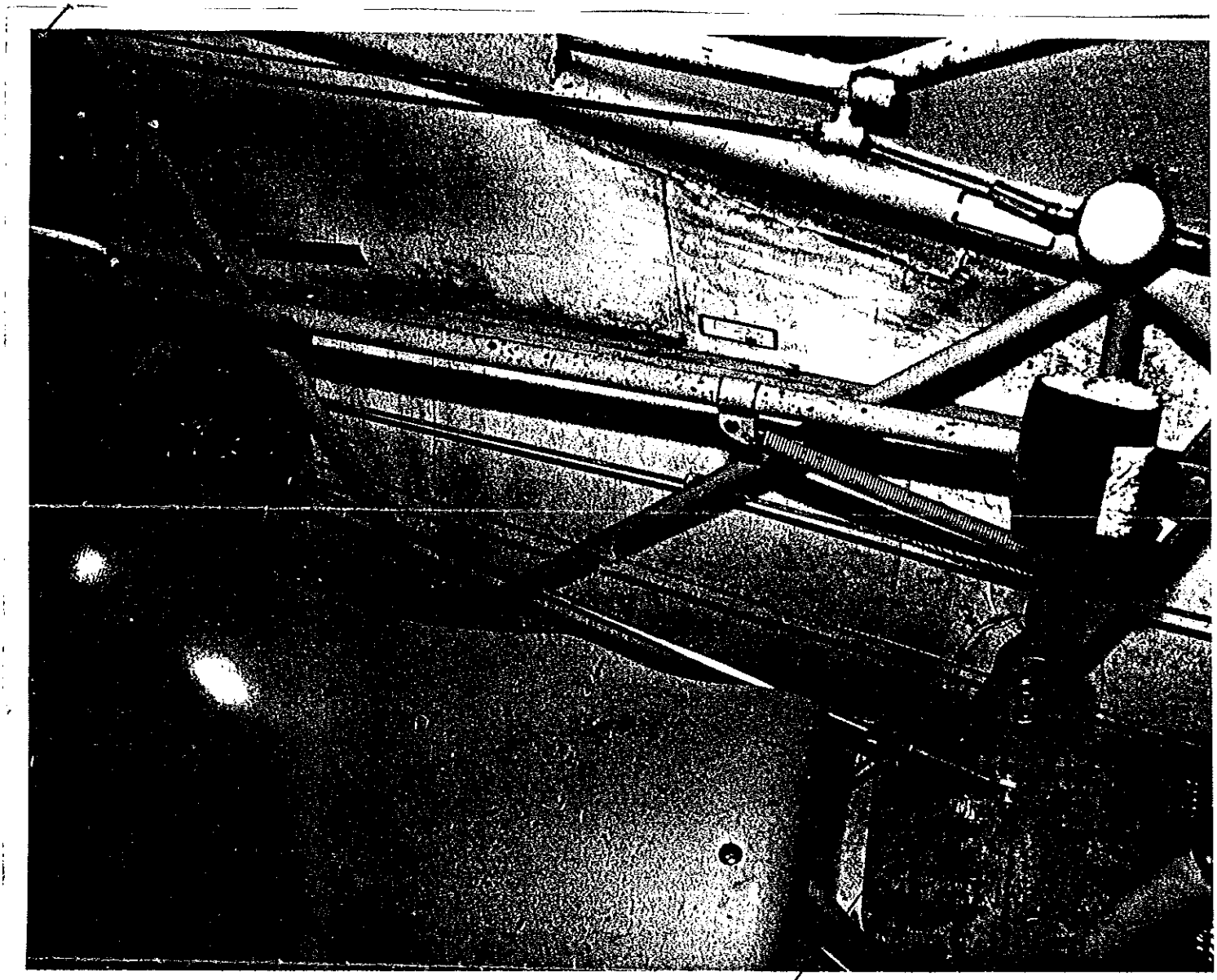
Date ..... 15 June 19 88

Signed .....

for and on behalf of Dan-Air Services Ltd.

DA116

DISABLED PERSONS MANUAL RUDDER.
WELDED BRACKET FAILURE.



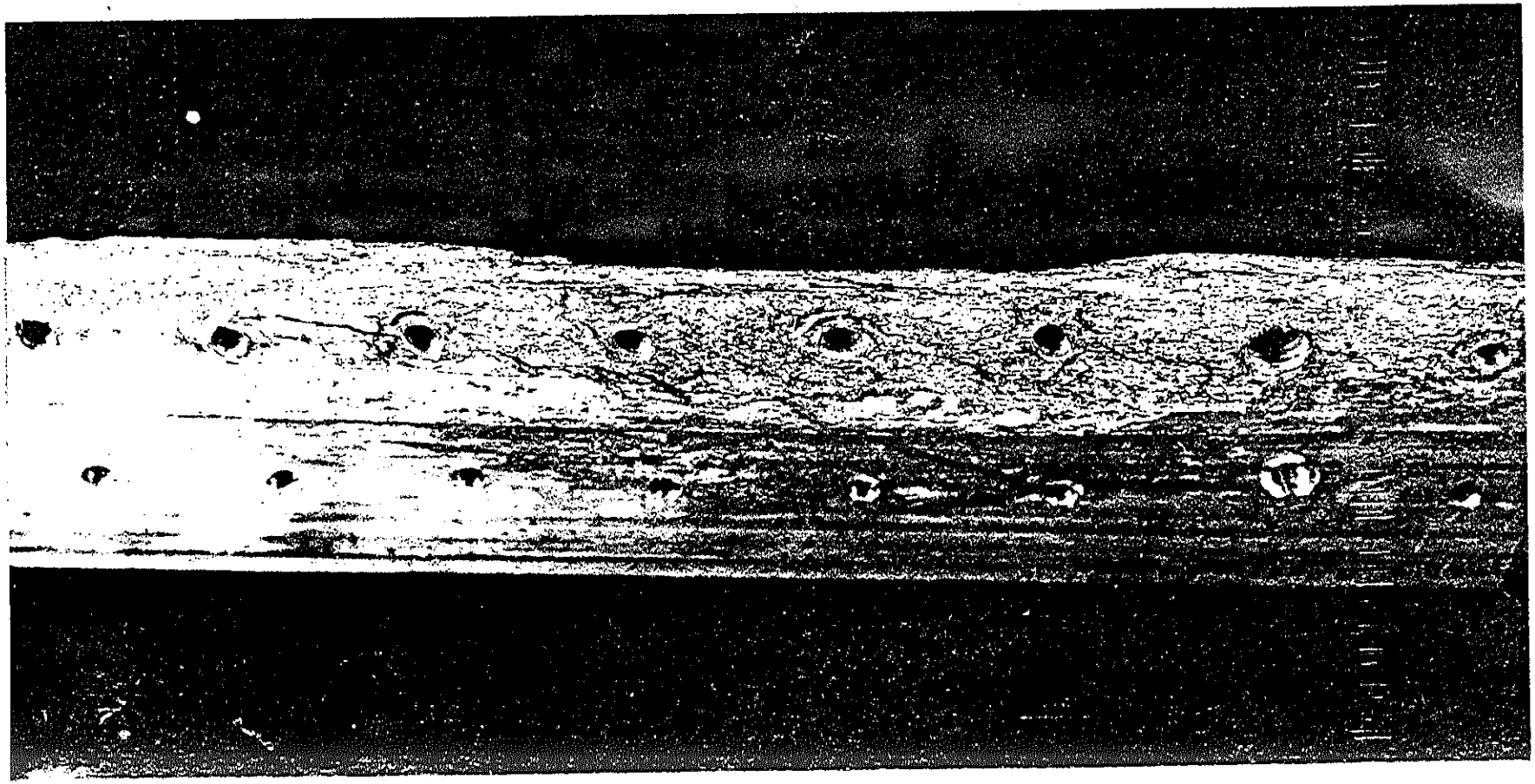
AIRBRAKE (RUDDER) FULCRUM BOLT BRACKET BROKE AWAY, BRINGING THE STEEL TUBE WALL THE SIZE OF THE WELD WITH IT.

DISABLED PERSONS Manual Rudder.

ORIGINAL B.G.A. MOD. PHOTO.

TNS 7/8/8

BLANK UPPER SPAR CORROSION.



BLANIK1/0089

R E P O R T

SUBJECT: BLANIK PORT WING: CORROSION IN UPPER SPAR BOOM AT ROOT END

GLIDER DETAILS BGA No 1321

CONSTRUCTION NO 173301 YEAR OF MFG 1966 TOTAL FLYING HOURS 2125
TOTAL LAUNCHES 3160

No accident damage, Syndicate-Owned for 5 years minimun.

Professionally maintained and hangared during that period.
No serial numbers available but logbook entries do not indicate that wings are other than original.

DEFECT

On inspection of Port wing upper surface buckling of skin between rivets on mainspar joint observed. Rivets also showed strain signs with loose heads. Further inspection, internally, indicated some evidence of corrosion at spar boom extruded angle. On stripping down removing section of boom angle, severe exfoliation of Dural angle was exposed. Corrosion was limited to the angle only (reference Photographs already provided). Other Dural parts in contact with corroded parts showed little or no corrosion. Only the long taper packing showed damage (cracks) caused by the swelling affect of the angle. Laboratory tests of offending piece (Lucas Aerospace) showed no indication of contamination from external sources. It was considered that the angle was breaking down internally by normal process. Stress corrosion was considered but not supported by any indications from other sections.

British Aerospace Warton Materials Laboratory: Confirm that the exfoliation is the product of moisture ingress setting up electrolytic action, with consequent breakdown of extrusion material.

No trace of a 'GR' number or specification could be found on the section of angle removed. There is no evidence of wet assembly technique being used.

There is a log-book entry 1981 (reference R McLean) Form 267 drawing attention to minor spar corrosion.

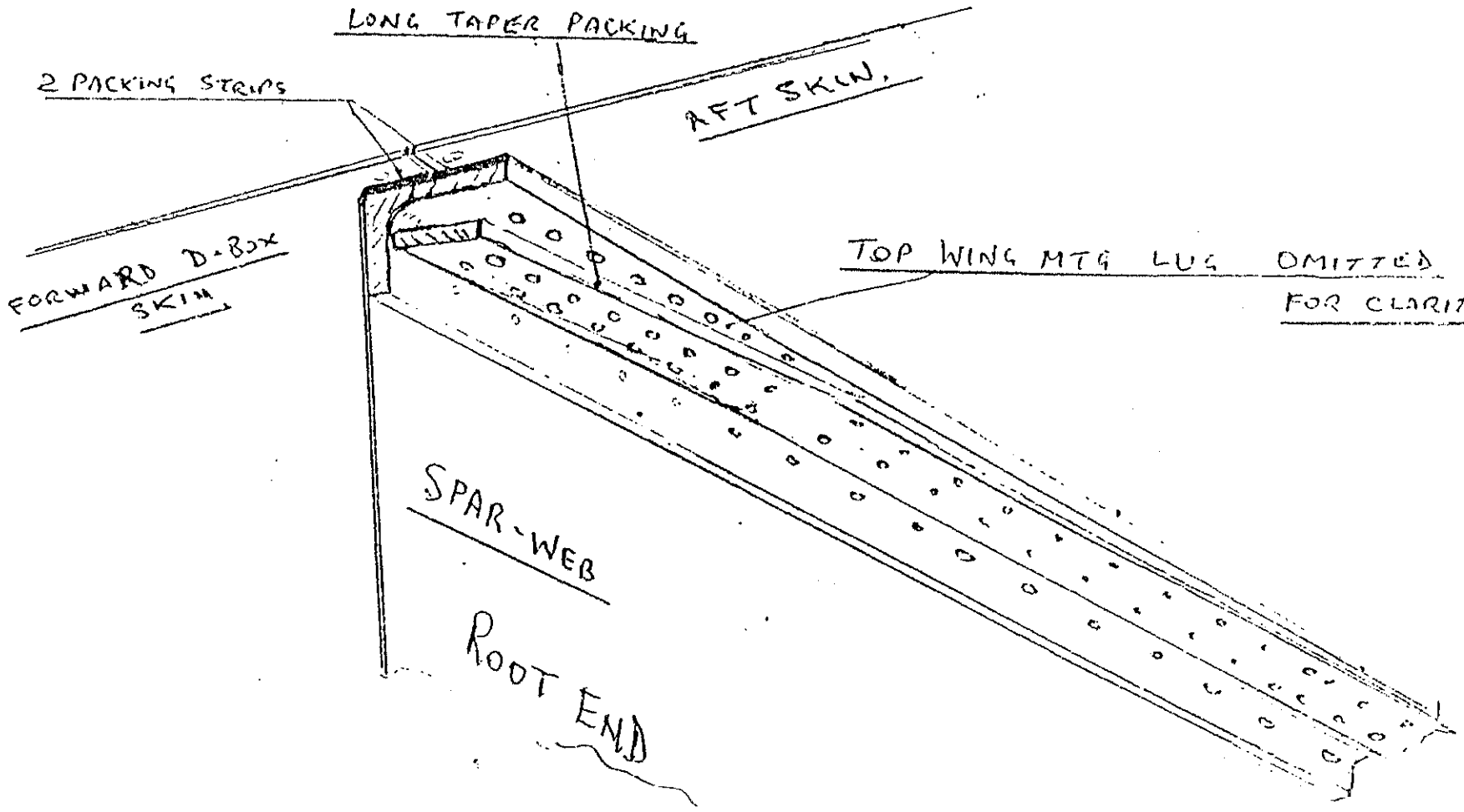
Further signs of corrosion in remainder of Port Wing are evident. The extent of the corrosion makes this Wing unservicable. The Starboard Wing appears to be sound.
Wing.

SIGNED D. Masterson ..... I/C/355 ME
D MASTERSON

DATE 6 June 1988 .....

BECAUSE OF THE DRY ASSEMBLY METHOD IT IS MOST PROBABLE THAT WATER ACCUMULATES IN THE GAP BETWEEN THE 2 SKINS AND SEEPS UNDER THE 2 SEPARATE PACKING STRIPS. THE EXTRUDED ANGLE THEN BECOMES ANODIC AND BEGINS TO BREAK DOWN UNDER THE CORROSIVE CONDITIONS. ITEMS IN CONTACT WITH ANGLE SHOW NO SIGNS OF CORROSION.

D. Mathewson
1/C/355ME.
BFG.C.



AIRWORTHINESS DIRECTIVE

VENTUS

TNS 7/8/88.

88-116 Schempp-Hirth

Date of issue:

30. JUNI 1988

Affected sailplane:
German Type Certificate No. 04.349
"Ventus C"
serial no. 285, 288 through 290 and 292 through 382

Affected Powered sailplane:
German Type Certificate No. 05.825
"Ventus cT"
serial no. 66 and 70 through 112

Subject:
Airbrakes

Reason:
Unlocking/extending the airbrakes causes their cover strips to move slightly inwards towards the wing root before they swing up and above the wing surface.
Should the gap on the inboard end - between the cover strip and the inboard edge of the airbrake housing - be too narrow, the cover strip gets jammed and makes the extension of the airbrakes difficult or impossible. Several such incidents have been reported.

Action:
Action to be accomplished in accordance with appropriate Technical Note.

Compliance:
Not later than August 31, 1988

Technical publications of the manufacturer:
Schempp-Hirth Technical Note No. 349-13 and No. 825-10 of May 11, 1988 which become herewith part of this AD and may be obtained from Messr. Schempp-Hirth Flugzeugbau GmbH, Krebenstr. 25, Postfach 1443, D-7312 Kirchheim unter Teck, Federal Republic of Germany.

Accomplishment and log book entry:
Actions to be accomplished by a skilled person. Proper accomplishment to be checked and entered in the sailplane's/powered sailplane's log by an licensed inspector.

(4)

AIRWORTHINESS DIRECTIVE

D. G. 400.

TNS 17/8/88

88-99 Glaser-Dirks

Date of issue:

25. MAI 1988

Affected powered gliders:
German Type Certificate No. 826
DG-400
serial numbers 4-1 through 4-228

Subject:
1. Empty weight C.G. range
2. Plugged piece of hose at the pneumatic fuel pump
3. Manual revisions
4. Locking pins on wing tips

Reason:
1. When using thin parachutes, there is the possibility, that the pilots position is behind the position used for calculating the present empty weight C.G. range diagram.
2. The plugged piece of hose at the pneumatic fuel pump which closes the extra outlet came off on 1 DG-400.
3. Manual revisions
4. On some DG-400's the head of the locking pins sheared of due to vibrations when taxiing.

Action and compliance:
Action to be accomplished in accordance with Technical Note before June 30, 1988.

Technical publication of the manufacturer:
Glaser-Dirks Technical Note 826/20 of April 20, 1988

which becomes herewith part of this AD and may be obtained from Messrs. Glaser-Dirks Flugzeugbau GmbH, Im Schollengarten 19-20, D-7520 Bruchsal 4, Federal Republic of Germany.

Accomplishment and log book entry:
Action 1, 1a, 1b, 2 and 4 are to be accomplished by an approved service station and to be inspected and entered in the aircraft log by a licensed inspector.
Action 3 may be accomplished by the aircraft owner.

AIRWORTHINESS DIRECTIVE

D. G. 400.
TNS/7/8/88

88-99, Glaser-Dirks

Date of issue:
25. MAI 1988

Affected powered gliders:
German Type Certificate No. 826
DG-400
serial numbers 4-1 through 4-228

Subject:
1. Empty weight C.G. range
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Action 3 may be accomplished by the aircraft owner.

AIRWORTHINESS DIRECTIVE

VENTUS

TN3-7/8/88.

88-116 Schempp-Hirth

Date of issue:

30. JUNI 1988

Affected sailplane:
German Type Certificate No. 04.349
"Ventus C"
serial no. 285, 288 through 290 and 292 through 382

Affected Powered sailplane:
German Type Certificate No. 05.825
"Ventus cT"
serial no. 66 and 70 through 112

Subject:
Airbrakes

Reason:
Unlocking/extending the airbrakes causes their cover strips to move slightly inwards towards the wing root before they swing up and above the wing surface.
Should the gap on the inboard end - between the cover strip and the inboard edge of the airbrake housing - be too narrow, the cover strip gets jammed and makes the extension of the airbrakes difficult or impossible. Several such incidents have been reported.

Action:
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Compliance:
Not later than August 31, 1988

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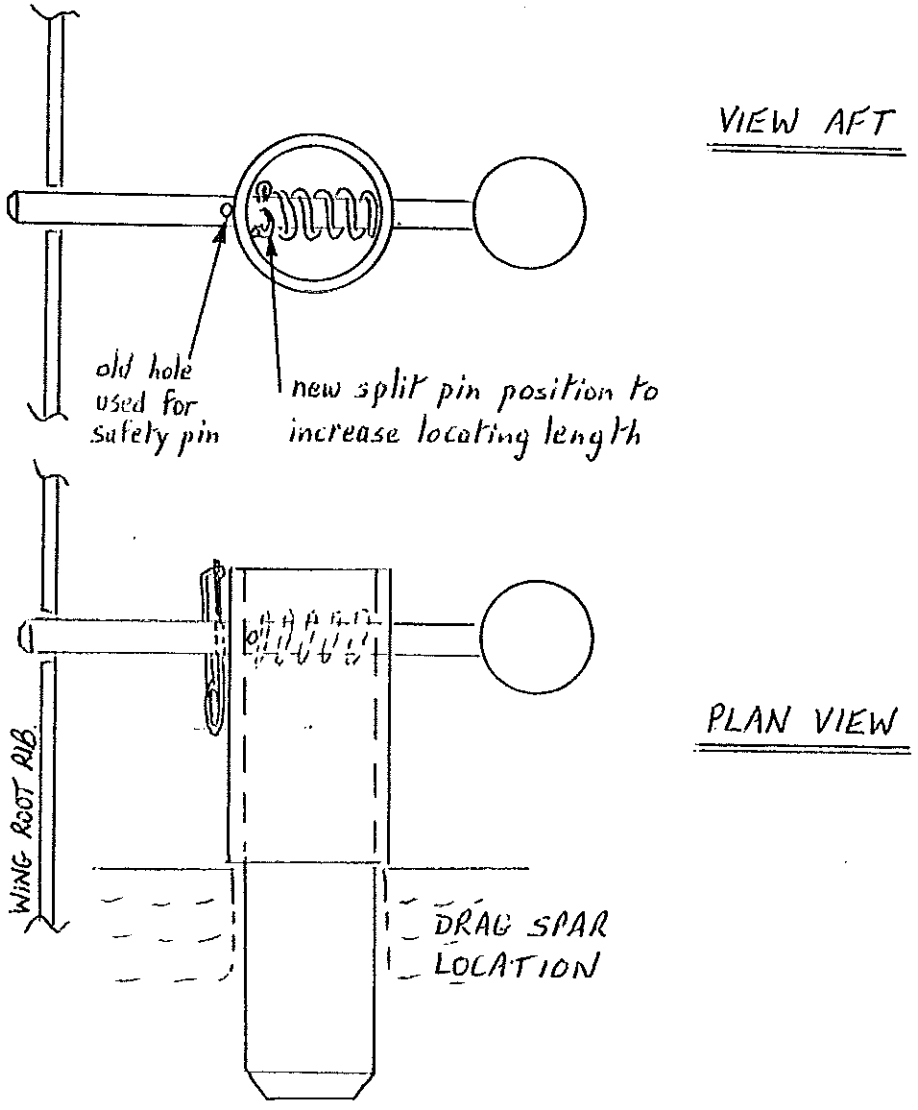
Accomplishment and log book entry:
Actions to be accomplished by a skilled person. Proper accomplishment to be checked and entered in the sailplane's/powered sailplane's log by an licensed inspector.

BBA/TNS/7/8/88

PILATUS B4 - DRAG SPAR PIN

R. BOYD 17.6.88



IMPROPER ENGAGEMENT.

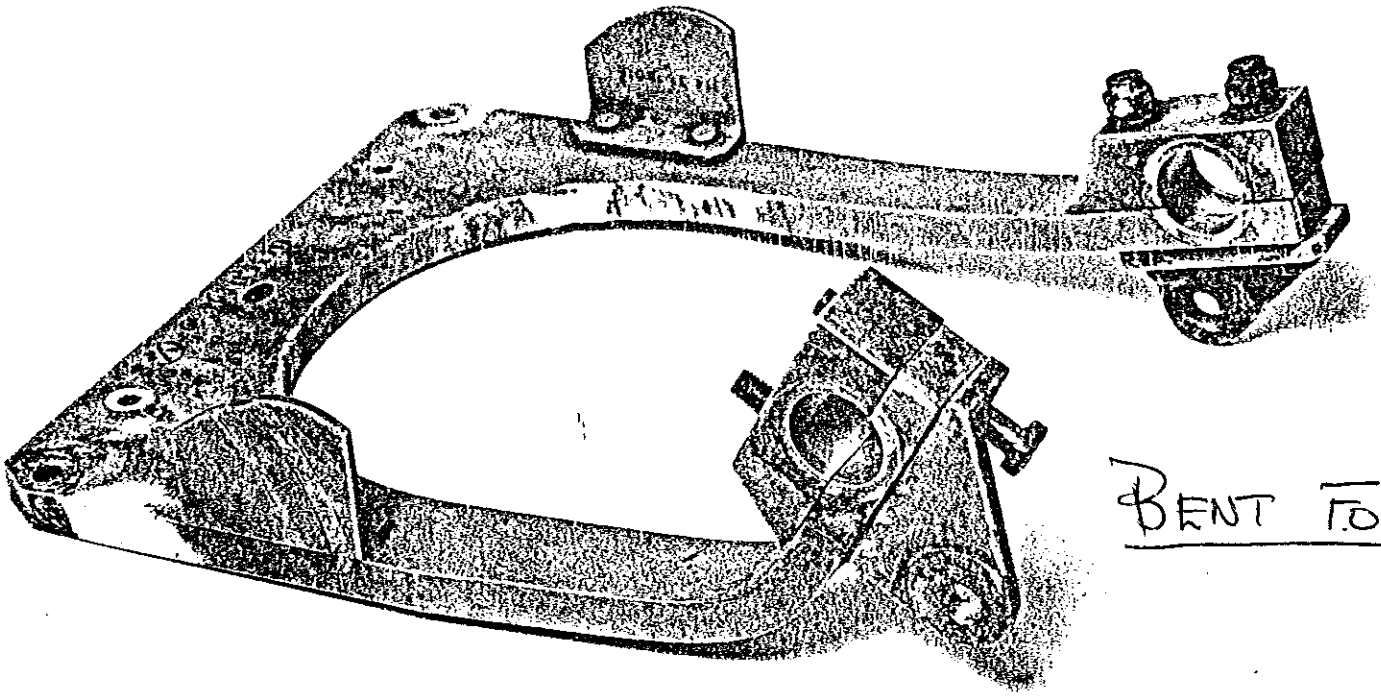
DRAG SPAR PIN

Pilatus. B.4.

Reported by

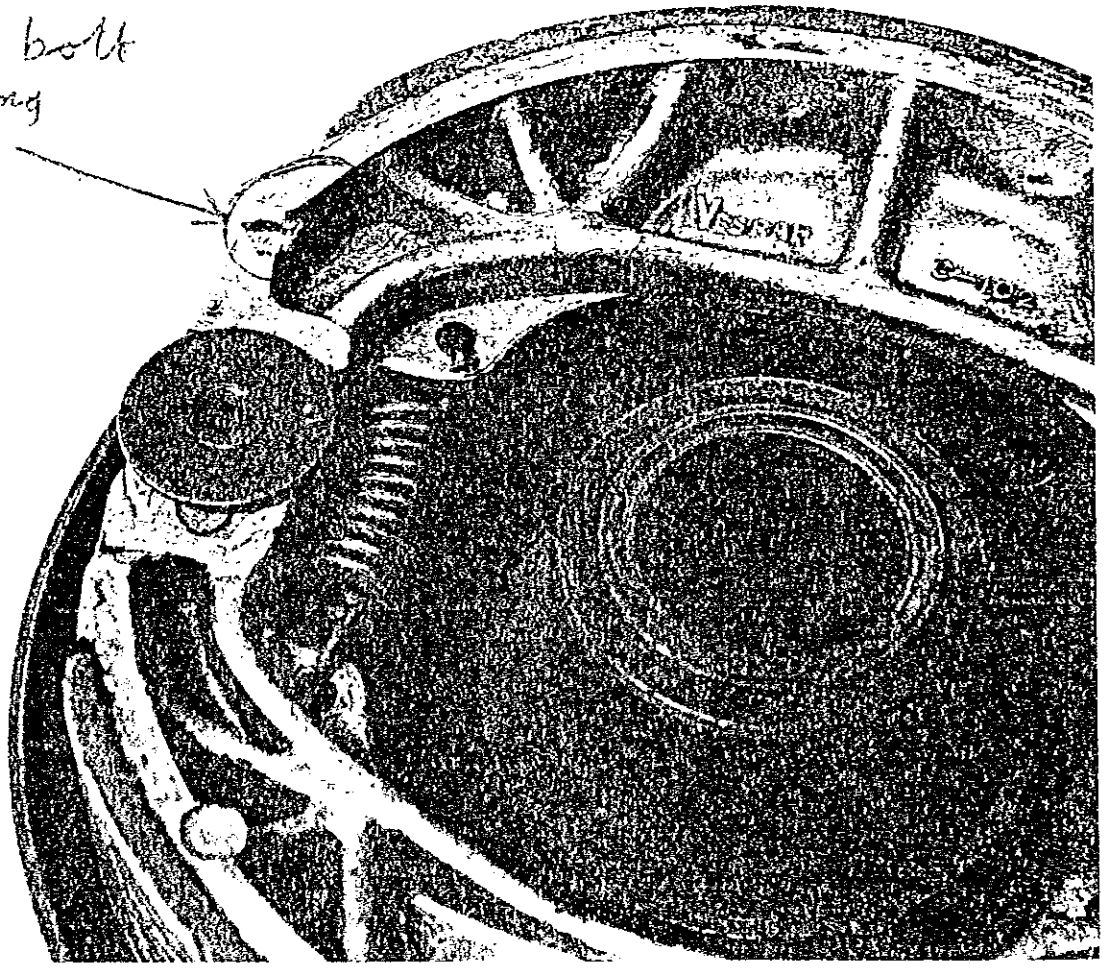
Blackpool & Fylde G.C.

Pilatus B.4. LOCKED BRAKE.



BENT FORK

SPLIT HUB BOLT FAILURE - Locks Wheel.



Reported by:
D.C. Hall.

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
	86-219	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.

3. HAZARDS OF "RUNNING CHANGES"

PAWNEE.

P

Aircraft : Piper PA-25 Pawnee
Date : April 1988

The aircraft had been glider towing and a change of pilot was required. The aircraft was stopped, engine idling, with the brakes off and no chocks in place. The pilot had vacated the aircraft and the replacement pilot was just stepping into the cockpit. In so doing, he pushed the throttle forward with his leg and the aircraft accelerated forward. It ran forward for about 20 yards and then abruptly turned to the left through about 90°. At this point the tail lifted, the propeller contacted the ground and the aircraft tipped onto its nose.

CAA Comment:
The above actions were all contrary to the club's normal operating procedures. Before undertaking "running changes" always ask the question "Do we **have** to do it this way?" and if the answer is **NO**, then shut down the engine in the normal manner.

Never forget that passengers, particularly those flying for the first time, may not have a proper regard for the dangers of the propeller.

In 1983 two passengers were killed in separate accidents when they walked into the propeller, DESPITE being briefed beforehand.

Shut-downs are the only safe course of action.

4. UNATTENDED AIRCRAFT WITH ENGINES RUNNING

P

Aircraft : Three different
Date : January 1988

A Commercial pilot returned to his aircraft to find that parked alongside it were three aircraft with their engines running, completely unattended and with no chocks in place.

When asked, the pilots of the aircraft advised that in view of the cold weather and the necessity to maintain oil temperatures, they had left the engines running.

CAA Comment:
The pilots involved were later interviewed by the airfield authorities and have now stopped this practice. No aircraft should be left unattended with the engine running. Articles 47 and 48 of the ANO apply.

10. CARE AND INSPECTION OF PARACHUTES

GASL/6/88.

P/E

SDAU has been engaged in correspondence concerning possible deterioration of parachutes whilst packed. In some cases, when unpacked for inspection, the rip pins and cones on various parachutes were found to exhibit signs of corrosion.

The major manufacturers of parachutes have confirmed that it is most unusual that these metal parts suffer corrosion whilst packed, and should any evidence of corrosion be apparent, then the main canopy and fabric of the parachute must also be suspect.

Any persons involved with the packing and inspection of parachutes are advised to look especially closely should there be any untoward signs.

E6. FUEL FILTER PROBLEMS

PAWNEE. GASIL. 6/88.

Aircraft : Piper PA-25 Pawnee
Date : February 1988

Shortly after take-off, the engine failed without warning. There were no indications of carburettor icing nor were there indications of rich or rough running apparent. The aircraft was successfully force landed in an adjoining field without damage.

During investigation, the entire fuel system was drained to check for contamination although nothing was found. The system was re-assembled and ground run for half-hour with no problems being observed. The aircraft was then run for approximately two minutes at full power and then the fuel pressure was observed to fall to zero and the engine stopped. During all of these ground runs the electrical fuel pump remained in the ON position.

Further inquiries with another operator suggested that a complete change of fuel filter/fuel filter body could possibly resolve the problem as the second operator had had similar problems on at least two occasions. A new filter and filter bowl was installed, the aircraft ground run and test flown with no further problems. The author advised that this problem appears only to apply to Pawnees with wing tanks and electric pumps.

E4. AILERON CONTROL HORN DAMAGE

BGA note. There is often a fine mesh filter in the base of electric fuel pumps, which may not pass w

Aircraft : Piper PA 25 Pawnee
Date : March 1988

The aircraft involved in this occurrence is one of a fleet of Piper Pawnee's which is used exclusively for glider towing.

During the annual inspection, the control horn on the left aileron showed signs of movement. After fabric removal, it was found that the horn had flexed up to 1/8 of an inch with some local buckling of the rear spar and loose attachment rivets. The repair involved fitting an 8 inch doubler.

The reporter advises that this is the second Pawnee to have a similar problem on the left aileron. He feels that the problem may be due to hard right turns as the glider and tug separate. During this manoeuvre, the left aileron is always the most heavily loaded. He suggests regular inspections of this area and investigation if any movement is found.

E5. LANDING COLLAPSED ON LANDING

Aircraft : Piper Arrow G-THSL
Date : November 1987

The following are extracts from a reportable accident at Southend.

When the landing gear was selected 'down' the right main gear green light did not illuminate. The gear was recycled three times to no avail, and the bulb was changed. There was still no green light and the emergency free fall drill was carried out, but this still did not illuminate the green 'down' light. The aerodrome controller observed that that all three landing legs appeared to be down and the aircraft subsequently landed.

contd...

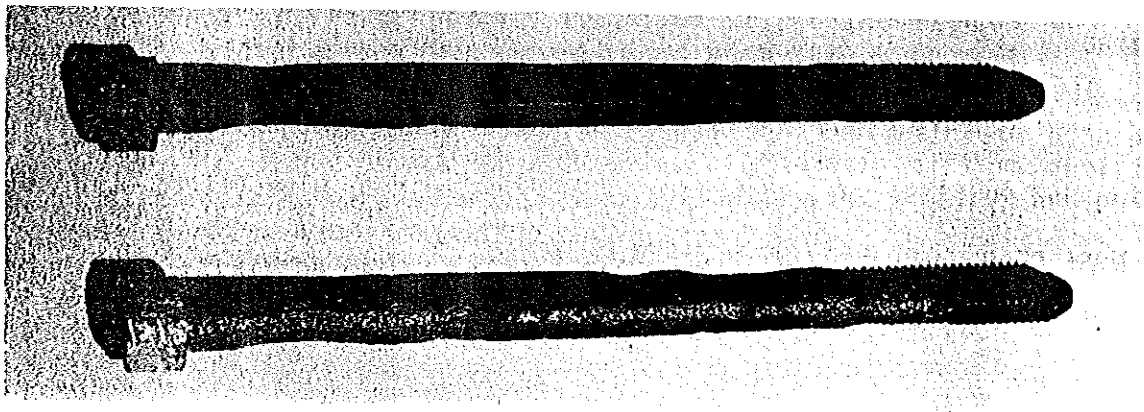
Engineers Supplemen

SEE ALSO P/E ITEMS IN MAIN GASIL

E1. REAR SPAR ATTACHMENT BOLTS BADLY CORRODED

(Could apply to many aircraft of wooden construction)

Aircraft : Jodel DR1050
Date : November 1987



During the C of A renewal inspection, the rear spar to fuselage attachment bolts were removed for inspection. The threaded ends of the bolts required numerous applications of penetrating oil to release them and the bolts were removed with difficulty. The corroded bolts were not cadmium plated and as the photo shows corrosion had reduced them in diameter. The replacement bolts were cadmium plated and assembled with 'Duralac'.

The LAMS inspection schedule requires that Structural Attachment joint assemblies be inspected every 150 hours and each Annual check. The reporter suggests that these bolts be removed and inspected every three years.

E2. CRACKED EXHAUST VALVE

Aircraft : Piper PA18 150 Super Cub
Date : February 1988
Engine : Lycoming O-320-A2B

The engine was suffering from low compression on No 4 cylinder. Engineering investigation showed a circumferential crack around 80% of the exhaust valve head. The cylinder assembly had operated 1000 hours since overhaul.

CAA Comment:
SDAU database has on file numerous cases of the exhaust valve breaking, or the head separating, on this type of engine. In most cases this has occurred at about the time the engine is halfway through its nominal life.

E3. WORN REAR SPAR ATTACHMENTS

Aircraft : Piper PA32 Lance
Date : March 1988

The Maintenance Organisation was carrying out an Annual Star inspection, when slight movement was detected at the right-hand wing tip. Further investigation revealed the rear spar wing attachment bolt was loose and slight wear of the holes in the fitting. After consultations with the manufacturer a repair scheme was agreed consisting of fitting a special oversize close tolerance bolt.

CAA Comment:
Has any other maintenance organisations detected this problem?

E6. **SEVERE DAMAGE TO WING SPARS** TUG AIRCRAFT.

Aircraft : Bellanca 7GCBC
Date : April 1987

The aircraft was repaired, inspected and returned to service following a hard landing where the landing gear collapsed.

As a result of FAA Alert No 113 December 1987 which contained details of Bellanca wing structure failures, the aircraft was recalled and re-inspected. Rectangular cutouts were made in the top of the wing to inspect the tops of the spars. Defects were found in both spars which had not been previously visible.

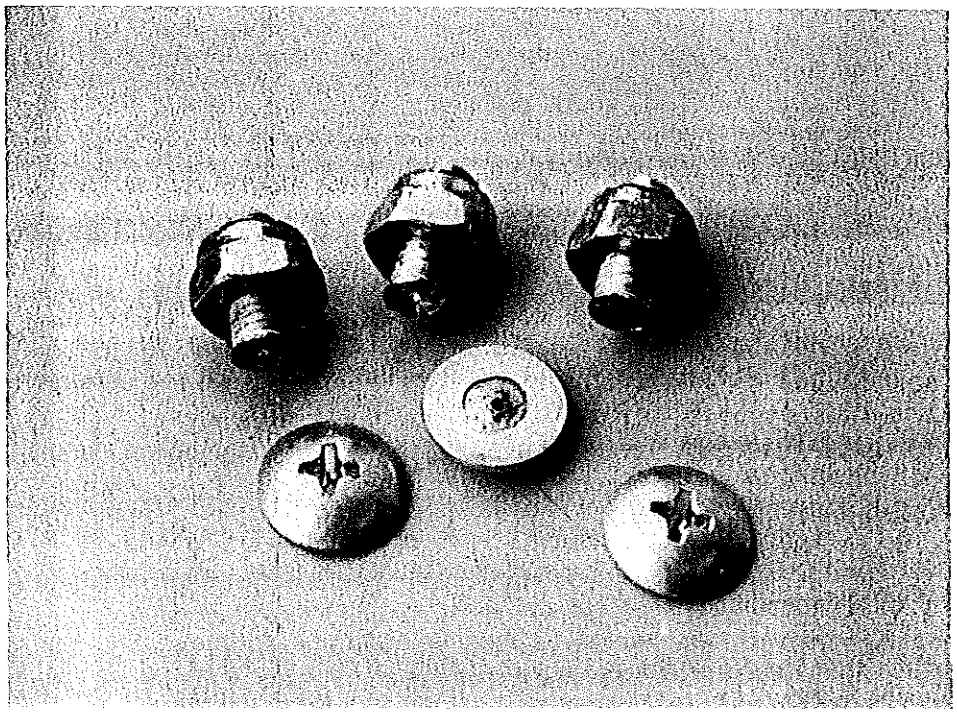
It is highly recommended that this detailed inspection is accomplished on all spars where a "strike" is known to have occurred. Severe chafing of the spar was also found where the ribs were distorted or attachment nails were loose. These were not evident by normal inspections and defects were found on a set of wings which had been removed from another aircraft some years previously and stored. The damage to these spars caused by the rib chafing can be very deep - as if cut by a saw. Extreme vigilance is essential when inspecting for wings of these aircraft.

CAA Comment:
This particular matter was raised in GASIL 2/88 Item E25.

E7. **UPDATED INFORMATION- ISSUE 11/87**

Item 10 Head Detached on Truss Headed Screws

Still more of these faulty screws are appearing. The ones shown below are used to secure the aileron hinges to the wing on a Cessna 150. Extreme caution must be exercised when using these screws and should any fail then the batch should be returned to the supplier.



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British Gliding Association

BGA TNS/7/8/88.

16th June 1988.

L'Hotelier Connectors Can Endanger Your Health!.

a) The ball/socket can become worn.

b) The springs can lose their tension.

c) They can become contaminated with dirt, and lack lubrication.

d) The sockets can become distorted if they are overloaded. They may then fail to hold on to the ball under load. Check after ground loop or other incidents.

e) A safety pin hole is provided as a means of ensuring that they have been correctly mated and checked. Safety pins are available from the motor trade, and are used for brake-pad retention. Make sure safety pins do not foul on anything.

f) There have now been two cases of aileron disconnects on Astirs. The rods can drop into the rootend structure, locking on full aileron deflection. In one case there was a fatality, in Germany.

R.B. STRATTON

CHIEF TECHNICAL OFFICER