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British Gliding Association

28th July, 1983.

B.G.A. Technical Committee
Technical Newsheet

TNS 7:8:83

Part 1. Airworthiness "Aggro" (please add to the 1983 pink pages)

1.1 T.65 "Vega". Elevator drive - excess backlash. Periodic checks should be made to ensure that excess backlash, which may lead to the onset of flutter does not arise on T.65's (reported by F.G.I. Lasham).

1.2 T.65 "Vega" - Debris loose in wings fouls control system. Periodic checks should be made to "shake-out" such debris, which jammed the speed brakes. (Reported by S. Duxbury-Shobdon.)

1.3 DG 200. Debris loose in wings. Sizeable amounts of g.r.p. debris has been shaken-out of new wings by Chris Batty, Cotswold G.C.

1.4 Grob 109 (motor-glider). TM 817-10 requires immediate changes to the Flight Manual to reduce the c.g. range and to describe the procedure for spin recovery. (Copies from UK agents.)

1.5 Grob 109. Fuel system modification. To prevent vapour formation and engine malfunction. (Details from UK agents). Engine malfunction in UK "hot" conditions have been reported.

1.6 Grob 109. Performance/propeller settings. Hoffman Technical Note EB 2.8 dated 17th February, 1983 gives instructions on the correct setting of propeller fine pitch stops. (Available from UK agents). Caution. Sample Tachometers tested by stroboscope have been found to be under-reading by more than 100 r.p.m. at full throttle.

NOTE: Hoffman EB 2.8 applies to propeller type HO-V 62R serial numbers over 421 fitted to any type of motor-glider.

1.7 Sportavia RF5. (Correction to TNS 5:6:83 item 1.3). AD 79-533-2 does not apply to RF5 aeroplanes and should be cancelled. (Notification to the CAA for correction, by Soaring Equipment Limited.)

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1.8 PA-18 (Tugs). Undercarriage attachment failures to fuselage longerons. Cracks in welded attachments leading to leg detachment have again been reported (Booker G.C.)

1.9 PA-18 (Tug). Exhaust mufflers - blocking of the outlet pipe. Piper Service Bulletin 759 has been issued requiring inspection, test and modification to prevent recurring failures (reported in the UK) leading to loss of performance. (Copies from Technical Library, CSE Aviation Limited, Oxford Airport, Kidlington, Oxford, OX5 1RA).

1.10 Rolleson Condor. Battery Installations. During a mismanaged glider/tug release incident, negative "g" disloged the battery and caused minor damage.

1.11 Extracts from the CAA General Aviation Safety Information Issue 3/83. Metal Propeller blade failure. Whereas this incident relates to PA-28R-300 Cherokee, this type of catastrophic failure is applicable to all types and in particular to glider towing operations! Ref. CAA Notice No. 55.

1.12 Blanik - Fatigue failures - undercarriage assemblies. Several cases have been reported, some causing extensive damage. Some Blaniks have exceeded 10,000 landings and regular inspection is strongly recommended. Oleos should be correctly inflated at all times.

1.13 LS3, 3A, LS3-17, LS4 wheel brake lever on hub can foul launch cable. Technical bulletins 3036 and 4019 require immediate changes to avert this hazzard. Copies attached, LBA A/D LTA83-118 refers.

1.14 Dittel Radio Installations - Locking of Radio. A case has been reported of jaming of the control stick by unsecured radio sliding out of the "can", because the nylon locking device was not secured in the "lock" position. A positive check should be made whenever replacement takes place. Could apply to other types of radio installations.

1.15 Grob G103 "Acro" Rear Canopy Locks. The edge of the slot in which the lock operates may be razor sharpe and can damage the operator!

1.16 Damage to Spars. KA7, Falke etc. Two cases have recently been reported of "exploded" spars near the root end, due t water ingress and massive humidity change. This very expensive damage may be aggravated by poor hangarage/storage. In particular "Falkes" should not be picketted out in damp conditions.

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Part 2. GENERAL MATTERS

2.1 Standard Repairs to Welded Structures. AC43-13 "Acceptable methods, techniques and practices, aircraft inspection and repair" (BGA office £9.15) and CAA CAI P leaflets BL/6-4 (OXY) and BL/6-5 (ARC), give guidance on standard repairs and techniques. There is therefore, no excuse for perpetrating unorthodox repairs!

2.2 LS4. Water-ballast modification. Technical Bulletin 4014 retrospectively introduces water-ballast, but requires landing-gear changes. TB 4013 introduces landing gear modifications.

2.3 New Types Approved by the BGA:

a) SZD-50 "Puchatz" subject to BGA modifications available from the BGA office.

b) Hoffman "Dimona" 2 seat motor-glider. The CAA have type approved the above, which should be added to the BGA approved list.

c) DG 400 (single seat motor-glider). This type is now approved by the CAA and will be added to the BGA list.

2.4 Lightening strikes. The BGA would like to have brief details and photographs of any incidents, particularly to GRP sailplanes. So far we have records of damage only to wooden gliders, including a Bergefalke 2 in July, 1983.

2.5 Synthetic Resin Adhesives (CAIP Leaflet BL/6-7). CAA letter to operators No. 55 (herewith) is self-explanatory and should be actioned as requested, with copies to the BGA.

R.B. Stratton
August, 1983.

TNS/7/8/83.

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Airworthiness Division

9/97/LTO 555

20 July 1983

LETTER TO OPERATORS NO 555
ERROR IN CIVIL AIRCRAFT INSPECTION PROCEDURE
LEAFLET BL/6-7 ENGINEERING PRACTICES AND PROCESSES
SYNTHETIC RESIN ADHESIVES

When CAIP Leaflet BL/6-7 was raised to Issue 3 in December 1979 an error of omission occurred in Paragraph 11 - Aircraft Repairs. The final sentence of Paragraph 11 should have read:-

> "Where Urea Formaldehyde (UF) glues are to be used the surface should be wiped with a solution of 10% w/w acetic acid in water, and allowed to dry before applying the glue".

In the printed Leaflet the word 'Urea' was omitted, and the statement can thus be construed as applying to all formaldehyde glues. This was not intended, and this practice must only be used for urea formaldehyde glues. If the acetic acid treatment is used prior to the application of (for instance) Resorsinol Formaldehyde (RF) glues, which include the commonly used Aerodux 185 and 500, then the joint strength can be seriously impaired. RF glues will however tolerate the alkaline residue when casein glue has previously been used.

If the acetic treatment has been used in conjunction with RF glues in primary structural joints, these joints must be regarded as suspect, and any instances reported as a matter of priority to the Aircraft Maintenance and Approvals Section of the CAA Airworthiness Division at Redhill. Sample types of aircraft for which this Letter to Operators is applicable are listed overleaf. This list is not exhaustive.

This Letter to Operators is circulated to PFA, BGA and Rollason Aircraft and Engines Ltd., in addition to all CAA Area Offices. Addressees are requested to promulgate the information as widely as possible to owners and organisations maintaining aircraft with wooden primary structures. This information will be repeated in the next issue of the General Aviation Safety Information Leaflet, and the amendment to CAIP Leaflet BL/6-7 is being processed by the Civil Aviation Authority.

P J ADAMS
AIRCRAFT MAINTENANCE & APPROVALS

LS4

Subject:	Landing gear, brake lever on Kobold hub pointing forward
Effectivity:	Sailplane models LS3, LS3-a, LS3-17, LS4
Accomplishment:	Before next winch launch, but not later than August 31,1983
Reason:	In two cases a foreign cable was caught during winch launch by the forward pointing brake lever causing crash landings in both cases with severe injuries resulting. Therefore, the following modification is recommended
Instructions and Material:	With the Kobold hub installed (brake anchor plate diameter 110 mm <4.33 in>) and brake lever pointing forward, the lever position may be altered according to drawing 4BR-52 and instruction to rearward up.
Weight and Balance:	not affected
Remarks:	1) Materials, instruction and drawing may be obtained from manufacturer 2) Modification must be checked by inspector and signed in logbook 3) For LS4 only: Enter accomplished TB on page 14-1 of Maintenance Manual <Page 6-1 for US version>, TB-AD-Accomplishment List

TNS 7/83

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

LS3/LS4
Brake Lever.

LTA 83-118

Instructions for TB 4019, Modification of brake lever position for Kobold hub

Numericals with single parts refer to drawing 4BR-52

1) Loosen brake cable (1) from brake lever (2), 10 mm wrench.
2) Disassemble cable adjuster (3) from landing gear fork and disconnect cable.
3) Connect cable adjuster to cable support (4) and lock in max. turned in position.
4) Disassemble wheel from fork, 19 mm wrench, watch positioning of spacers.
5) Disassemble existing brake anchor from left fork arm, 13 mm wrench.
6) Assemble brake anchor (7) to left gear fork arm, interleaving two 8 mm washers, cutout in (7) facing in axle direction, fit bolt from inside.
7) Disassemble brake lever (2) from anchor plate (8) tapered gearing, 13 mm wrench.
8) Assemble wheel with spacers, connect brake anchor (7) with anchor plate (8).
9) Assemble brake lever (2) in approx. 1 o'clock position and connect cable.
10) Assemble supporting clamp (5) on left side of fork cross member (6).
11) Adjust cable length by bolting cable support (4) to support clamp (5). Later readjustment is easily possible due to vernier holes and adjuster (3).

Edition: 1 June, 1983

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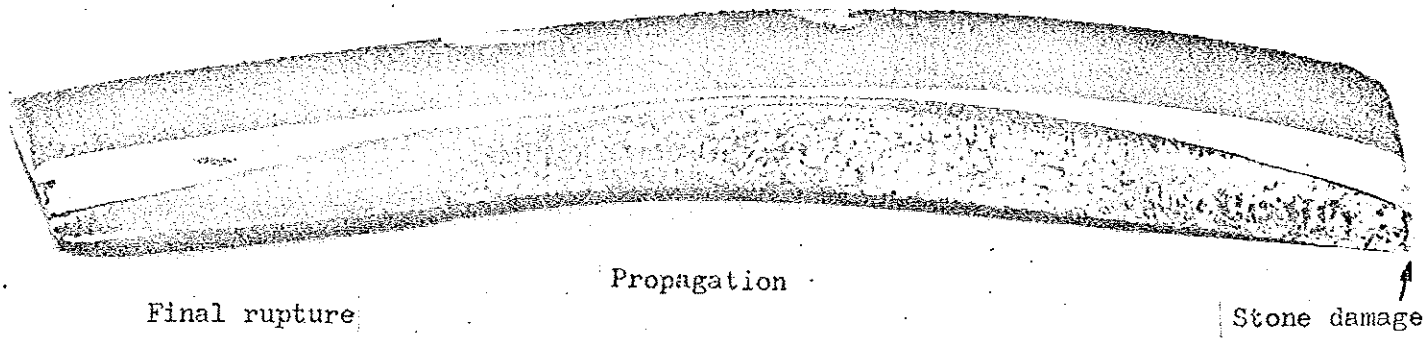
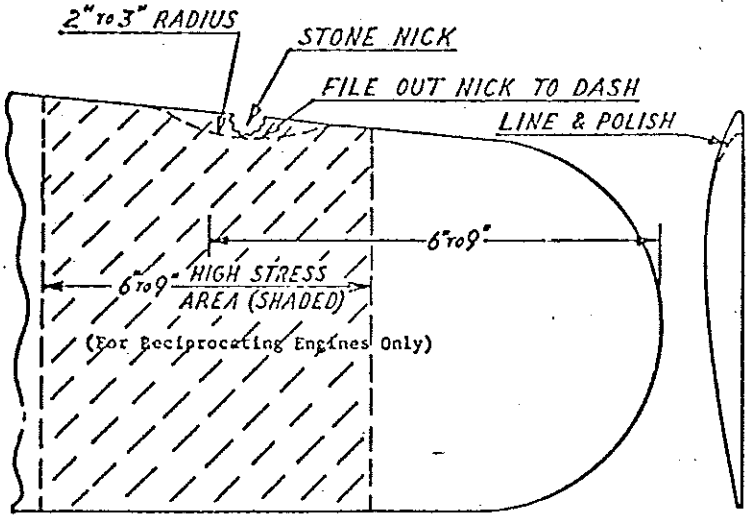
21. Issue 3/83 - Item 14 Piper PA28R - 200 Cherokee P/E
Part of Propeller Blade Broke Off

Laboratory examination showed that the blade had failed due to high cycle fatigue through ¾ of the blade section before final rupture. The fatigue originated at a notch (only 0.050" deep, slightly more than the thickness of a halfpenny) in the leading edge of the blade which displayed bruising typical of stone damage. The



blade leading edge contained other stone damage. The combination of this engine and propeller are known to result in high blade stresses in the 2100-2350 rpm band. A warning in the Pilot's Operating Handbook prohibits continuous operation in this rpm band which is also identified by colour coding on the engine rpm indicator (see also Hartzell Bulletin 89). We have heard of two cases on foreign registered aircraft where a similar engine/propeller combination also resulted in blade failures about 4 inches from the tip.

In December 1954 (Revised in February 1969) Hartzell Service Bulletin No 31 'Avoidance of Propeller Tip Failures - General Maintenance Procedures' was issued applicable to all metal propellers. The diagram below was included:-



Ref AH30
CAA Notice
No. 55.

It was also stated that "a small nick at the point of peak stress may be as detrimental from the fatigue standpoint as a large nick. A quick inspection for cracks at the critical area should be included in the pre-flight inspection".

Care of propellers is covered by Airworthiness Notice No 55 'Routine Maintenance of Propeller Blades'.

22. Issue 4/83 - Item 4 Cessna 172 Elevator Control Stop Loose, Shackle Bolt Sheared P/E

Examination showed that the stop-bolt had been hammered in by the elevators blowing in the wind while parked. This had caused the nut plate into which the stop bolt is screwed to be torn from its attaching rivets. The increased elevator down travel allowed the elevator down cable bellcrank bolt to strike the rear bulkhead, fracturing the bolt. This demonstrates the importance of proper precautions when parking aircraft.

No: 5/83 Ref: EW/G83/04/02

TNS 1/7/83

Aircraft:	Auster 6A G-ASOC (light singe engine fixed wing aircraft)
Year of manufacture:	1946
Date and time (GMT)	3 April 1983 at 1415 hrs
Location:	Greatworth, Northants
Type of flight:	Private (club)
Persons on board:	Crew - 1 Passengers - Nil
Injuries:	Crew - 1 Passengers - Nil
Nature of damage:	Substantial damage to engine and propeller, fin and rudder and starboard mainplane
Commander's Licence:	Private Pilot's Licence
Commander's age:	47 years
Commander's total flying experience:	283 hours (of which 120 hours were on type)

The aircraft was in use for glider towing. The pilot was asked to retrieve a glider which had landed in a field away from the operating airfield. He arranged for an experienced glider pilot to go to the field, inspect the surface and make hand signals to wave him off if the field appeared to be unsuitable for landing. After arriving over the field, the pilot flew a dummy approach, checked the field for length and obstructions and noted that the pilot on the ground was clearing him to land. He then made a normal approach and landing but during the ground roll the main wheels hit a tractor rut and the aircraft turned over onto its back.