

B.G.A. TECHNICAL COMMITTEE

TECHNICAL NEWSHEET

TNS 5/6/83

PART 1 AIRWORTHINESS 'AGGRO' Please add to the 1983 Pink Pages

- 1.1. SZD 45 "OGAR" Fuel Tank - periodic check of electrical bonding of G.R.P. fuel tank. C.A.A. Directive 0837/PRE/78 makes the above check mandatory, at 50HR inspections. Please add to LAMS Section 10. - Record in log books.
- 1.2. RF4D & RF5 Series Bottom Rear Fuselage Box and Rudder Post - inspection for damage caused by excessive humidity. C.A.A. foreign A/D 83-49 requires immediate inspection, and damage to be repaired in accordance with Fournier Service Bulletin S.02.82 - Record in log books.
- 1.3. Sportavia - PUTZER RF 5 Series Installation of Elevator Balance Weights C.A.A. foreign A/D 79-533/2 - applicable up to and including Serial No. 6022 requires immediate modification in accordance with S-PUTZER modification No. 23. - Record in log books.
- 1.4. FOURNIER RF3 Inspection of wing skins for cracks and glued joint deterioration. German (LBA) AD 67-39-1 is repeated for inclusion in B.G.A. pink pages. LBA A/D 75-76 requires certification of RF3 in the "utility" (non-aerobatic) category only.
- 1.5. PIK 20B and D (all serial numbers) Service Bulletin M20-26 (herewith) requires inspection of RUDDER BOTTOM HINGE.
- 1.6. KA6 BR (may apply to other variants) Tailplane front attachment lug fractured. This variant had been fitted with a lifting handle secured to the tailplane securing nut, which probably induced the failure - Delete all such devices, and inspect all variants for cracks. (reported by Essex G.C.)
- 1.7. KA6/KA6 CR ELEVATOR DRIVE PUSH-ROD DAMAGED, probably due to incorrect alignment whilst rigging. Inspect as required, in accordance with sketch herewith. (reported by Essex & Suffolk G.C.)
- 1.8. SKYLARK (series) External Canopy Locking-Lever Backlash may make unlocking from the outside impossible. Emergency rescue requires that external locks function correctly. (reported by Blackpool & Fylde G.C.)
- 1.9. T.21 (SEDBERGH) AILERON ROD FAILURE between control sticks Yet another case of fatigue failure at the threaded end. This rod could be replaced by a fixed length link of equivalent strength. The damage is done by occupants treading on the rod. (reported by Connel G.C.)
- 1.10. K.21 Aerobatic Certification (Accelerometers) The Flight Manual requires the fitting of an accelerometer before certification for aerobatics becomes valid.
- 1.11. GROB Series Gliders. Ruder Pedal Slide Unit - inspection for cracks A/D 83-43 and Grob Tech. Note 306.21 requires inspection :-

G-102	- Serial No.5501+
Club Astir 3	- Serial No.5569-C
Club Astir 3b	- Serial No.5568-CB
Standard Astir 3	- Serial No.3564-S
- 1.12. GROUND LOOP DAMAGE Inspections Invisible damage can occur to G.R.P. gliders in ground accidents. They may not buckle, or splinter, but internal control systems, control support brackets, and bulkheads, upon which the integrity of the glider depends, may have been severely damaged. Please use your influence to encourage in-depth inspection after such incidents.

PART 2 GENERAL MATTERS

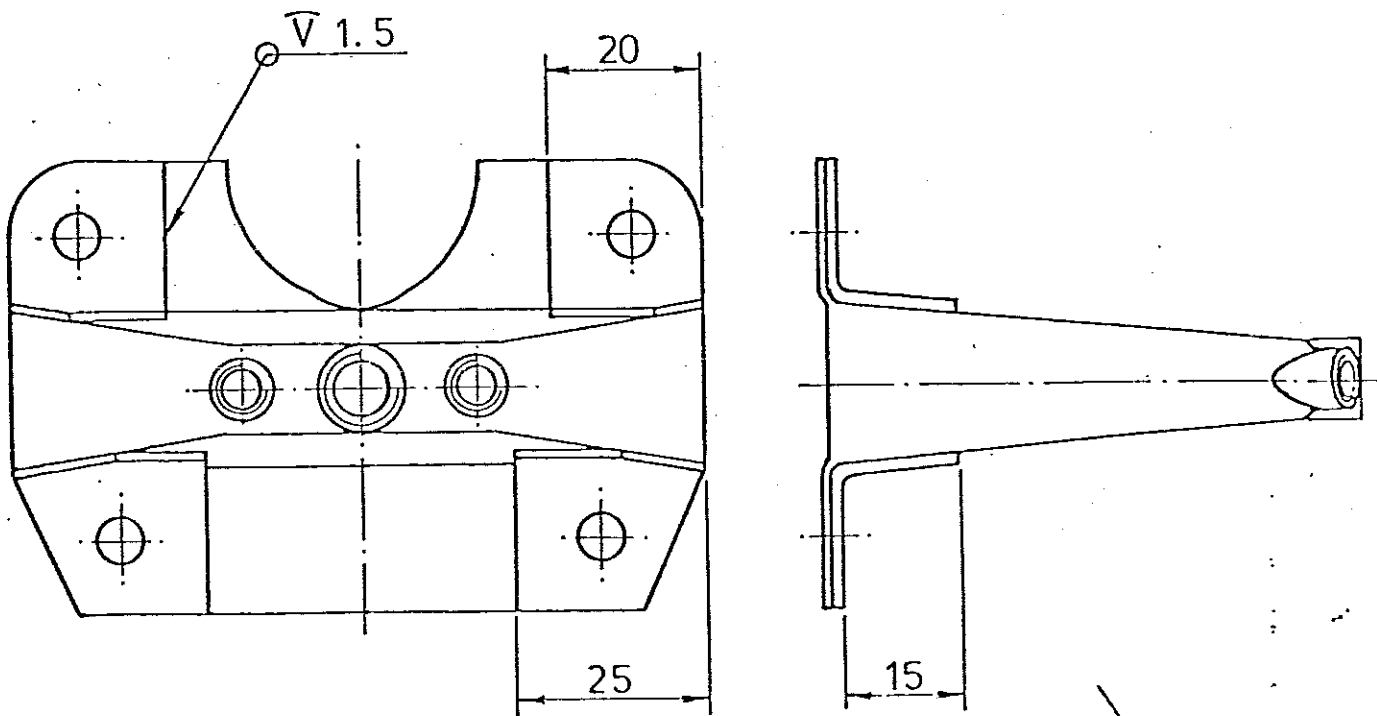
- 2.1. GROB ASTIR - Extention of Service Life Please correct TNS 3/4/83 - TM 315/15/18 extends the life to 6000 hours after inspection at 3000 hours.
- 2.2. B.G.A. COCKPIT PLACARDS A more durable form B.G.A. 267/P is now available on request. The glossy finish does however require the use of a permanent marker of the felt tip variety rather than ordinary pen or ink.
- 2.3. CANOPY POLISHING "Micro-Mesh" is highly recommended, as advertised in S. & G. June/July '83 Page 138 (Recommended by A. Doughty).
- 2.4. MOTOR GLIDER PROPELLORS - leading edge protection Microlight operators and others are achieving some success using polyurethane adhesive tapes, often used on helicopter blades. Meticulous attention is required to the instructions for its application.
- 2.5. MOTOR GLIDER C. OF. A. RENEWALS (3 YEARS) TNS 1/83 included a supplement giving specific instructions on renewal procedures aimed at eliminating delays. Please consult this document. C. of A. renewals may be made 62 days before expiry (Ref. LAMS Section 5), so why wait until the last day?
- 2.6. MOTOR GLIDER AIRWORTHINESS MANAGEMENT To ensure that maintenance checks are carried out as required by LAMS, and that log books, etc are properly maintained, please nominate a club committee member, or a syndicate member to manage your motor glider airworthiness.
INSURANCE COVER MAY BE INVALIDATED if C.A.A. maintenance of airworthiness requirements are not complied with!

R.B. STRATTON
CHIEF TECHNICAL OFFICER

SERVICE BULLETIN December 9, 1982 M20 - 26


MATERIALS CrMo Steel sheet LN1.7214.4
SAE 4130 or equivalent.
S = 1,5 20 x 35 mm 4 pcs.

WEIGHT AND BALANCE No effect.



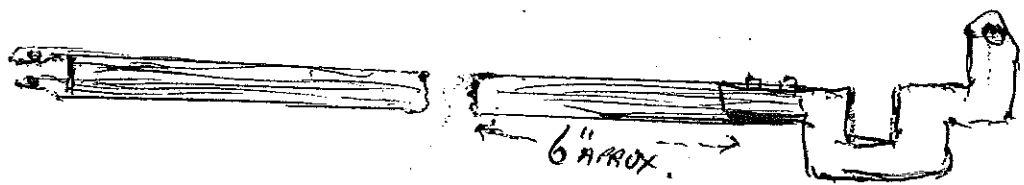
APPROVED BY THE NATIONAL BOARD OF AVIATION IN FINLAND

11.3.1983

Jean-Pierre Dorelli

 Jussi Porttila
 Ilmailuhallitus
 National Board of Aviation

DAMAGE TO ELEVATOR
PUSH ROD DRIVE K6

TWS/5/6/86



COULD APPLY TO K6CR AS WELL RB

(ESSEX + SUFFOLK A.C.)

1. FINDINGS

After the event the g.r.p. moulding which provides the flap torque shaft bearing was found to be almost completely detached from the inside of the fuselage. The resulting flexibility provided enormous flap backlash. On dismantling the mechanism the double row self aligning bearing at the end of the L.H. torque tube was found to be disrupted as shown in sketch.

2. SUGGESTED CAUSE

The L.H. flap drive bearing has received a substantial overload in the inwards direction to cause the outer ring to spring over the ball array. This load can only be reacted by the g.r.p. moulding carrying the centre bearing in a direction which will "unpeel" it from the fuselage wall. It is suggested that the L.H. wing was entered to the fuselage with the flap in a different position to that of the cockpit lever. The flap drive spigot then abutted the slotted end of the torque tube instead of entering the slot. The resulting end load disrupted the bearing and dismounted the g.r.p. bearing housing.

3. CONCLUSION

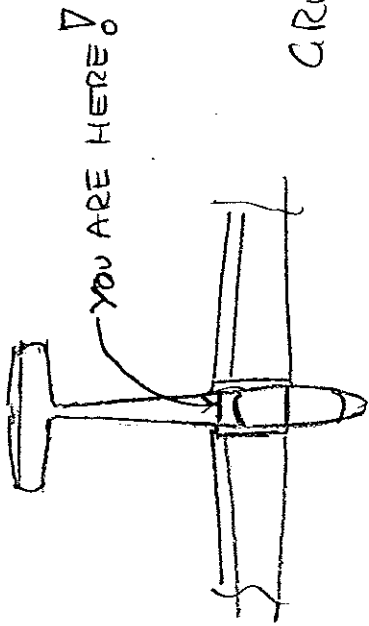
In view of the detail design of the mechanism it is surprising that this has not occurred on an aircraft previously. Other Kestrels have been seen to have the g.r.p. mounting partially peeled from the fuselage sidewall, indicating that they have been loaded during rigging, but their level of attachment has still been satisfactory. A fairly major re-design of the mechanism would be required to overcome this mode of failure. In view of the absence of other reported incidents, and the major but not catastrophic nature of the flutter, it is concluded that a design change is unnecessary.

4. RECOMMENDATION

1. That owners be alerted to the risk of damage during rigging.
2. That inspectors be made aware of the possibility that such damage could exist.

.....*CJ Batt*.....
C. J. BATTY
1/A/098

21st July 1983



FUSELAGE SIDE WALL

G.R.P. BEARING HOUSING

G.R.P. BEARING HOUSING DETACHED FROM FUSELAGE SIDE WALL.

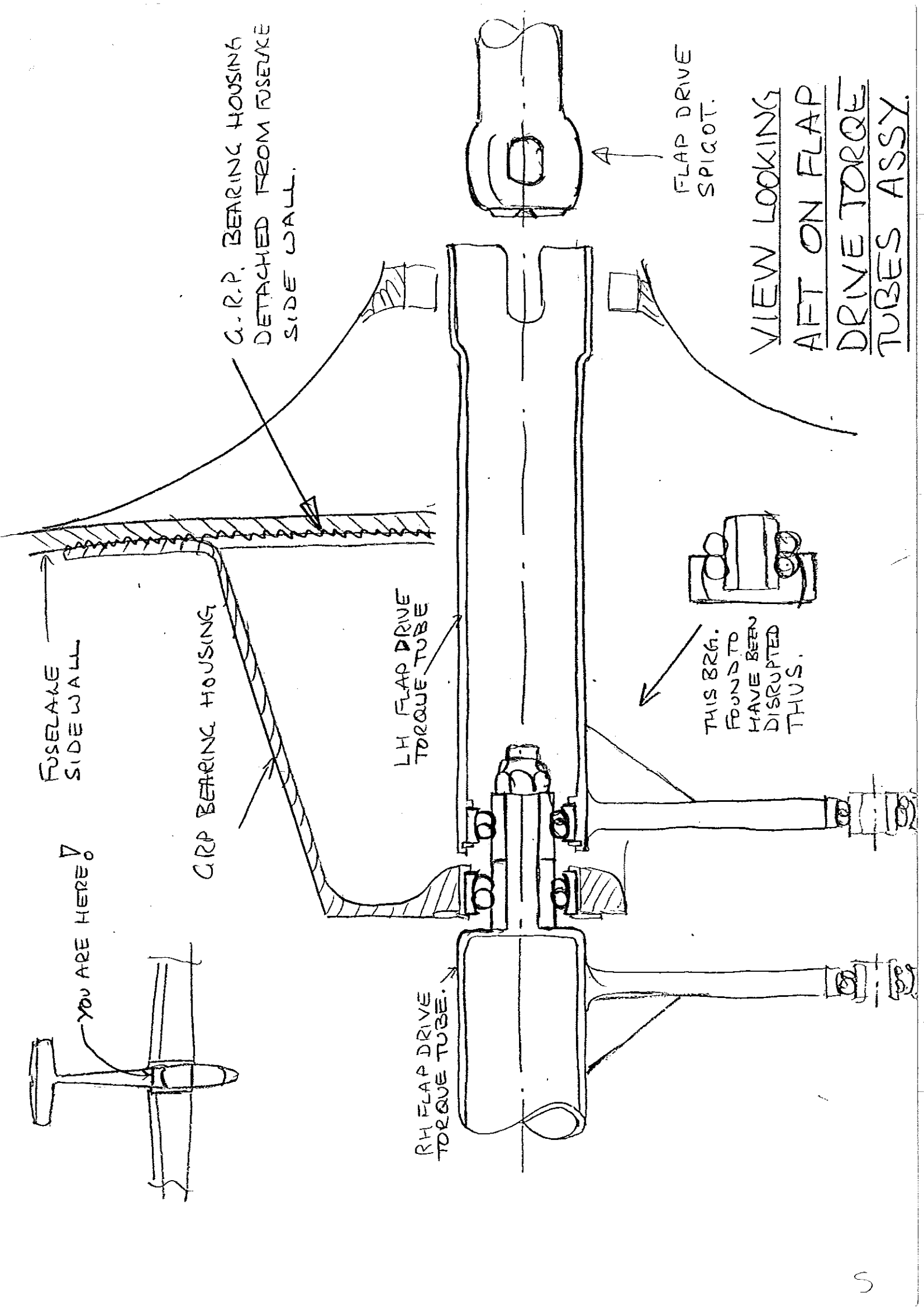
LH FLAP DRIVE TORQUE TUBE

RH FLAP DRIVE TORQUE TUBE

FLAP DRIVE SPIGOT.

THIS BRG. FOUND TO HAVE BEEN DISRUPTED THUS.

VIEW LOOKING AFT ON FLAP DRIVE TORQUE TUBES ASSY.





SERVICE BULLETIN NO. E 4 A

15.08.1983

The German Issue of this S. B. is
LBA approved

This S. B. replaces S. B. No. E 4 dated July 15, 1983
which now is considered inactive.

- Product affected: HOFFMANN variable pitch propeller
HO-V 62 R/L 160 T when installed with
Limbach engine series L 2000.
- Aircraft affected: All powered gliders which are equipped with
propeller/engine combination mentioned above.
- Compliance: See compliance and required action below.
-

BLADE ROOT RETENTION

Discussion:

A metal ferrule is attached to the blade body using lag screws. In flight, when using RPMs between 2950 and about 3250 stresses may arise in the lag screws exceeding the fatigue limit. Three incidents were revealed in which one each of five each lag screws per blade failed. Precautionary actions as listed below are necessary until a suitable solution has been developed.

Compliance and required actions:

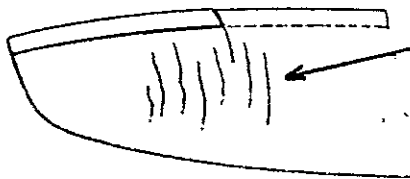
- 1) Immediately
 - a) avoid RPM above 2900 in continuous operation.
Cruising with RPM above 2900 is not permitted.
After take-off reduce RPM to 2900 as soon as safety of flight allows.
 - b) Acrobatic manoeuvres using engine power are not permissible.
Acrobatic manoeuvres with engine shut down are permissible.

- 2) Within the next 10 service hours (engine running time)
 - a) check RPM indicator.
Apply correction marking.
Example: "Reading 2830 is true 2900".
Apply a decal close to the RPM indicator reading:
"Avoid continuous operation above 2900 RPM".
 - b) Inspect propeller using the advises of owner's manual E 0107.72. To do this, the spinner dome must be removed. The inspection has to be carried out by a qualified person.



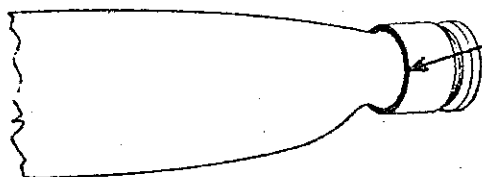
page -2- S. B. E 4 A

- If cracks in the lacquer are revealed with the directions across to the blade axis or if the metal leading edge is cracked, remove the propeller within the next 20 hours of service for special inspection in the factory.



such cracks may also appear in inner blade sections.

- Inspect carefully all around the blade root the area between blade body and metal ferrule. Blades of newer construction are sealed in this area with Silicone rubber material. With such blades no cracks can be tolerated in the Silicone material or its connection to the metal ferrule (contrary to description in the manual). If a crack is revealed in this area, the prop has to be removed from service for special inspection in the factory.



inspect carefully this circumference.

- 3) Within the next 20 service hours (engine running time) propellers with a static RPM of 2900 and above and which have been in service for more than 100 hours in this condition and propellers with more than 10 hours of aerobatic flight with engine power should be removed for special inspection in the factory.
- 4) Within the next 50 service hours (engine running time) propellers which have been used mainly for pilot training should be removed for special inspection in the factory.
- 5) Before accumulating 450 service hours (engine running time) since new propeller overhaul is required.
Propellers which have already accumulated 450 hours time since new must be overhauled within the next 20 service hours.
- 6) Yearly check RPM indicator one time per year.

Procedure:

During the special inspection and at overhaul the lag screws will be replaced by an improved version.

Exp.-
address:
telef. :

Return to:

HOFFMANN PROPELLER ROSENHEIM



Performance of Service Bulletin No. E 4 A

These questions shall help you to determine whether your propeller is affected and what you have to do. We recommend to give this sheet to the inspector who takes care for this one time inspection.

If one of these questions will be answered with yes, then please contact us in order that we can arrange a date for the performance. This sheet has to be in our hands when working on the prop!

The following mentioned points are in connection with our Service Bulletin E 4 A.

2) a) Has RPM indicator be checked? This is absolutely necessary !

Correction marking applied as well
as decal "Avoid ...above 2900 RPM"

.....
date name

.....
signature of inspector

b) Inspector of propeller blades

- cracks in the lacquer across to blade axis

yes: prop within 20 hrs into the factory

no : not affected

- cracks around blade root - metal ferrule

yes: prop to be removed from service

no : not affected

3) Prop has 2900 static RPM (RPM indicator checked) or higher.
Please indicate. It has RPM

yes: see below

no : not affected

- prop has been in service less than 100 hrs with 2900 RPM:
has to be shipped to the factory before reaching 100 hrs.

- Prop has been in service more than 100 hrs at 2900 RPM:
has to be shipped within next 20 hrs into the factory.

- Prop has been used more than 10 hours in acrobatic flight

yes: within next 20 hours it has to be shipped to factory

no : not affected

4) Prop has been used mainly for pilot training

yes: ship into the factory within next 50 hours

no : not affected

5) All propellers which are not affected by point 2) to 4):
overhaul time will be at 450 hours since new. We recommend to
note this in your internal records.

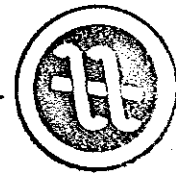
date:

Signature:

PROPELLERWERK HOFFMANN ROSENHEIM

D-8300 Rosenheim 2 Postfach 265 · Kuepferlingstraße 9 · Tel: (08031) 22010/20 Telex: 05-25811 HOCO D

XXXXX
32011



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Modified propellers are marked SB 4 on the outer collar of the ferrule on the chamber side of the blade. This marking is visible after removing the spinner dome. Such propellers have a TBO of 600 hours according to the conditions described in Service Bulletin No. E 1 E dated July 5, 1983 or a later approved issue.

Propellers affected by this S. B. which were shipped from the factory in condition new or repaired after July 15, 1983 are already equipped with improved lag screws as requested by this Service Bulletin. However, even for those propellers the compliance and required actions as listed under 1) a), 1) b), 2) a) and 6) have to be continued.

As soon as new results are available, this Service Bulletin will be revised.

HOFFMANN PROPELLER ROSENHEIM

LBA NR. I-EC 2, Nr. I-C 14

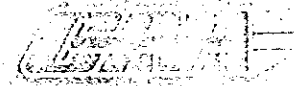
tr.
OEM
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SB

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Safety Data and Analysis Unit
 Brabazon House
 Redhill Surrey RH1 1SQ
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BCA TNS/10/83

7/83

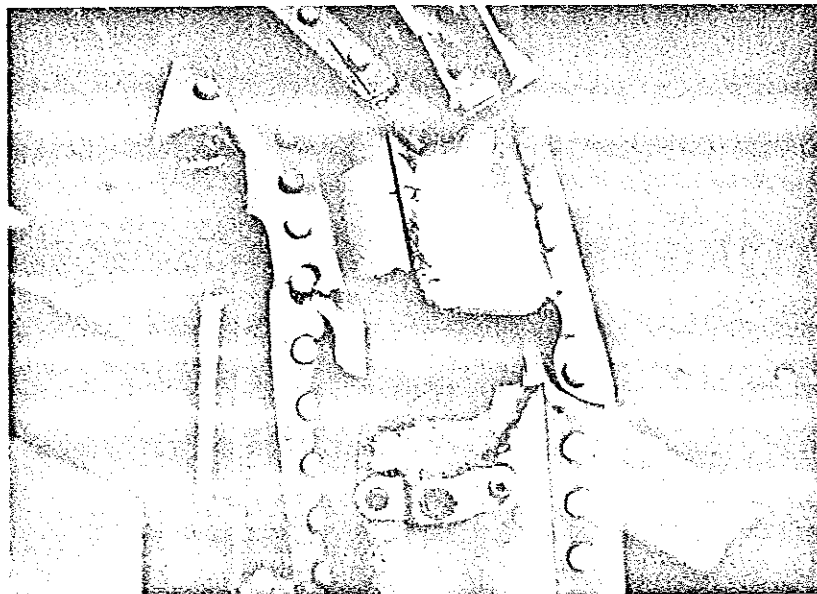
22 July 1983

1. NOSEWHEEL STRUT BROKE DUE TO CORROSION

E

Aircraft : Socata Rallye 894A
 Date : May 1983

The aircraft was being taxied for an ADF aerial loop swing as part of the Annual Check. Without warning, the nose gear strut (Part No. 8042-0-108) fractured and folded sideways to the left and the propeller struck the ground stopping the engine. It appeared that the strut had been cracked for some considerable time through 75% of the cross section. The aircraft had flown 1394 hours since manufacture in 1969.



Forward



Left-hand
 view on
 strut

CAA Comment:

This is the fourth case in seven years of this type of failure (see GASILS 1/77 p.3 and 5/77 p.1). The only real safeguard is to carry out periodic external visual inspections for signs of cracking or of internal corrosion. Socata Rallye Service (Letter) No 48 dated November 1966 recommends inspection of the nose landing gear before 5000 landings (or 500 hours for an aircraft used for glider towing where landings are not counted) and thereafter every 200 landings (or 25 hours for towing aircraft). Socata Service (Letter) No.65 introduces reinforcement for the nose gear on production aircraft. The CAA is considering making Socata Service No.48 mandatory.

The records used to compile this document include information reported to the CAA, information obtained from CAA investigations and deductions by CAA staff based on the available information. The authenticity of the contents or the absence of errors and omissions cannot be guaranteed.

Photo-copying this leaflet is permitted and short extracts can be published provided that the source is duly acknowledged.

In order to identify the broad subject matter each item is classified as follows:

Operational items mostly of interest to pilots

Airworthiness items mainly for engineers

Items which involve both operational and airworthiness interests

P
 E
 P/E

Civil Aviation Authority

AERONAUTICAL INFORMATION CIRCULAR UNITED KINGDOM

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Ext 257 (Distribution)

51/1983
(Pink 44)
7 September

File ref: 9/60

Airworthiness Division

ALTIMETERS IN GENERAL AVIATION AIRCRAFT

- 1 An incident occurred in flight in which the altimeter pressure setting scale became detached from the altimeter pointer when the pilot was attempting to set up the appropriate QNH. This resulted in a large indicated altimeter error.
- 2 Subsequent investigation revealed that satisfactory operation of the altimeter depends on the barometric adjustment control knob being attached to the spindle so that no fore or aft play exists between the knob and the instrument bezel. If such play exists, forward pressure on the knob may disengage the barometric adjustment scale from the altimeter pointer.
- 3 A number of altimeters of US manufacture are understood to be prone to this particular defect.

Included amongst these are the following:-

Aero Mechanism 8040, 8141, 8142 Series; Kollsman
Alticoder II; Narco AR 800 Series; and Bendix 3252013
Series Dial Pointer Type.

- 4 The Federal Aviation Agency is aware of this defect and is considering remedial action. In the meantime operators are advised to check that the barometric adjustment control knob is secure on the spindle and that the correct distance, as stated in the Manufacturer Overhaul Manual, exists between knob and bezel.
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- 5 It is strongly advised that before flight the following checks are made:-
 - (a) that rotation of the barometric adjustment control knob results in a movement of both the pressure setting scale and the altimeter pointers and that forward pressure on the knob during rotation does not disengage the barometric adjustment scale from the altimeter pointers,
 - (b) that when QNH is set the altimeter reading agrees with the aerodrome elevation or that when QFE is set that the altimeter reads zero.
 - 6 This AIC replaces information previously published in AIC 57/1978 (Lapsed).

This Circular is issued for information, guidance and necessary action.

SERVICE BULLETIN December 9, 1982 M20 - 26

BGA TNS/6/83

SUBJECT Rudder bottom hinge bracket.

EFFECTIVITY PIK-20 B and -D all serial numbers.

COMPLIANCE TIME Procedure 1 before next flight and after that during every annual inspection or until the repair according to procedure 2 has been completed.

Procedure 2 if fractures are found during the procedure 1 inspection.

Procedure 3 commended to be completed as soon as possible.

DESCRIPTION Due to a too small bending radius of the hinge bracket suspension flange, fractures have been found on the corners of the hinge suspension flange. The vibration caused by a hard rubber tail dolly wheel may in some cases assist in the formation of the fracture. It is possible that when the fractures get large enough the bottom hinge could peel off and jam the rudder control.

INSTRUCTIONS Procedure 1

Inspect the corners of the suspension flange of the rudder bottom hinge bracket as follows:

- 1) Loosen the rudder control cables from the brackets.
- 2) Loosen the M8-Nyloc lock nut on the rudder bottom hinge through the hole on the bottom of the rudder. Lift up the rudder so that the hinge taps of the rudder come off from the ball bearing.
- 3) Remove the sealing cloth which is glued with contact glue.
- 4) Inspect the corners of the hinge bracket with at least 5 x enlarging magnifying glass in good lighting. If no fractures are found, fasten the rudder and control cables and mark the inspection executed in the sailplanes log book. If fracture are found, make the repair according to the procedure 2.

SERVICE BULLETIN December 9, 1982 M20 - 26

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Procedure 2

If fractures are found, repair them as follows:

- 1) Measure the distance of the ball bearing center from the spar, note the measuring result, open the lock nut and loosen the ball bearing. Loosen the hinge bracket from the rear spar of the vertical stabilizer, the hinge has been attached with six hexagon screws and epoxy-glue. A sharp downward knock on the head of the hinge will loosen the gluing. Note that the nuts and large washers of the hexagon screws on the other side of the spar have to be removed first through the setting hole on the spar.
- 2) Remove the paint and coating from the area that will be welded by sand blasting (cf. item 3). Coating has to be removed carefully by removing bath. The coating material can be identified as follows:
 - cadmium, yellow colour
 - zinc, clear
- 3) Make and weld the bracings on the suspension flange according to the drawing. NOTE! Weldings can be done only by a person who has an aircraft welding licence. Before assembling the hinge bracket has to be sand blasted, the attaching holes has to be drilled and the whole bracket has to be coated (cadmium or zinc) and painted.
- 4) Attach the hinge bracket with epoxy-glue and attaching screws to the original tightness. Turn the ball bearing to its original position and tighten the lock nut.
- 5) Glue the rudder sealing cloth. Attach the rudder. Fasten the control cables.

Procedure 3

Change the hard rubber tail dolly wheel for a soft air filled tire to reduce the vibration.

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