

B.G.A. TECHNICAL COMMITTEE.

TECHNICAL NEWSHEET.

TNS 11/12/88

- PART 1 "AIRWORTHINESS AGGRO". The 1988 "Red Pages" will be re-issued early in 1989 as "Blue Pages".
- 1.1 DG 100, 101, 200, 202. Separation of the rudder in flight. The attached letter to operators was issued 12/10/88. The attached sketch of the failure (and its repair) is by courtesy of Southdown Aero Services.
- 1.2 Lightning Strike Inspections. The attached report on an LS4, gives good guidelines on the extent of damage, and the areas of inspection required. (Repair by Martyn Wells. Report by R.A.E.)
- 1.3 SF.34. LBA/AD/88-162/2 herewith requires inspection of wing root ribs for cracks. Follow up action by the manufacturer is awaited. (TNS/9/10/88 refers).
- 1.4 Mini Nimbus variants (HS7, mini nimbus B & C). Tech Note 328-8 ref "Reinforced Elevator Drive Bracket", has been extended to the above variants. (TNS 7/87 refers).
- 1.5 KA7 / KA13 (KA7 conversions) cracking of the weld at the airbrake over centrelock. (Sketch by I.D. Smith is self explanatory).
- 1.6 Bocian Assymetric rudder pedal travel between front & rear cockpits. (The attached sketch by Tony Mos, Borders G.C outlines the problem).
- 1.7 BG 135. Cracks in spar web at wing root. (Sketch by W.G. Cook highlights the defect).
- 1.8 Grob G.109's wing root spigots. CAA AD006-10-88 (herewith) has been mailed by CAA to all registered owners. Repetitive inspection at 300hours is required. (BGA note: There is neither an LBA Directive, or Manufacturer's T/Note. For advice contact U.K. Agents).
- 1.9 PZL "Junior". Bulletin BR-004/88, refers to the potential "collision between a screw head and the rudder balancing weight" - presumably restricting the rudder travel?.
- 1.10 Bendix magneto - break down of the distributor cap. (Sketch by Roy Garner attached).
- 1.11 Chipmunk flap cables - may foul on pipework in the port wing root area! chipmunk flap cables may become detached from actuator pulleys in wing roots (port & starboard). (Reported by RNGA, Le-On-Solent).
- 1.13 G.Q Parachutes. The attached list may require some parachutes to be "grounded".
- 1.14 Gipsy Engines - flame trap Failure on Carb Inlet This impossible to inspect item may endanger your health. (GASIL 10/88 herewith). Reports have been raised over many years.
- 1.15 Trim TAB Cable Detached - uncontrolled Pitch-Up. Ref G.A.S.I.L extract on Rand KR2. This problem could occur on a whole range of gliders, motor-gliders, and towing aeroplanes too!.

- 1.16 Plastic Containers and Fuel Ignition by static electricity continue to occur. GASIL refers.
- 1.17 Flight research Altimeters, failure of the drive to the barometric sub scale. CAA AD 012-09-88 herewith, requires withdrawal of Part No 1FR 45-20m. (There is some evidence that such units have been modified, other than by the original manufacturer!).
- 1.18 Radio Installations in Civil Registered Aeroplanes, by persons other than Licenced Radio Engineers. Extract from GASIL refers. (BGA have been negotiating with CAA on this subject since 1980!.)
- 1.19 Contaminated Fuel. Whether you operate on AVGAS or MOGAS, contamination can stop you dead!. Extracts from GASIL's and A.A.I.B Bulletins are more than self explanatory!. Fuel pump installations should include filters.
- 1.20 Cylinder Hold Down Bolts. A.A.I.B Bulletin 10/88 illustrates the catastrophic failure resulting from "loose" bolts of three studs. BGA TNS/10/88 refers. Could apply to almost any type of engine!. (TNS 10/88 refers).
- 1.23 Controls NOT Properly Connected. Two cases have been reported in BGA Accident/Incident reports:-
a) Astir ailerons at Usk.
b) Kestrel at Southdown.
- 1.22 G.109B - AATB. Report on G-BLGY makes good reading.

PART 2 GENERAL MATTERS

- 2.1 Additional Supplies of Avgas as 100LL can now be obtained from Carless Petroleum Limited. (Ring Chris Ferris 0245 266977).
- 2.2 Tug Maintenance Standards CAA area offices have been "sampling" tugs on a random basis and reporting back to CAA (SRG) Gatwick. Tugs at S.G.U and Borders G.C. have been checked. Tug operators are reminded that the privileges of competent PPL's to sign off certain checks in the L.A.M.S, puts upon them the responsibility for setting the standard of their own maintenance. Regulation 16 of the Air Navigation Order (General regulations) applies.
- 2.3 BGA Registration Numbers on Gliders. Vendors, and BGA Inspectors should check that BGA Registration Numbers are permanently displayed on the back end of all gliders.
- 2.4 Glider Weak Link Ratings (Derived from Flight Manuals or Type Certificate Data Sheet). The list herewith is repeated from TNS 5/6/86 except that Twin Astirs are uprated 600 daN to 754 daN by Tech Memo 315-19 (TNS 3/4/88) = 1800 lbs!.

FINAL REMINDER BGA INSPECTOR RENEWALS

Please send £15.00 to BGA office a.s.a.p if you are to be "listed", insured, and to receive TNS etc in 1989.

HAPPY XMAS and an AIRWORTHY NEW YEAR!.

R.B. Stratton.
Chief Technical Officer.
24th November 1988.

DAMAGE RESULTING TO A LS4 GLIDER FROM A LIGHTNING STRIKE

INTRODUCTION

On Sunday 31 July, a LS4 glider sustained a lightning strike whilst in cloud at approx 7,000 ft. It is believed lightning storms were present in the area and some precipitation had occurred. The pilot received an electric shock from the control column but managed to land the aircraft. Initial inspection showed severe delamination of the port wing tip and aileron and the delamination of the T/E of the elevator. The aircraft was inspected by myself and Mr Odam (RAE/MM5) on 5 Sept and the following damage was found.

DESCRIPTION OF DAMAGE

Port Wing

Wing tip end and T/E delaminated. Discoloration and slight crazing of paint at wing tip. At the T/E spar of the wing where the aileron is located several small holes (several mm diam) with burn marks in the glass fibre were found. On the aileron itself there was severe delamination of the T/E and holes in several positions with burn marks. Over the upper surface around one of the holes the fibre glass was badly damaged; a region near the trailing edge was also badly damaged. The lead weight inserted in the aileron showed several pitting marks. The bush joining the control rod to a spigot in the aileron showed severe arc erosion and the rear end of the spigot embedded in the fibre glass was blackened. At the position of the hinges there was considerable discoloration of paint work.

Starboard Wing

No delaminations. On the wing tip were many holes in the paint work of several mm lengths. The holes were aligned with the ply direction and gave the impression that debris had splattered up from inside the wing, breaking fibres and bursting out the top glass panel surface. There was no sign of charring or any electrical interaction at all in this area and the cause of this damage is not understood. No holes were found in the aileron or T/E spars, however 4 outboard hinges showed signs of pitting and discoloration of adjacent paint work. The lead weight showed pitting at both ends. Again the bush joining the aileron spigot to the control rod showed severe arc erosion.

Elevator

The T/E was delaminated. There was a very small hole in the (upper port) side which suggested a lightning attachment had occurred in that area and two small holes with discoloration on the forward edge. The glass at metal spigots in the elevator where they were embedded in the glass fibre showed signs of charring.

Possible Scenario

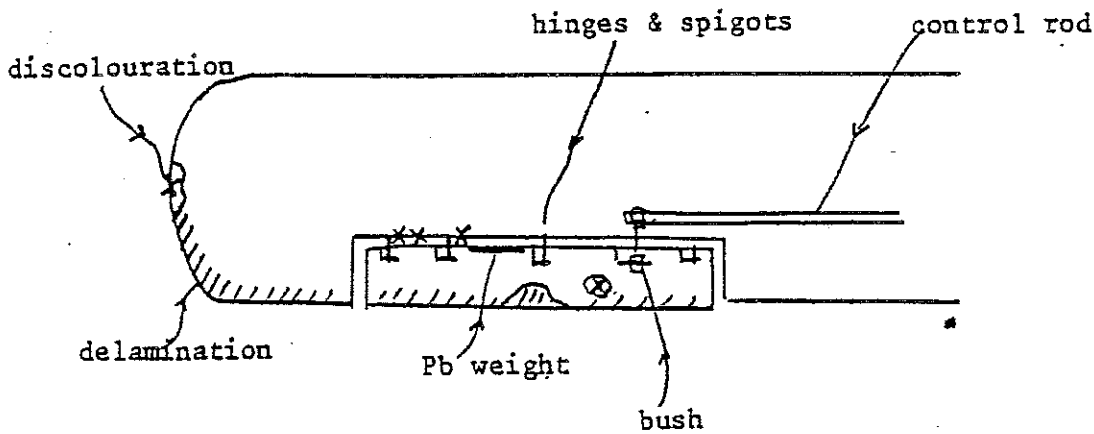
It would appear that the LS4 sustained a wing tip to wing tip lightning strike. The holes in the aileron and T/E spar of the wing for the port assembly suggest that arcs were formed inside the wing and aileron; the explosive forces resulting from these arcs were sufficient to

cause delamination of the wing and aileron tip respectively. Inboard of the control rod bush, it would appear that the current was transferred via the control rods. No damage or evidence of pitting was observed at the fuselage ends of control rods however. The control rods have electrical continuity to the control column and foot pedals and to the elevator assembly. This could cause the pilot to receive a shock and for an arc exit channel to occur from the elevator. Again it would appear that an arc formed inside the elevator and caused extensive delamination. It is known that even for moderate lightning strikes of 20kA, overpressures of several atmospheres occur near the arc. Without opening up the left wing it is impossible to say why an arc could penetrate inside it; one possibility would be if the inner surface was wet or moist.

C J Hardwick

1124/jmb

Port Wing assembly



X approx positions of holes



damage areas

Civil Aviation Authority
Safety Regulation Group
Aviation House
South Area
Gatwick Airport
Gatwick
West Sussex RH6 0YR
Tel: Switchboard 0293 567171
Direct Dial 0293 57 3149
Telex: 878753 Fax: 0293 573999



Maintenance Standards Department

Royal Air Force Gliding and Soaring Ass
Rafgsa Centre
Bicester Airfield
Bicester
Oxfordshire, OX6 9AA

9/97/CtAw/98

19 October 1988

CAA ADDITIONAL AIRWORTHINESS DIRECTIVE 006-10-88
GROB G109 AND G109B SERIES MOTOR GLIDERS
SPAR STUB END FITTINGS - CRACKS AT OR NEAR THE TOE OF
THE WELD ON THE TOP AND BOTTOM SURFACE OF THE SPIGOT

APPLICABILITY

Applicable to all Grob G109 and G109B Series motor gliders.

COMPLIANCE

Compliance is required not later than 50 flying hours from the receipt of this Directive.

REQUIREMENT

- (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.
- (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, i.e. 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.

- (v) Where the spigots 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.

Queries regarding this Directive should be referred to the General Aviation Section at the above address.



R J TEW

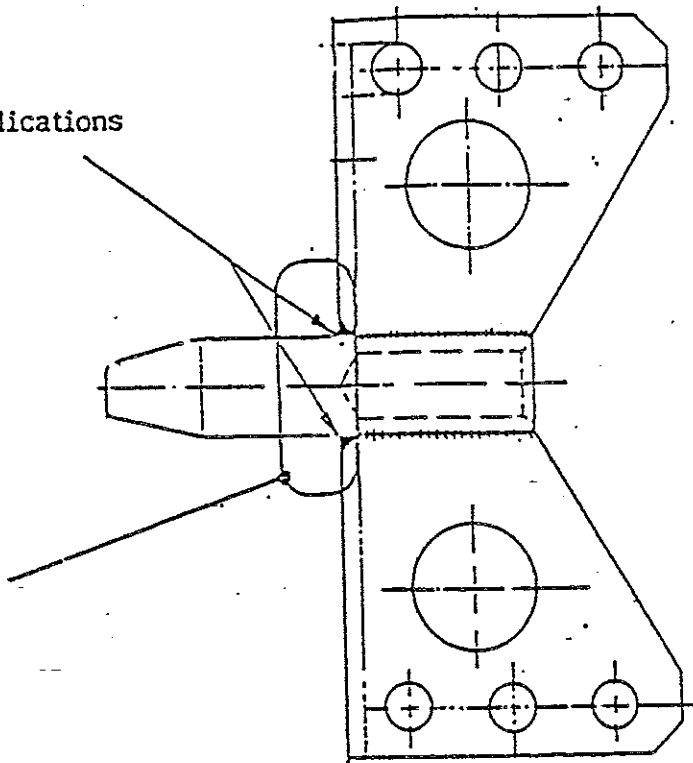
Maintenance Approvals Section

FIGURE A

(Not to Scale)

Check for crack indications

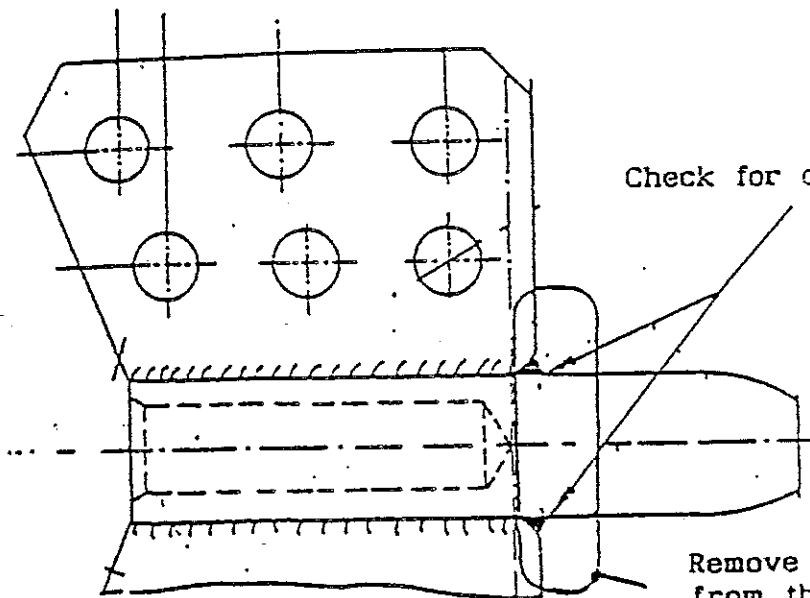
Remove grp
from this
area



G109 SPIGOT FITTING

Check for crack indications

Remove grp
from this area



G109B SPIGOT FITTING

Civil Aviation Authority
Safety Regulation Group
Aviation House
South Area
Gatwick Airport
Gatwick
West Sussex RH6 0YR
Tel: Switchboard 0293 567171
Direct Dial 0293 57 3149
Telex: 878753 Fax: 0293 573999



Maintenance Standards Department

9/97/CtAw/316

CSE Aviation Ltd
Oxford Airport
Kidlington
Oxford OX5 1RA

22 September 1988

CAA EMERGENCY AIRWORTHINESS DIRECTIVE 012-09-88
INSTRUMENT AND FLIGHT RESEARCH INC ALTIMETERS PART NO IFR 45-20M
REMOVAL FROM SERVICE

APPLICABILITY

Applicable to all Instrument and Flight Research Inc altimeters Part No IFR 45-20M.

BACKGROUND

Two altimeters Part No IFR 45-20M have been removed from aircraft because of de-synchronisation of the barometric adjusting knob and altitude pointers. When examined it was determined that the internal design was such that they could not function in a correct and reliable manner.

COMPLIANCE

Compliance is required before further flight.

REQUIREMENT

Remove from service altimeters of this manufacture and part no, whether installed in an aircraft or held as spares, until further notice from the CAA.

Queries regarding this Directive should be referred to the Foreign Aircraft Section at the above address.


R J TEW

Maintenance Approvals Section

BRA NOTE. The original Manufacturer's Product may have been modified elsewhere leading to this defect.

No: 11/88

Ref: EW/C1080

Category: 1c

**Aircraft Type
and Registration:**

Grob 109 B Motor Glider, G-BLGY

No & Type of Engines: 1 Grob 2500 E1 piston engine

Year of Manufacture: 1984

Date and Time (UTC): 16 August 1988 at 1429 hrs

Location: 800 m ENE of Wycombe Air Park, Booker, Bucks

Type of Flight: Private (pleasure)

Persons on Board: Crew - 1 Passengers - 1

Injuries: Crew - 1 Passengers - 1

Nature of Damage: Fuselage forward of cockpit totally destroyed, substantial damage to the wings and to the floor under the cockpit. The cockpit shell was undamaged.

Commander's Licence: Private Pilot's Licence

Commander's Age: 48 years

**Commander's Total
Flying Experience:** 1500 hours (of which 2.5 were on type)

Information Source: AAIB Field Investigation

The aircraft had taken off from Kidlington, at 1310 hrs, with about 16 gallons of fuel on board, and had landed at Wycombe Air Park (Booker) at about 1335 hrs. The pilot has since stated that, having shut down the aircraft, he carried out transit checks to prepare it for the return journey.

At Wycombe Air Park, the pilot loaded 60 lb of personal freight and, together with the passenger, boarded the aircraft. Assuming that his original estimate of a three quarters full fuel tank at Kidlington was correct, 15 gallons (105 lb) of fuel remained. This provided a take-off weight of 1904 lb and a Centre of Gravity at 13.42 inches aft of datum. The Flight Manual states that the MTWA is 1874 lb and the Centre of Gravity range is 11.1 to 16.8 inches aft of datum. The 30 lb apparent overweight situation could however be due to an over-estimate of the fuel contents.

At 1428 hrs, when the aircraft took off, the weather at Booker was reported as: wind calm, visibility 8 km in haze and a temperature of 22°C. The aircraft took off from the tarmac runway 07 and was seen

by several witnesses to make a rather longer than normal take-off roll, followed by an initial climb which was noticeably slow and shallow and conducted with an unusually high nose-up attitude. The passenger, a professional pilot, has stated that he saw the speed decay to around 40 kt ($V_s = 38-40.5$ kt, according to engine power and attitude), but believed that it was regained by lowering the nose of the aircraft. During this climb, at 1-200 feet, the aircraft was seen to rock its wings and then, almost immediately, roll to the right and dive to the ground in a right spiral. There was no fire and the upper torso restraints of both occupants withstood the forces of the impact.

The witnesses also commented that the engine note had seemed to indicate a lower rpm than they were accustomed to hearing when a Grob took off and, in confirmation, the passenger has since stated that the engine tachometer had indicated around 2100 rpm during the engine run-up and also during both take-offs. The Flight Manual states that this figure should be 2700 ± 100 rpm. It further states that "If only 2000 ± 100 is achieved during the run-up, the propeller is in the 'cruise' (coarse) position and must be set to 'climb'....". During flight, changing from coarse to fine pitch is not achieved, with this type of propeller, by merely moving a pitch lever forward: the engine rpm must be reduced to 1400 and the speed to 59 kt. This is clearly not a desirable action whilst attempting to maintain a normal initial climb-out profile nor, indeed, possible whilst attempting to gain height in order to clear obstacles. It is therefore apparent that even if the pilot had at that late stage realised that the pitch was set to coarse, he was not necessarily in a position to change to fine pitch.

Inspection of the aircraft at the accident site showed that the airbrakes had extended slightly; however, a more detailed examination at Farnborough revealed that the airbrake control torque tube could have been rotated into this position by crash forces. The propeller pitch change mechanism had been destroyed by the impact and gave no clear indication of pitch at the time of the accident.

BGA NOTE. OVERLOADED IN THE WRONG PROP. PITCH!!

LYCOMING CYLINDERS

No: 10/88

Ref: EW/G88/06/08

Category: 1c

Aircraft Type and Registration: Piper PA-28R-200 Arrow, G-BMNL

No & Type of Engines: 1 Lycoming IO-360-C1C piston engine

Year of Manufacture: 1975

Date and Time (UTC): 17 June 1988 at 1230 hrs

Location: Alderney Airport, Channel Islands

Type of Flight: Private (pleasure)

Persons on Board: Crew - 1 Passengers - 3

Injuries: Crew - None Passengers - None

Nature of Damage: Severe damage to engine

Commander's Licence: Private Pilot's Licence

Commander's Age: 43 years

Commander's Total Flying Experience: 670 hours (of which 8 were on type)

Information Source: Aircraft Accident Report Form submitted by the pilot and AAIB investigation of the engine.

The aircraft was en-route from Bournemouth to Dinard, cruising at 2000 feet amsl, when a slight change of engine noise was noted. The pilot checked the engine instruments, changed fuel tanks and selected electric fuel pump ON; he then noted a further change in engine noise. He declared a Mayday and elected to divert to Alderney, approximately 7 nm away.

The engine was losing power, with worsening vibration and, about 4 nm from Alderney, the aircraft would no longer maintain altitude. The pilot only had sufficient altitude to initiate a curving approach to runway 08 and, at about 700 feet and ½ nm out, selected undercarriage and flaps down. Almost immediately the engine emitted a loud bang, with complete power loss. The pilot retracted the flaps to improve penetration and was just able to clear the perimeter fence, landing safely about 50 yards short of the runway.

Subsequent inspection showed that the No 3 (right aft) cylinder had completely detached from the crankcase and the corresponding connecting-rod (figure 1) had been wrenched from the crankshaft, with considerable damage to the piston.

During AAIB investigation of the engine it became apparent that the connecting-rod failure had occurred after the cylinder had become detached. Of the 8 bolts (figure 2) which are used to secure the cylinder

to the crankcase, at least 5 showed positive evidence of fatigue failure. The apparent sequence of failure was that the bolts had become unevenly loaded, leading to progressive fatigue failure through a portion of their cross-section with final failure in overload as the cylinder detached.

The engine had accumulated 906 hours since major overhaul. All 4 cylinders had, however, been replaced 96 hours before the engine failure.

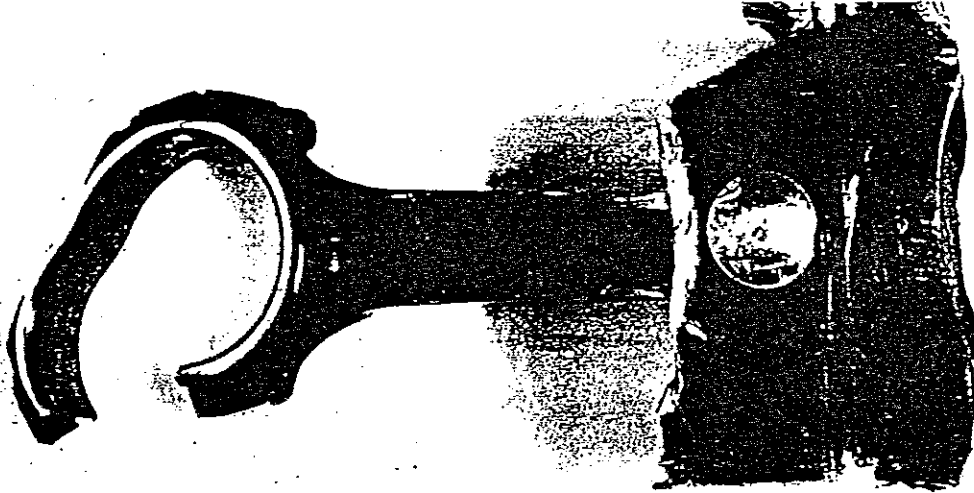


Figure 1: No 3 piston and connecting-rod, G-BMNL

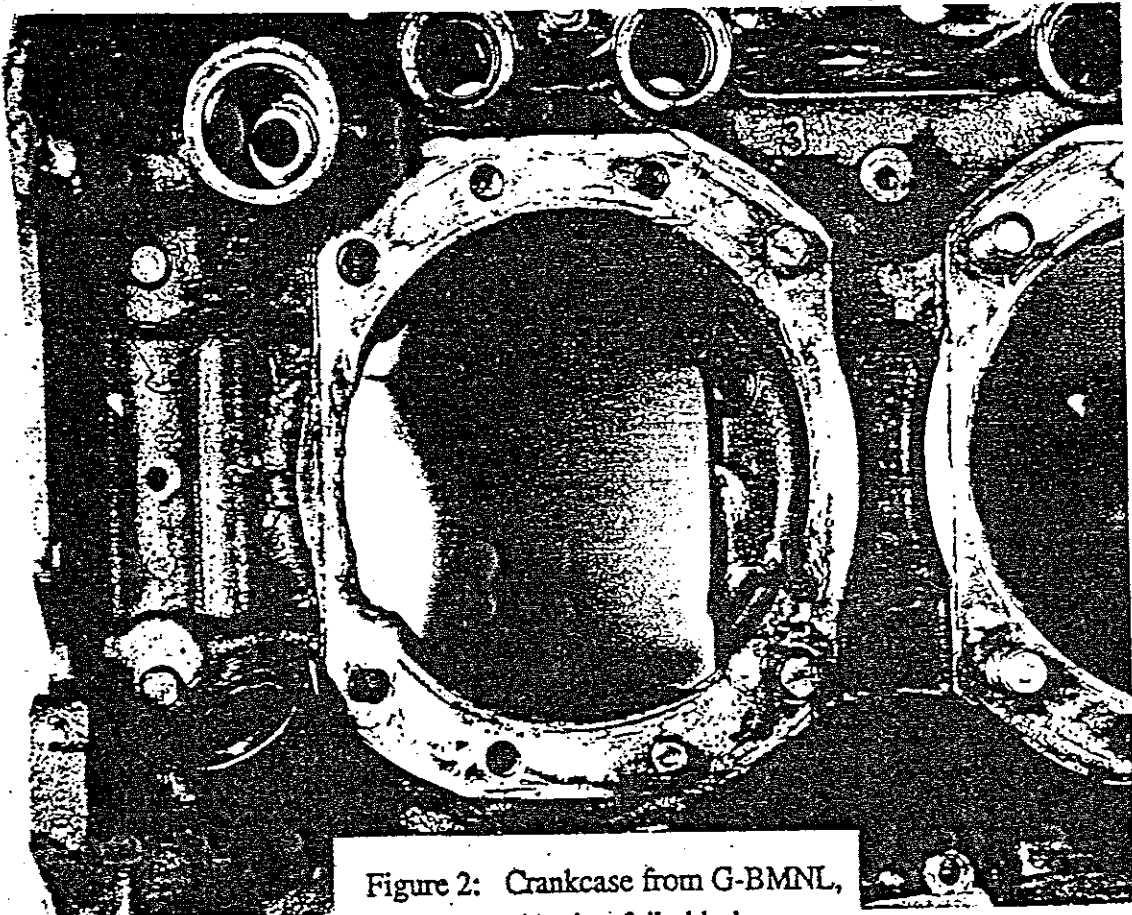


Figure 2: Crankcase from G-BMNL, showing failed bolts



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

Administrator and Secretary: Barry Rolfe

Kimberley House, Vaughan Way,
Leicester LE1 4SE
Telephone 0533 531051

British Gliding Association

12th October, 1988.

TO: ALL OWNERS

DG 100,101,200,202

Pending further investigation into the separation of the rudder from a DG 200, followed by a successful landing, owners of DG 100,101,200 & 202's are advised to inspect the lower rudder hinge attachments before further flight.

R.B. STRATTON
CHIEF TECHNICAL OFFICER

Repair Scheme →

Ref: TNS/11/12/88

Patron
President
Vice Presidents

HRH The Duke of Edinburgh KG
Basil Meads MBE
Air Chief Marshal Sir Theodore McEvoy KCB CBE
Sir Peter Scott CBE DSC LLD
KG Wilkinson BSc FCGI DIC CEng FRAeS
Christopher R Simpson MA LL.M.
Roger O Barrett

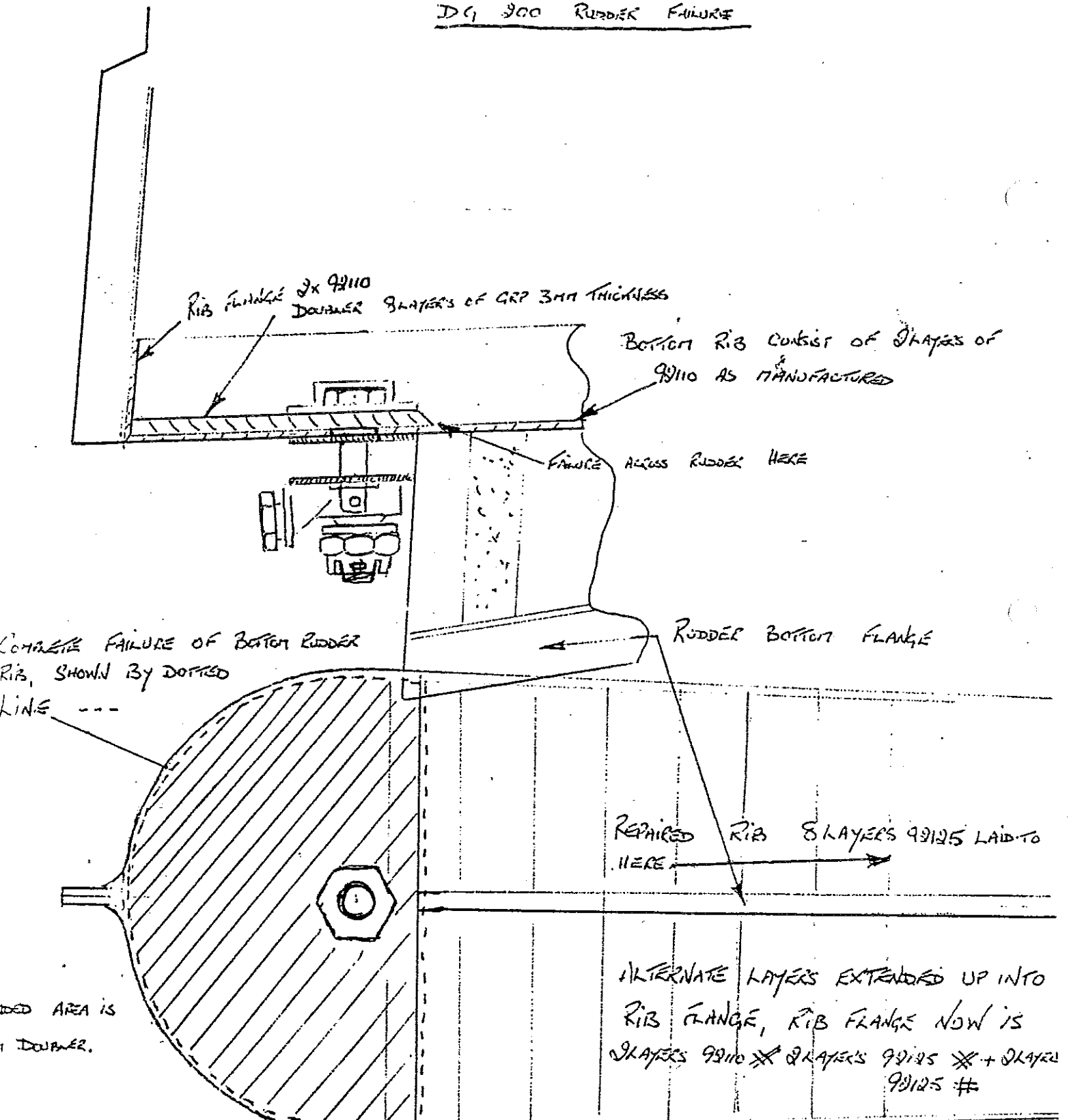
Rudder Separation. DG 200.

TNS 12/88.

SOUTHDOWN AERO SERVICES Ltd
 Regd. No. 720934 (ENGLAND) VAT 188 001667

Lasham Airfield Alton Hants GU34 5SR Telephone Herriard (025683) 359

DG 200 RUDDER FAILURE



M. K. Frupp 11/10/87 ME

G. P. Parachutes.
TNS/12/88

GROUNDING NOTICE

For the attention of owners of reserve and emergency parachutes manufactured by GQ Parachutes Ltd of the following types:

| | | |
|-------------|----------------------------------|--------------------|
| MRI GQ 1118 | Pack 236 | Hand Deploy Drogue |
| MRI GQ 1186 | GQ Safe System | Hand Deploy Drogue |
| MRI GQ 1277 | 350 Parachute Assembly | |
| MRI GQ 1284 | 850 Parachute Assembly | |
| MRI GQ 1304 | 350 Aerobatic Parachute Assembly | |
| MRI GQ 1308 | 4.8 m SAC Sports | |
| MRI GQ 1315 | 850 Military Parachute Assembly | |
| MRI GQ 1325 | 350 Military Parachute Assembly | |
| MRI GQ 1330 | 850 Military Parachute Assembly | |
| MRI GQ 1339 | 5.5 m Super SAC Sports | |
| MRI GQ 1373 | 950 Military Parachute Assembly | |
| MRI GQ 1374 | 450 Military Parachute Assembly | |

It is possible that some of the mesh used in the above reserve parachutes may not have been in accordance with specifications. In order to ascertain whether or not your reserve or emergency parachute was manufactured using this mesh, you should ensure that it is immediately tested in accordance with the attached procedure and certified as fit for use by a certified rigger and so recorded on the parachute log card.

The above reserve or emergency parachutes ARE GROUNDED AND SHOULD NOT BE USED UNTIL EITHER THEY HAVE BEEN TESTED AND CLEARED, OR THIS NOTICE HAS BEEN WITHDRAWN.

Owners of relevant reserve and emergency parachutes are advised to telephone GQ Parachutes Ltd on the following number: 0656 840300

TESTING FOR ACID CONTAMINATION - TEXTILES

Place one drop of pH indicator Bromocresol Green Solution in the centre of each area of netting.

If the solution turns yellow, acid is present.

If the solution remains green/blue acid is not present.

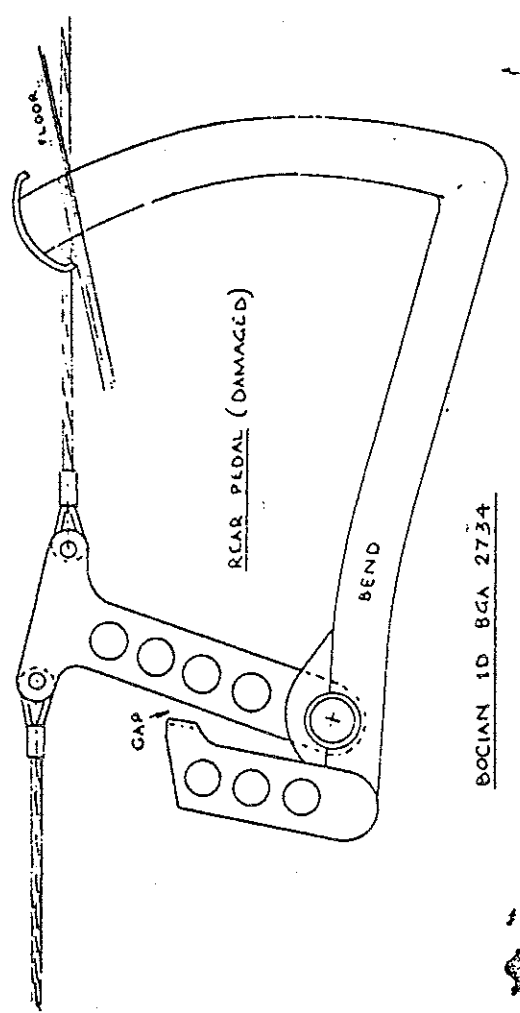
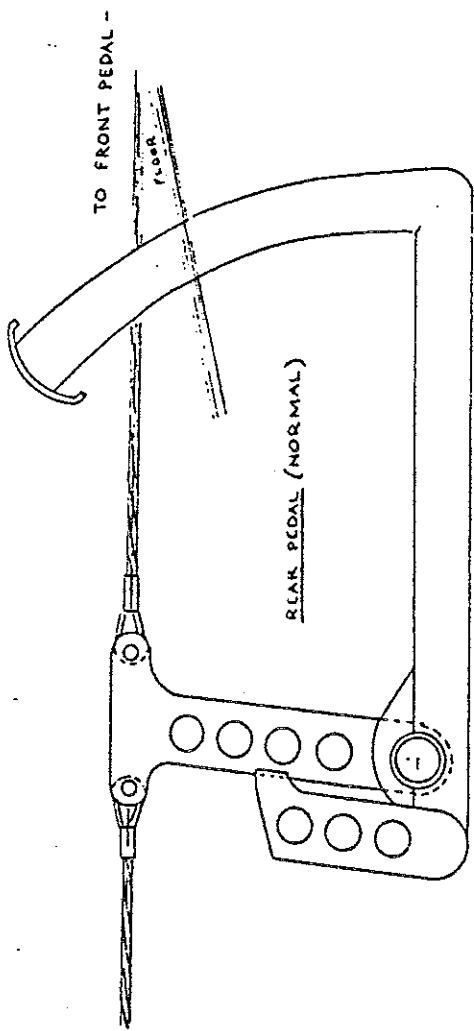
If acid is present material is outside specification and the parachute is not to be used.

Bromocresol Green Solution is available from:

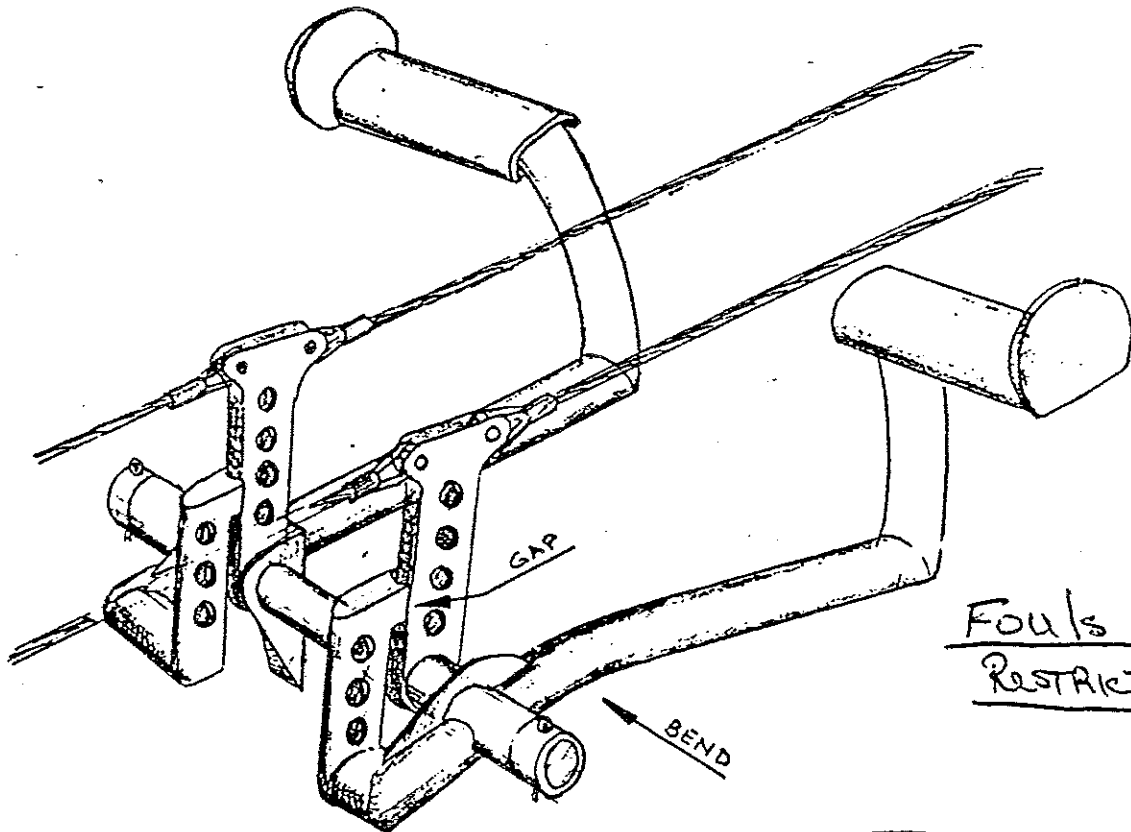
BDH Chemicals Ltd
Kenn Road
Hillside Road
Bristol
B55 7TE

Product No. 21004

or GQ Parachutes Ltd
Isfryn Industrial Estate
Blackmill
Bridgend
Mid Glamorgan
Wales
CF35 6EB



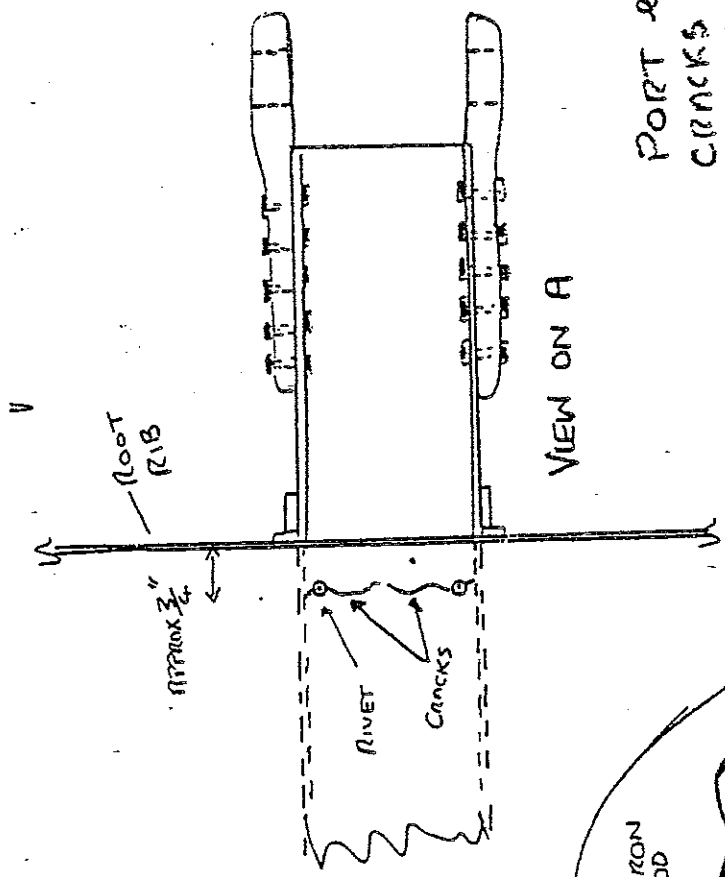
BOCIAN ID BGA 2734



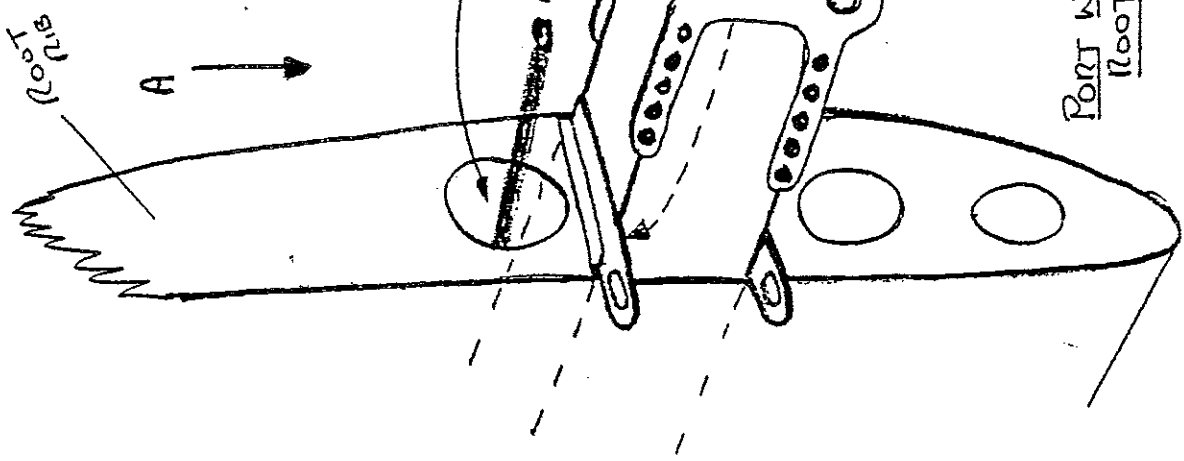
Fouls Floorboards.
RESTRICTS TRAVEL.

Langhans

BOCIANS - BENT Rudder Pedals. (REAR Seat) *10/17/88*



VIEW ON A



CRACKS VISIBLE THROUGH HERE.

PORT & STBD WING ROOTS.
 CRACKS IN SPAR AFT WEB
 APPEAR TO BE PROPAGATING
 FROM RIVET HOLES, AS SHOWN.

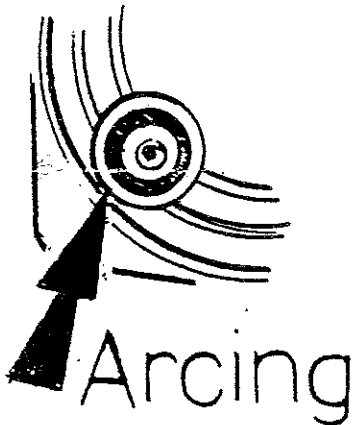
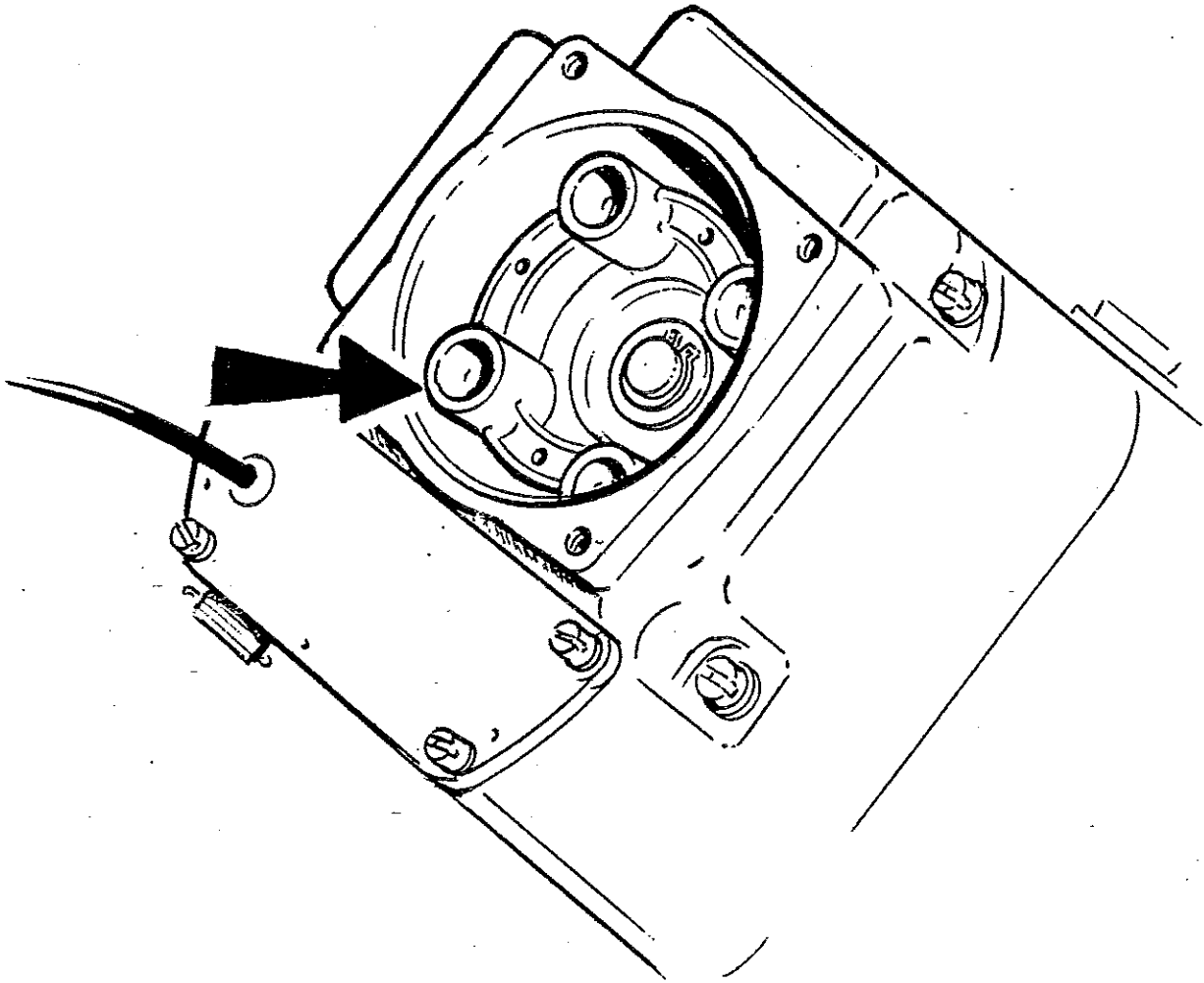
BG 135 GYPSY
 BEA 1741
 900 LAUNCHES
 685 Hours

BG 135.
INSPECTION FOR CRACKS
WING ROOT.

W.G. COOK
 11/6 759/ME

B. J. T. S. / P. / H.
 11/11/58

BENDIX MAGNETS.



FALKE ENGINE

(Report By Roy GARNER
J I/C/807E.)

The Cessna 150, like all training aeroplanes, is a simple aeroplane to fly and its stability generates great confidence in its safety. However, an aircraft is only as safe as the pilot who flies it. July 1988 saw the demise of four Cessna 150's, all of which had qualified pilots in command, at least one of them being an instructor.

- 4th July - precautionary landing in a field due to bad weather, tried to take off again hit the boundary hedge and turned over.
- 5th July - lost in cloud, descended into light rain and mist, finally hit high ground.
- 11th July - aircraft found inverted in mountainous area, believed to have encountered heavy turbulence beyond capabilities of aircraft.
- 18th July - misjudged approach, ran out of runway and went into a river.

All of these accidents were avoidable. Forward planning and a sensible approach to the flight could have saved four valuable aircraft. The only good thing is that nobody was injured in any of these accidents - a tribute to the aircraft if not the pilots.

11. MOVE OF THE UK AIS OFFICE

The UK Aeronautical Information Service has now moved from its previous site at Pinner to the Control Tower Building at London Heathrow Airport. The ASTN and Telex addresses are unchanged, but the telephone numbers are now

| | |
|---|---------------------|
| Duty Briefing Officer/UK NOTAMS Class 1 | 01 745 3450 or 3451 |
| UK AIP/NOTAM Class 2 | 01 745 3455 or 3456 |
| Central Bulletin Section | 01 745 3464 or 3465 |
| Foreign Information Enquiries | 01 745 3470 or 3471 |

The address will be

NATS-AIS Central Office
First Floor
Control Tower Building
London/Heathrow Airport
Hounslow
Middlesex
TW6 1JJ

(Personal visits are possible SUBJECT to prior arrangement).

12. CARBURETTOR PROBLEMS

Aircraft : DHC1 Chipmunk
Date : June 1988
Engine : Gypsy Major 10

ANY GYPSY ENGINE

The aircraft was engaged in aerobatic practice. When part way around a loop, the engine ran extremely roughly at speeds above 1300 rpm. A forced landing on the airfield was successfully carried out. Engineering examination showed that a length of flame trap element, approximately 4", long had detached from the filter and was obstructing the carburettor throat. After replacing the damaged flame trap, the engine ran normally. This problem has been reported previously.

13. 'VISUAL CHECK' POSTER

Some recipients have requested that a different poster be made available. This is in hand, and should be available shortly to those who request it.

CONTAMINATED FUEL

No: 10/88

Ref: EW/G88/08/17

Category: 1c

Aircraft Type and Registration: Luton Minor LA4A , G-AWIP

No & Type of Engines: 1 Rolls Royce Continental Motors Corp A65 piston engine

Year of Manufacture: 1970

Date and Time (UTC): 20 July 1988 at 1710 hrs

Location: Holm on Spalding Moor

Type of Flight: Private (pleasure)

Persons on Board: Crew - 1 Passengers - None

Injuries: Crew - None Passengers - N/A

Nature of Damage: Aircraft extensively damaged

Commander's Licence: Private Pilot's Licence

Commander's Age: 44 years

Commander's Total Flying Experience: 276 hours of which 11 were on type

Information Source: Aircraft Accident Report Form submitted by the pilot and AAIB telephone enquiries

The aircraft had taken off from a private airstrip at Sproatly when, whilst cruising at a height of 1600 feet and at a speed of 60 kt, the engine lost power and then stopped. The pilot selected a field for a forced-landing. However, on late final-approach he made a gentle turn to the right to avoid some trees. The aircraft lost speed, the pilot was unable to level the wings and the aircraft touched down "right wing low". It cartwheeled through a standing crop of barley and was extensively damaged. The pilot, who was wearing a full harness, received minor injuries to his head due to contact with the padded fascia. There was no fire.

At the time of the engine failure the pilot reported that there had been at least 5 gallons of MOGAS on board the aircraft. The fuel normally used was AVGAS 100LL.

A later examination, by the pilot, of the aircraft's fuel system revealed the fuel filter to be blocked. The material causing the blockage was traced to the sealing agent that had been used sometime previously in the fuel tank. The pilot believed that the recent change to MOGAS fuel was responsible for the degradation of this agent. No other reason for the engine failure was found. The air temperature at the time was reported as +18°C.

MORE CONTAMINATED FUEL

No: 10/88

Ref: EW/G88/04/19

Category: 1c

Aircraft Type and Registration: Luton Minor LA4A, G-AWMN

No & Type of Engines: 1 Volkswagen 1800 piston engine

Year of Manufacture: 1968

Date and Time (UTC): 1 April 1988 at 1205 hours

Location: near Gravesend, Kent

Type of Flight: Private (pleasure)

Persons on Board: Crew - 1 Passengers - None

Injuries: Crew - None Passengers - N/A

Nature of Damage: Substantial to wings, fuselage and fin

Commander's Licence: Private Pilot's Licence with IMC Rating

Commander's Age: 24 years

Commander's Total Flying Experience: 146 hours (of which 12 were on type)

Information Source: Aircraft Accident Report Form submitted by the Pilot and AAIB telephone enquiries of pilot

After conducting pre-flight checks on the aircraft the pilot took off from Rochester airfield bound for Stapleford airfield. Approximately 20 minutes into the flight while cruising at a height of about 1250 feet agl the engine totally lost power. The pilot had not been aware of any prior indications of a problem. He considered that the only area available for a forced landing was a nearby ploughed field, given an inherently poor aircraft glide performance.

At about 300 feet agl the engine started spasmodically to produce power, but this was not sufficient to arrest the descent. The approach to the field was over an area of housing and the aircraft touched down between one-half and one-third of the way along the field. Touchdown was normal, but the ground was very wet and soft and the wheels dug in as the aircraft slowed and it pitched forward onto its back. The pilot's harness, which included full upper torso restraint, held and, after releasing it, the pilot exited the aircraft without great difficulty. He was uninjured.

The pilot believed that contamination in the fuel causing blockage of the carburettor may have caused the loss of power. The aircraft was reportedly normally refuelled with Mogas from a jerry can via a muslin type filter. The pilot was unaware of a need on this type of aircraft to check for water contamination by conducting fuel system drain checks, and it was not known when such checks had last been conducted on G-AWMN. Reportedly this type of aircraft normally is not fitted with tank drains suitable for routine pre-flight operation, but is provided with a screwed drain plug on the gascolator.

14. ELEVATOR TRIM TAB CABLE DISCONNECTED

P/E

Aircraft Type : Rand KR2 Registration : G-BMMD
Date : April 1988
Reportable accident at Enstone Airfield.

TRIM TAB CABLES.

Extracts from AAIB Report.

The co-owners and builders of the aircraft were taking-off on a flight to conclude the Handling Pilot's familiarisation with the aircraft. The ground run into a light easterly wind was normal and the aircraft became airborne at a planned speed of 70 knots. The pilot allowed it to accelerate further to about 85 knots before initiating a climb. Then, at a height of about 60 feet, the nose pitched up violently and the aircraft was seen to oscillate in both pitch and roll before the nose dropped. The pilot reported an instant stall whilst under full power. The left wing dropped and before control could be regained, the aircraft struck the grass adjacent to the runway in a tail down attitude. The aircraft somersaulted onto its back and was substantially damaged. Both pilots were uninjured having been restrained by full harnesses.

Subsequent examination of the aircraft revealed a disconnection of the elevator trim tab control cable. The spring loading attachment shackle was still safety-wired and there was no visible damage to the trim tab horn. It could not be explained how such a disconnection might have occurred. It is not known whether the range of movement had been checked from the cockpit prior to flight.

15. AERONAUTICAL INFORMATION CIRCULARS

P

The following of relevance to General Aviation were published during September 1988.

| | | |
|----------------------|--------------------|--|
| 75/1988 | White 303 | AIS Mobile Briefing Unit |
| 76/1988 & 78/1988 | Green 124 & 125 | Aeronautical Charts for Civil Aviation |
| 77/1988 | Pink 1988 | Hypoxia in flight and its prevention |
| 79/1988 | Yellow 125 | Accuracy of Aerodrome Met. forecasts |
| 84/1988 | Yellow 127 | Use of Prestel for Aeronautical Information |

END

14. UNAUTHORISED USE OF MOTOR FUEL - PLASTIC CONTAINERS

Aircraft : Homebuilt Aircraft
Date : Summer 1988

The pilot had completed a local flight on a warm summer's evening. Before replacing the aircraft in the hangar, he decided to refuel it using a plastic petrol can and plastic funnel. As he started pouring the petrol, there was a sudden loud crack as a spark of static electricity was produced. The fuel and vapours immediately caught fire causing the damage shown. Thankfully, nobody was hurt and fast work with the fire extinguishers kept in the aircraft hangar extinguished the blaze.



CAA Comment:

The nearby airport gave the following weather aftercast for 19.00 (local), the time of the incident:

WIND 070/9, CAVOK, RELATIVE HUMIDITY 45%, TEMPERATURE 24°C, thus dry conditions, ideal to static discharge.

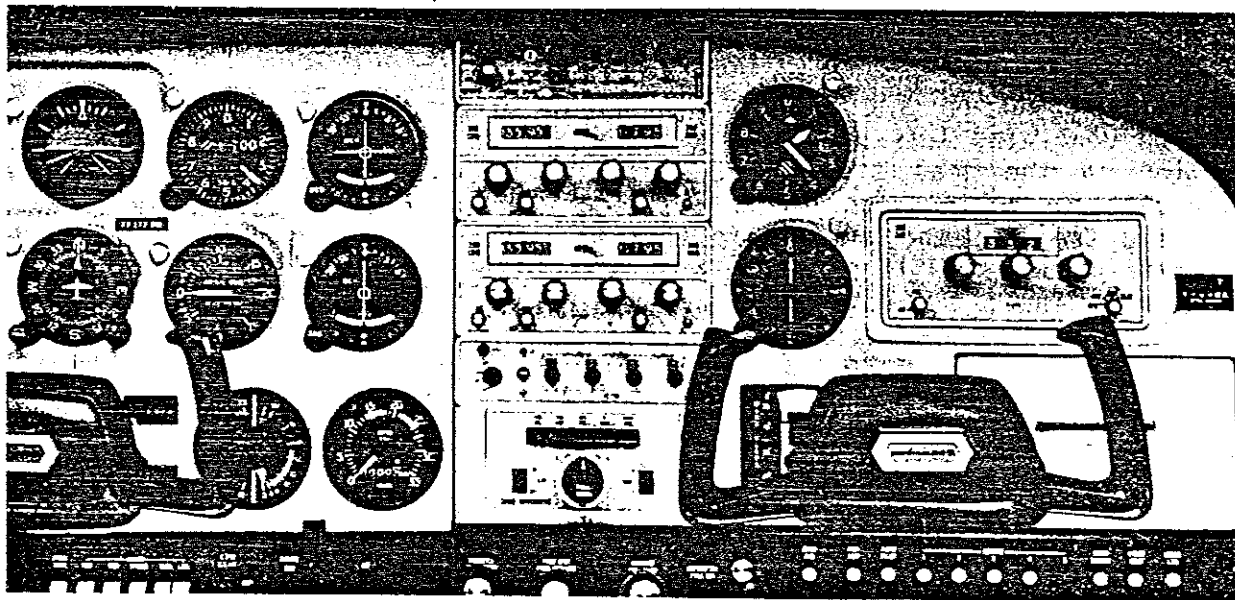
Numerous articles have been written in GASIL concerning the dangers, the photo above reinforce the message.

15. RUDDER BAR BRACKET FAILURE

P/E

Aircraft : Slingsby T67M
Date : August 1988

The aircraft was engaged in aerobatic training and was recovering from an intentional spin to the right. After a normal recovery the pilot found that the rudder would not centralise. The student found that the rudder pedal, which had been adjusted fully forward before flight, was jammed against a former. He released the constriction and the aircraft flew back to base and carried out a normal landing. Engineering investigation found that the rudder bar cross-tube assembly fork-lug had broken off. The assembly was removed from the aircraft and returned to the manufacturer. This is the first incident of its kind, and is therefore considered to be an isolated case.



Various reports have been received by the CAA of radios having been installed in aircraft by people other than licensed Radio Engineers - possibly the aircraft owners themselves.

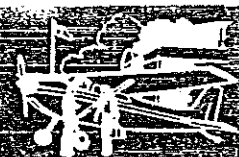
It is important to remember that when any radio, (and this includes all avionic equipment), is fitted to an aircraft this represents a modification of the aircraft and as such has to be approved by the CAA. (Any modification to an aircraft not approved by the CAA renders its Certificate of Airworthiness invalid and in some cases the insurance).

It is also important to remind people that not all radios are CAA approved for installation in UK registered aircraft and before parting with your hard-earned funds it is worth establishing that the radio type is acceptable and that the appropriate paper work and release documents are in order.

When a Radio Engineer is asked to install a radio in an aircraft he will design an installation, taking care to ensure that the aerial, the wiring and other fittings do not interfere with other aircraft systems or jeopardise the safety of the aircraft. He will submit a minor modification installation request to the local CAA Office who, if they are satisfied with it, will approve this modification to the aircraft. The Engineer will then proceed to fit the radio as outlined. After the fitment, a flight test will be necessary to ensure the proper function of the equipment. Once the results of this flight test have been received by the CAA and found satisfactory, the modification will be cleared by the CAA surveyor and a Certificate of Radio Installation, Form AD917 will be issued.

In order to remain legal, it is necessary to obtain from the Department of Trade and Industry (Radio Regulatory Division) an aircraft licence in order to operate the radio. The present price for this is £25 per annum. This licence, to be valid, requires a Certificate of Radio Installation, AD917 to be up-to-date and accurately detailing the current radio installation. You must ensure that your engineer obtains this on your behalf after clearance of the modification or if any further additional equipment is fitted. Furthermore, without it being correct, a C of A renewal may be refused.

CAA Comment: The importance of the proper routing of electrical cables and other equipment was tragically highlighted in an accident in Canada where a Cessna was modified with a larger engine and the battery was moved to the rear of the fuselage. The elevator cables rubbed against the battery leads until ultimately they rubbed through and shorted the battery. This burnt through the elevator cable and leaving no pitch control and the aircraft crashed killing the sole occupant.



General Aviation Safety Information Leaflet

Safety Promotion Section
Aviation House, South Area
Gatwick Airport, West Sussex, RH6 0YR
Telephone - (0293), Safety Prom 573225/6, Exchange 567171
Telex - 878753, Facsimile - (0293) 573999



9/88
16th September 1988

1. FURTHER DANGERS OF UNAUTHORISED USE OF MOTOR FUEL

P/E

The use of Motor Fuel in aeroplanes is quite clearly defined in Airworthiness Notice No. 98. Amongst other requirements, for the use of motor fuel in aeroplanes to be acceptable, the fuel **must** be obtained from an approved aerodrome source and not obtained from a local petrol station.

The SDAU recently received a letter from someone who purchased a quantity of new 'jerricans' from a company advertising in a well known mail order magazine. They appeared to be similar in every way to the standard military version.

However, he has noticed a tendency for the red sealing paint lining the inside of the cans, to detach itself from the steel and to be caught in the refuelling funnel and filter arrangement that he normally uses.



Whilst the stoppage of the lawn-mower engine through such contamination and blockage would be, at worst, inconvenient, the potentially disastrous results of such contamination and engine stoppage in an aircraft engine do reinforce the reasons for the safe-guards shown in Notice No. 98.

Furthermore, the storage of quantities of fuel intended for aircraft use at an airfield or private strip comes within the scope of article 82 of the Air Navigation Order.

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

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 accuracy of the contents or the absence of errors and omissions cannot be guaranteed.

In order to identify the broad subject matter which is of interest to the public, the following categories are used:

Operational items mostly of interest to pilots

Airworthiness items mostly for engineers

Items which involve both operational and airworthiness interests

P/E

E

P/E

Repeat TNS/12/88

Technical Committee
13.5.1986.
REF: BGA/TNS/5/6/86

British Gliding Association

BGA Technical Committee

Policy on Weak-Links

Towards More Productive Launching

1) Introduction

With the acquisition of higher-powered launching equipment, heavier two-seat gliders, & stronger cable it is inevitable that the B.G.A. policy on weak-link ratings has to be revised, if more productive launching is to be realised.

Reference to this aspect of launching, was drawn by John Gibson, in his unique explanation of the dynamics of launching in his article in S & S (August/Sept 85) titled "A LOOK AT WENCH LAUNCHING"

2) New Policy

The B.G.A. Technical Committee, at its meeting on May 7th 1986, endorsed a recommendation by the Chief Technical Officer, that the U.K. should adopt the European system as typified by the Test/range of colour coded weak-links. It further agreed that the weak-link rating should not exceed that which is approved for each type of glider, in that type of glider's type certificate, Flight Manual, or Certificate of Airworthiness. Except that:

3) For the older types of U.K. gliders certificated to B.C.A.R. Section E, it will be acceptable to uprate the weak-link from the traditional 1000lbs to 1100 lbs (500kp) equating with the Test "white" link.

4) Colour Coding.

Whether Test type weak-link are used or not, it is essential to adopt the following colour code:-

| | | | |
|----------|----------------|----------|-------------|
| Test No1 | Black. | (1000kp) | = 2200 lbs. |
| " " 2 | <u>Brown.</u> | (850kp) | = 1870 lbs. |
| " " 3 | <u>Red.</u> | (750kp) | = 1650 lbs. |
| " " 4 | <u>Blue.</u> | (600kp) | = 1320 lbs. |
| " " 5 | <u>White.</u> | (500kp) | = 1100 lbs. |
| " " 6 | <u>Yellow.</u> | (400kp) | = 880 lbs. |
| " " 7 | <u>Green.</u> | (300kp) | = 660 lbs. |

KA7 - 2000 lbs
Blank - 2000 lbs
IS27/324 - 1100 lbs
TNS 7/8/86

It is not, of course intended that all 7 variants should be required. In most cases Brown, Red and White will meet all requirements.

5) TO ELIMINATE ERRORS

The BGA Technical Committee strongly recommend that the approved weak-link rating for each type be identified on a PLACARD in the cockpit, and colour coded adjacent to the hook(s).

b) This Technical Newsheet supercedes para 4.3 of BGA Operational Regulations, which will be amended in due course

Yours Sincerely.

R.B. Stratton
Chief Technical Officer.

Weak-Link List (Incomplete)

BGA TNS/5/6/86

Test BROWN. Rated at 1870 lbs

(How Strong Is Your Cable?)

| | |
|---------------|-----------|
| ASK 13 | 2350 lbs |
| ASK 21 | 1870 lbs |
| Cirrus (open) | 1896 lbs. |
| Rhoulerche II | 2000 lbs |
| Nimbus III | 2000 lbs |
| ASW 22 | 1870 lbs. |

Test BLUE Rated 1320 lbs.

| | |
|-------------|---------------------|
| LS6 | 1760 lbs |
| SF27A | 1654 lbs |
| Puchatz. | 1600 lbs |
| ASW 20. | 1320 lbs |
| PIA 20. | 1320 lbs |
| ASW 17. | 1320 lbs |
| PIRAT | 1516 lbs |
| KA6 CR. | 1400 lbs |
| SF 26A | 1433 lbs |
| KA6E | 1400 lbs |
| JANUS. | 1653 lbs |
| TWIN-ASTIR. | 1800 lbs |
| LS 4 | 1323 lbs |
| DISCUS; | 1499 lbs |
| VENUS | 1320 lbs |
| ECCIAN. | 1518 lbs |
| NIMBUS 2 | 1320 lbs |
| DG 300. | 1500 lbs |

(BGA TNS 3/4/88)

Test WHITE Rated at 1100 lbs.

| | |
|----------------------|----------|
| Pilatus 54 | 1100 lbs |
| Cirrus STD | 1100 lbs |
| Astir CS | 1100 lbs |
| ASK 18 | 1100 lbs |
| UK Gliders to BCAR/E | 1100 lbs |
| VEGA | 1100 lbs |
| I.S. 30. | 1100 lbs |

ALRWORTHNESS DIRECTIVE

135A TNS 11/12/88

SF 34

To DUSSERS 11/10/88

88-162/2 Schelbe

Date of Issue:

25. AUG 1988

Affected Sallplane:

German Type Certificate No. 336

SF 34 and SF 34 B

serial no. 5102 through 5131 inclusive

Subject: Wing-fuselage connection

Reason: Insufficient structural strength

Action and compliance: Until the manufacturer has issued corrective measures to fully re-establish airworthiness in accordance with the type certification, following action must be accomplished.

1. Visual inspection of wing-root ribs for cracks and delaminations, especially near the sockets for the bolts and connection wing-root ribs stub spar. Also inspect the forward Tangentialtube and tube attachment in the fuselage for cracks and deformation. If any damage is found, repair has to be accomplished by the manufacturer Messrs. Schelbe Flugzeugbau, Dachau. The defect reports of each visual inspection must be sent to the responsible LBA regional office without any delay.
2. The following operating limitations-deviating from those established in the Flight Manual - must be observed. Therefore corresponding placards must be applied and or corrected within good view of the pilot.

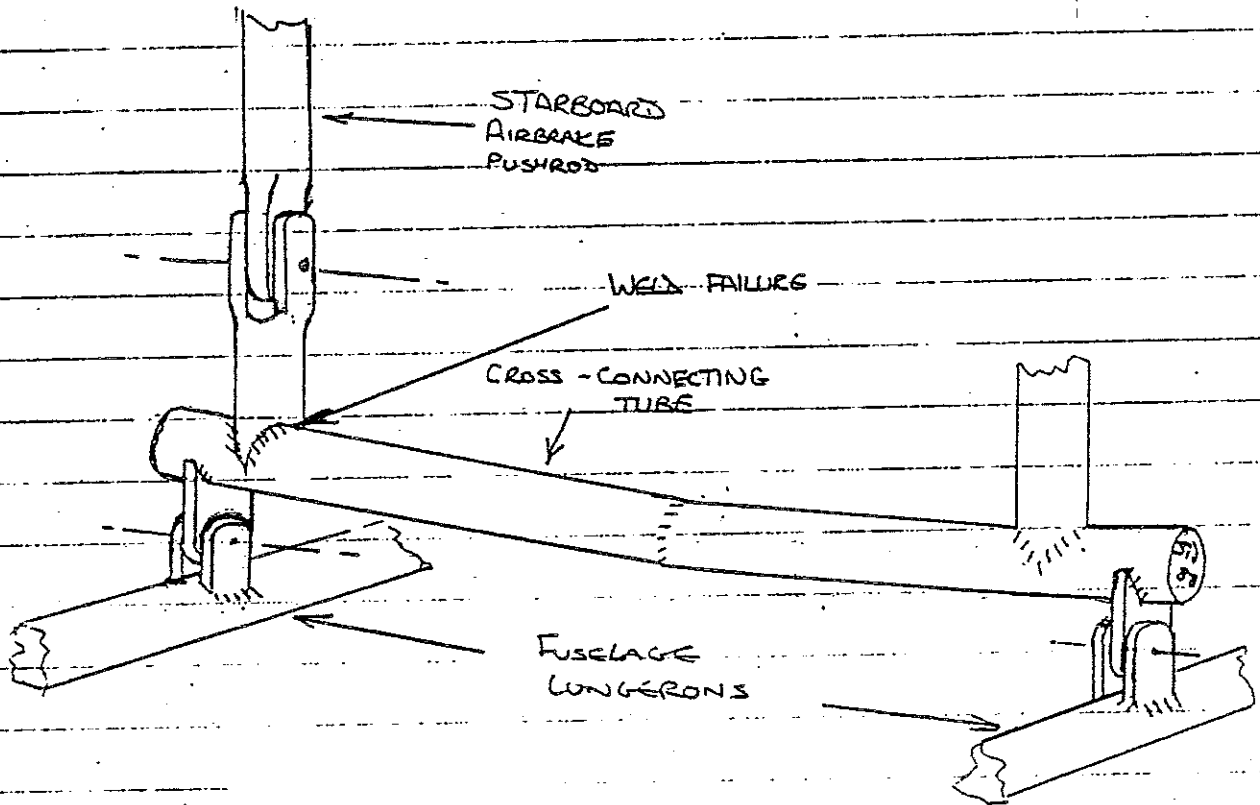
| | |
|-----------------------------------|---------------------|
| Never - exceed speed: | $V_{NE} = 170$ km/h |
| Speed for maximum gust intensity: | $V_B = 135$ km/h |
| Aero tow: | $V_T = 135$ km/h |
| Manoeuvring speed: | $V_A = 135$ km/h |

no aerobatics, no spinning
 no turns with a bank angle of more than 60°
 training flights only with instructor

- The present airspeed indicator markings must be replaced by:
- a) a radial red line at 170 km/h
 - b) a yellow radial from 170 to 135 km/h

Accomplishment and log book entry:
 Action to be accomplished by an approved service station and to be entered in the sailplane's log by a licensed inspector.
 Note:
 This Airworthiness Directive replaces AD-No. 88-162 of July 21, 1988

SKETCH SHOWING LOCATION OF FAILURE IN K7/K13 CONVERSION
(BGA ?) AIRBRAKE OVER CENTRE LOCK.



I. A. Smith 1/11/798M

JANTAR St. 2. TRIM SPRING

1. GROUNDS FOR INTRODUCING THIS BULLETIN

During the post-repair test flight of SZD-48 glider the following occurred : the end of trimming-spring /the arm fitted in the "eye" on control column body/ hitched the composite floor of the cockpit /"seating pan"/. In respect to the above according to directions of this Bulletin the inspection should be performed to check that the spring end to floor distance retains the minimum clearance.

2. LIST OF GLIDERS COVERED WITH THIS BULLETIN

This Bulletin covers the SZD-48 and SZD-48-1 glider types having the Factory Nos :

- from W-846 up to W-926
- from B-985 up to B-1064
- from B-1095 up to B-1124
- from B-1135 up to B-1274

3. LIST OF ENCLOSURES

The sketch No Fig 1 is enclosed to this Bulletin

4. DESCRIPTION OF THE INSPECTION PROCEDURES

4.1. Take out the cockpit floor /"seating pan"/. Look for the symptoms of the floor being worn by the spring end and for the correct protruding of the spring out of the "eye" on the control column body.

4.2. Disassemble the trimming-spring /remove the nut of the fixing screw "control column hinge axle" and remove the above screw for disassembling the control column together with the spring with it fitting/.

1005 11/02/88

4.3. Measure the disassembled spring and check the length of the arm fitted in the "eye" on the control column body /see Fig-1/. The arm length should be 83 mm. If the arm is longer it should be grinded for the correct dimension and the end rounded as shown on the sketch. If the dimension is correct the end should be rounded only.

4.4. Reassemble the total unit. Move the arm of the trimming-spring into its front limit position and pull the control stick "back" and check the distance of spring end to floor /minimum clearance should range 3 mm/ through the opening near the stick.

5. FINAL STATEMENTS

The works performed acc. to this Bulletin should be noticed in the Glider Log Book, chapter "Maintenance Works".

- THE END -

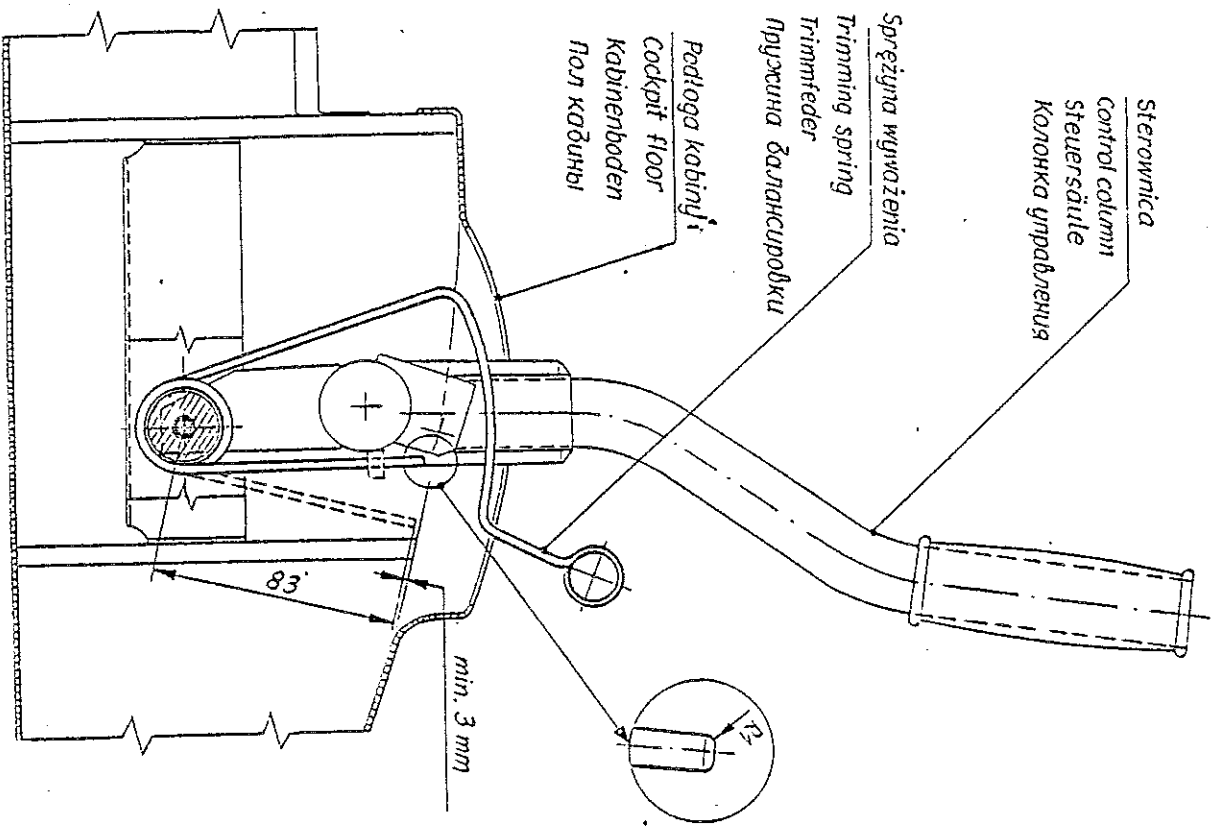


Fig. 1.

BULETYN No BR-033/88 "JANTAR St.-2"

Ref : Inspection for eventual collision of the trimmer-spring and cockpit floor and consequent correction of the trimmer-spring arm length /concerns the SZD-48 and SZD-48-1 glider types/-

Way of introducing : Immediately when this Bulletin is received.

Elaborated in PDPS-TKS on 1988-04-20

Director of PDPS "PZL-Bielekko"
J. Borcia, M.Sc.

This is the translation of the original Polish text approved by CACA.

Translated by :
 Wiesław Stafioj, D.Sc.
Stafioj

JUNIOR

Rudder Fault?

1. GROUNDNS FOR INTRODUCING THIS BULLETIN
 =====
 During the operation the rotation of the rear fuselage holder nest and the holder itself has been found.
 So the possibility of collision of the movement limiting screw head with the rudder ballancing weight appeared.
 This Bulletin gives the way of removing this fault to avoid the case described above.

2. LIST OF GLIDERS COVERED WITH THIS BULLETIN
 =====

This Bulletin covers the gliders of SZD-51-1 "JUNIOR" type having the following fact. Nos:
 X-115, X-116, X-132
 from B-1495 up to ~~B-1503~~
 from B-1614 up to B-1616
 from W-927 up to W-964
 from B-1767 up to B-1817 except of B-1816

3. LIST OF ENCLOSURES
 =====

The sketches Nos: Fig 1 and Fig 2 showing the general view of the holder and dimensions of headless screw are enclosed to this Bulletin.

4. DESCRIPTION OF THE INTRODUCED CHANGE
 =====

The change introduced with this Bulletin depends on the proper cutting of M5 screw to change it into the headless screw acc. to sketch Fig 2 and then on the fixing this screw in the holder.

5. THE PROCEDURES OF THE CHANGE
 =====

- 5.1. Disassemble the rudder (acc. Techn. Service Manual)
- 5.2. Remove the M5 screw limiting the movement of rear fuselage lifting-holder.

TMS
11/12/88

5.4. The headless screw should be screwed on (till to stop) w before wetted with lacquer and secured by means of pin on both sides in respect to the hole in holder nest (by way try to fasten the screws which fix the holder nest fittings).

5.5. The screw surface after cutting should be secured by means of anticorrosive pad for metal.

5.6. Check the operation of holder and its locking.

5.7. Assemble the rudder.

6. FINAL STATEMENTS
 =====

6.1. The works performed acc. to this Bulletin are to be noted in the Gilder log Book, Chapter "Maintenance Works".

THE END

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JUNIOR
Russel Ford?

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- 5.2. Remove the M5 screw limiting the movement of rear fuselage lifting-holder.
- 5.3. Cut-off the M5 screw length and make a slot for a screwdriver acc. to the sketch Fig 2, as a result the headless screw

5.4. The headless screw should be screwed on (till to stop) while before wetted with lacquer and secured by means of pointer on both sides in respect to the hole in holder nest (by way try to fasten the screws which fix the holder nest fittings).

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