

BRITISH GLIDING ASSOCIATION

BGA TECHNICAL COMMITTEE

TECHNICAL NEWSHEET TNS 11/12/90

The 1991 BGA Compendium of Airworthiness Directives, Mandatory Modifications, Special Inspections and Check List of Defects, will be issued early next year and will include the significant items from 1990TNS.

PART 1 Airworthiness "AGGRO" - Gliders

- 1.1 Cockpit Placards - lasting legibility - Whereas various means of printing may be used, experiments have shown that "STABILO - OHPEN 76P (Wasserfest permanent)" pens are very effective. Also, we are advised that pens devised to mark freezer bags, also mark placards! (See specimen on back page of this TNS).

Please conduct a campaign to replace illegible placards and to relocate them where they can easily be read by normal mortals. They are, after all, the limitations to which you fly the glider!

- 1.2 BIJAVE Canopy Catches - Improved locks have been introduced following two cases of undemanded loss of rear canopy, and unlocking of front canopy at Borders G.C.
- 1.3 CIRRUS - partially submerged - in Salt Water, after landing on a beach, with disregard for the Tide Tables! Whereas the immediate damage was inconsequential, the long term dismantling and corrosion proofing, is proving costly. (Report from N. Ireland).
- 1.4 T.45 Swallow - Cracks in Torque Tub/Yoke assembly - Sketch herewith is self explanatory.  
(Mike Morley. Portsmouth Naval G.C.).
- 1.5 LS1-F Locked Aileron Control (in the USA).

Pilot abandoned aircraft in a spin.  
Bent aileron push-rod at the Root Rib roller-guide caused a pop-rivet to jam.

PART 2 S.L.M.G's and Tugs

- 2.1 Grob 109B TH 817-29 requires - Inspection and where necessary, replacement of studs in the root rib stud plate. Serial No's 6200-6362 are effected. Details from Agents. G.109 Maintenance Manual Page 41e, Sections 3.14.3, item 7 refers.

## EXTRACTS FROM G.A.S.I.L's

- 2.2 Extensive Corrosion - metal airframes.
- 2.3 Pik 20E - Power Loss. Waxed fuel/oil mixture!
- 2.4 "HOT" MOGAS - Engine Failure.
- 2.4 Wooden Components - failure due to excessive moisture.
- 2.6 Prop- Swinging can endanger - your health.  
Photo from GASIL 9/90 is horrifying!
- 2.7 Hoffman Dimona - the latest list of Airworthiness Directives is attached hereto.
- 2.8 Piper (Various) Lift Strut Inspection/Replacement  
Service Bulletins 910A (10/10/90) and 528D (10/10/90) are available from Piper Agents and (M3) approved organisations. (SB 910A applies to PA18/19's).  
  
BGA have conclusive proof that radiography can be applied to check for internal corrosion. Likewise other forms of NDT may be effective such as Ultra-Sonic thickness gauges etc. The BGA are in correspondence with CAA. Should you need to replace struts, try AIRPARTS, BOOKER.
- 2.9 Battery (Lug) Failures - CAA Notice No.12 explains the problem.
- 2.10 Aircraft Markings & Placards - (Tugs/SLMGs etc). CAA Notice No.12 also addresses this problem.
- 2.11 Undercarriage Pivot Bolts (PA18/19/25 etc) Bent bolts have been replaced in the SuperCub at R.N.G.C. Lee-on-Solent. (Reported by Ian Hammond).

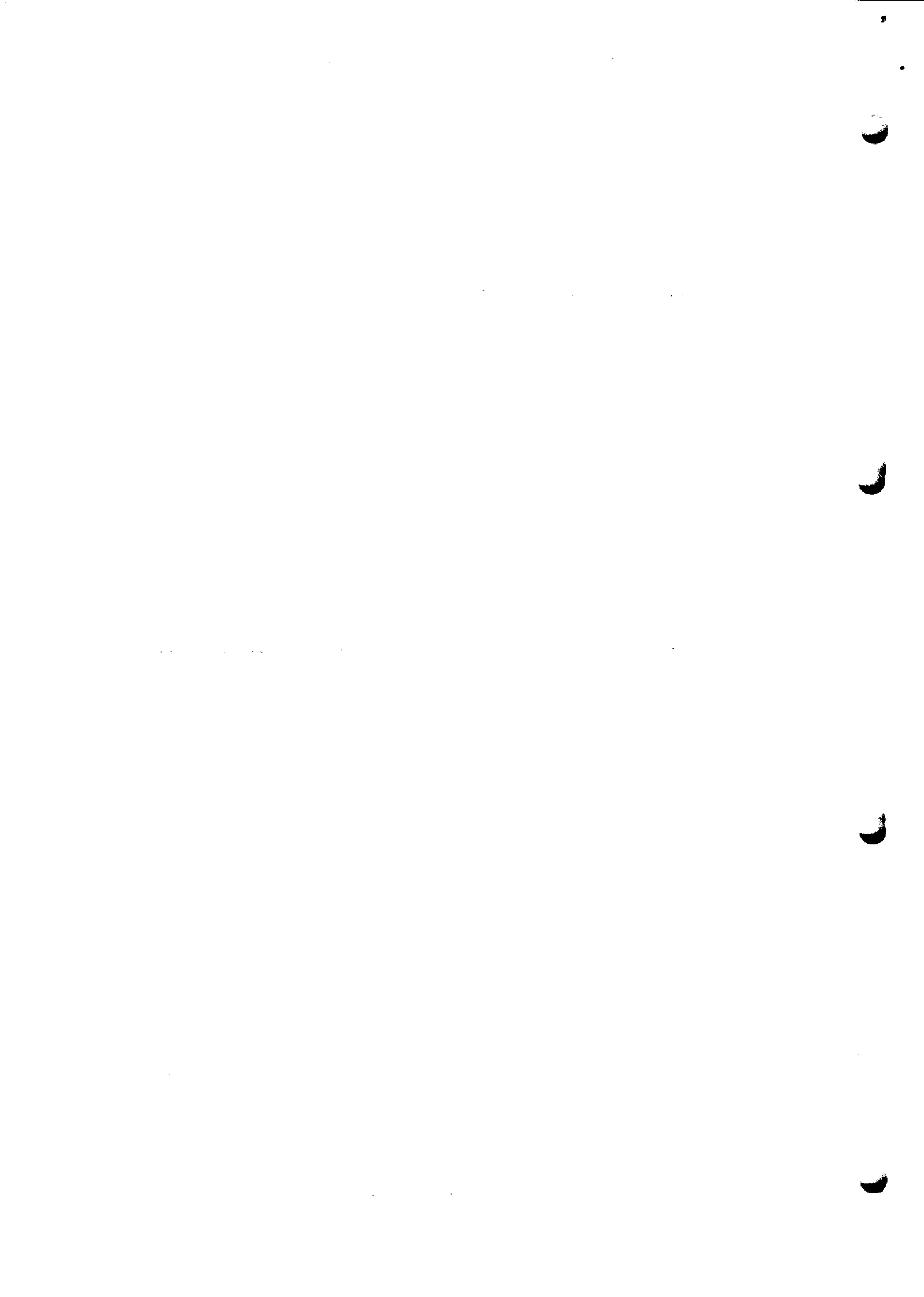
## PART 3 General Matters

- 3.1 Weak Link Ratings - The attached revision is available as guidance. The Flight Manual for any type of Glider (Where such is available), over-rides this list, which is derived from Tost, via Chiltern Sailplanes, who can supply the hardware. Please notify any errors or omissions to the BGA office,
- 3.2 Slingby T.61F (ex ATC Ventures). The first of this T.61 Variant has been submitted for certification on the UK Civil Register. Please consult BGA/CTO should you become involved.
- 3.3 Blanik (L13) Disabled persons - rudder modification has been fitted at Enstone. (Contact Tony Cox 0993 774892).

- 3.4 Blanik (L13) - (Life Extension based on G.F.A. Directives). Where there has been less than accurate recording of flying times and launches, the BGA reserve the right to refuse life extensions. Consult before action!!
- 3.5 Inspector Renewals, are now overdue and this is the last opportunity to have your name included in the 1991 list and for your insurance idemnity to be renewed. Please send £ 15.00 to BGA office with your Inspector's Designation.
- 3.6 Blanik (L13) Improvement in Winch/Autotow launch performance. With the introduction of the L.23 (Super Blanik), a modification has been devised to increase the launch height, comparable with other gliders. This modification is available from Peter Clifford Aviation, or from Tony Cox 0993-774892.
- 3.7 Tug Exhaust Silencer (Gomolzig) kits are now approved for PA18 Cubs and Robin DR 300/400. Kits from Skycraft Services (Michael Barnett) 0763-852150.
- 3.8 Hoffman 4 Blade Propellers are now approved for PA25-Pawnee, Robins DR 300/400 and Rally 180.
- 3.9 Launch Point Signalling Systems- Please review the reliability of your Signalling systems. There have been two serious winch related accidents in which various aspects of inappropriate signalling were a factor.
- BGA Laws and Rules (Recommended Practices No's 5 & 10) and Operational Regulations 5.6, 5.7 and 5.8 refer. The latter specifies the timing of dots and dashes for lamp signalling.
- 4.0 LIMBACH Spares - Chiltern Sailplanes Ltd, (Booker) 0865-890517 have been added to LIMBACH's list of Agents.

A Happy X-Mas from the BGA Technical Committee to all our readers, including those who have failed to renew their Inspector ratings (£15).

R.B. STRATTON  
CHIEF TECHNICAL OFFICER





# 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



21 September 1990

9/90

## 1. PROPELLERS BITE!

P/E

During a moment of inattention, the pilot of a Microlight aircraft was struck by the rotating wooden propeller of his aircraft. The propeller was only rotating at idling speed and it didn't break after striking him.



The pilot's arm was cut half way through, right down to the bone and as the photograph shows extensive stitching was necessary.

### CAA Comment

GASIL offers no apologies for printing such a shocking photograph. There is still an unacceptably high number of injuries and deaths due to propeller incidents and if this photograph causes you to stop, think and take that little bit more caution next time you have cause to touch, swing or be close to an aircraft propeller, then this photograph is justified.

This pilot was very lucky - most people who have an incident with a moving propeller are not nearly so lucky.

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

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

Operational items mostly of interest to pilots  
Administrative items mainly for agencies



#### 4. ENGINE FAILURE ON TAKEOFF.

Aircraft type : Druine Turbulent, Reg. G-ARRZ  
Date : July 1990

#### "HOT" MOGAS?

Extract from AAIB Bulletin.

The pilot pulled the aircraft from the hangar and found that the engine was warm since the aircraft had flown earlier that day. He took off from the private airstrip, and since there was no wind he took off downhill. The initial climb angle was low, although this was not altogether unexpected since it was a very warm windless day. At a speed of around 55 knots, the engine stopped and the pilot was able to head through a gap in the boundary trees into a valley which added about a further 100 ft. to his previous estimated 80 ft. of height. He force landed in the next field which had a steep downhill gradient and was covered with tree debris. Just before wheel contact the righthand wing dropped and the aircraft pivoted through 180° and slid about 60 ft. before coming to a stop. The aircraft was substantially damaged including a broken main spar.

#### CAA Comment

The aircraft had been filled with 4 star Mogas which had been obtained from a local filling station.

The day concerned was hot and the outside ambient temperature was probably about 20° C. The pilot, in his report, suspects that the cause of the engine stoppage was a fuel vapour lock.

All pilots are reminded of the contents of Airworthiness Notices 98 and 98A and Safety Sense Leaflet 4A (Use of Mogas) which detail the correct procedures for use of mogas, including the limitation of 20° C in the temperature of the fuel in the tank.

Should you have any doubts, then you are urged to refer to these documents.

### 3

Aircraft Type : Pik 20E (WAXED FUEL?)  
Date : April 1990

This self launching motor glider operates on a 40:1 2 stroke mixture using 4 star Mogas and Castrol TT oil.

On climb-out, power was lost at 500 ft and subsequent checks showed the fuel filter partially blocked with a waxlike deposit. The fuel flow check gave 30 litres per hour against the designed 60 litres per hour.

The operator presumes that waxing of the oil in the fuel mixture had occurred during the period of heavy frost about a week previously.

A similar event was experienced after a period of heavy frost in early 1989 and before that in March 1987. In the 1987 incident, not only was a plug burnt but holes eroded through the piston crown since the reduced fuel flow due to a partially blocked filter weakened the mixture to the rear cylinder.

Have any other operators noted this problem, the engine involved was a Rotax 501?



Piper Aircraft Corporation  
Beach, Florida, U.S.A.

# SERVICE No. 5280 BULLETIN

RECEIVED  
O 2 NOV 1990

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\* PIPER CONSIDERS \*  
\* COMPLIANCE MANDATORY \*  
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Date October 19, 1990

1990

PA 25 - PAWNEE

This Bulletin No. 5280 supersedes and voids Service Bulletin No. 5280, dated October 11, 1989)

This Service Bulletin is divided into Two (2) PARTS. Check each PART for Purpose, Instructions, and Compliance Time.

SUBJECT:

Wing Lift Strut Assembly  
Inspection/Replacement

REASON FOR REVISION:

To revise Compliance Time,  
Purpose, Instructions, and to  
announce the availability of new  
sealed lift struts

MODELS AFFECTED:

SERIAL NUMBERS AFFECTED:

All aircraft incorporating  
steel wing lift struts (See note)  
J-2 Series, Cub  
J-3, NE-1, L-4 Cub  
J-4 Series Coupe  
J-5, J-5C, L-14, AE-1, HE-1, Series  
Cub Cruiser  
PA-11 Series, Cub Special  
PA-12 Series, Super Cruiser  
PA-14 Series, Family Cruiser  
PA-15 Vagabond  
PA-16 Clipper  
PA-17 Vagabond  
PA-20 Series, Pacer  
PA-22 Series, Tri-Pacer/Colt  
PA-25 Series, Pawnee

ALL  
500 through 1975  
ALL  
4-401 through 4-1649  
5-1 through 5-1389  
11-1 through 11-1678  
12-1 through 12-4036  
14-1 through 14-523  
15-1 through 15-388  
16-1 through 16-736  
17-1 through 17-215  
20-1 through 20-1121  
22-1 through 22-9848  
25-1 through 25-8156024

NOTE:

All variations of the PA-18 Series and PA-19 Series are no longer affected by this Service Bulletin and are covered by Piper Service Bulletin No. 910A (or latest revision).

APPROVAL: The technical contents of this Service Bulletin have been approved by the F.A.A.

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TNS 11/12/89



Piper Aircraft Corporation  
Vero Beach, Florida, U.S.A.

RECEIVED  
20 OCT 1989  
DICK STRATTON

# SERVICE No. 910A BULLETIN

OPPI

\*\*\*\*\*  
\* PIPER CONSIDERS \*  
\* COMPLIANCE MANDATORY \*  
\*\*\*\*\*

Date October 10, 1989 S 1989

(Service Bulletin No. 910A supersedes and voids Service Bulletin No. 910, dated May 15, 1989 and the affected portions of Service Bulletin No. 5288, dated March 10, 1978)

This Service Bulletin is divided in two Parts. Check each Part for applicable compliance time, purpose and instructions.

### PA 18/19 CUBS

SUBJECT:

Wing Lift Strut Assembly  
Inspection/Replacement

REASON FOR REVISION:

To revise models affected, serial numbers affected, compliance time, purpose, instructions and to add Part II.

APPROVAL:

The technical contents of this Service Bulletin have been approved by the F.A.A.

### PART I

MODELS AFFECTED:

SERIAL NUMBERS AFFECTED:

PA-18/18A Series Super Cub  
NOTE: Includes All Serial  
No. L-21A, L-21B, & L-18,  
Seaplane, Agricultural, and  
Military Versions

18-1 through 18-8309025,  
1809001 through 1809032,  
1809034 through 1809040

PA-19 Super Cub

19-1, 19-2 and 19-3

COMPLIANCE TIME:  
thereafter.

Before next flight and each twelve (12) month period

#### NOTE:

If the inspection requirements of Service Bulletins No. 5288 or No. 910 have been accomplished within the last twelve (12) months or if the wing lift struts are new and were installed within the last twelve (12) months, inspection is required no later than twelve (12) months after the last inspection or new lift strut installation as the case may be. If the aircraft is new with original lift struts installed, the repetitive inspection begins when the aircraft is twelve (12) months old.

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### HOFFMANN H36 DIMONA MOTOR GLIDER

<u>CAA AD No.</u>	<u>Associated Material</u>	<u>Description</u>	<u>Applicability - Compliance - Requirement</u>
<u>PART 1 - LUFTFAHRT-BUNDESAMT AIRWORTHINESS DIRECTIVES</u>			
82-236		Aileron, elevator and wings - Possibility of water accumulating.	Applicable to aircraft serial numbers up to and including 3619. Compliance required as detailed in AD. Hoffmann Technical Notice 2 also refers.
82-237/2		Inspection of composite skin on the wings.	Applicable to aircraft serial numbers as detailed in AD. Compliance required as detailed in AD. Hoffmann Technical Notice 3 issue 2 also refers.
83-156		Fuel tank - Ascertain cubic capacity.	Applicable to aircraft serial numbers as detailed in AD. Compliance required as detailed in AD. Hoffmann Technical Notice 6 also refers.
83-157/2		Inspection and modification of engine brackets.	Applicable to aircraft serial numbers as detailed in AD. Compliance required as detailed in AD. Hoffmann Technical Notice 7 issue 2 also refers.
84-205		Fuel system - Engine failure due to formation of vapour bubbles in the fuel pump, filter and lines at an ambient temperature of 25°C.	Applicable to aircraft serial numbers up to and including 36143 and 3539. Compliance required as detailed in AD. Hoffmann Technical Notice 11 also refers.

<u>CAA AD No.</u>	<u>Associated Material</u>	<u>Description</u>	<u>Applicability - Compliance - Requirement</u>
85-34		Prohibition of aerobatics including spins.	Applicable to all aircraft serial numbers. Compliance required as detailed in AD. Hoffmann Technical Notice 12 also refers.
85-128/2		Fuel tank - Restriction of fuel feed to engine by deposits in the fuel tank.	Applicable to all aircraft serial numbers up to and including construction year 1984. Compliance required as detailed in AD. Hoffmann Technical Notice 13 also refers.
86-177/3		Wings - Fuselage joint additional bracing.	Applicable to aircraft serial numbers as detailed in AD. Compliance required as detailed in AD. Hoffmann Technical Notice 19 also refers.
87-93		Inspection of front fixing of the horizontal tail/elevator unit.	Applicable to all aircraft serial numbers. Compliance required as detailed in AD. Hoffmann Technical Notice 15 also refers.
87-94		Inspection of shoulder harness fastenings.	Applicable to aircraft serial numbers 3501 to 3539 and 3601 to 36143. Compliance required as detailed in AD. Hoffmann Technical Notice 17 also refers.
88-108		Wings - Measurement differences in the main bolt area.	Applicable to all aircraft serial numbers up to 36268. Compliance required as detailed in AD. Hoffmann Technical Notice 24 also refers.

Issue 1

12 November 1990

### Battery Terminal Failure – GA Aircraft

- 1 There have been a number of reported incidents of loose, melted or detached terminals of batteries in service on GA aircraft.
- 2 In one particular case, a light twin-engined aircraft experienced a fire in the nose compartment on the ground whilst attempting to start an engine. The fire resulted from ignition of hydrogen gas (emitted from the battery) caused by arcing of a loose battery terminal. Upon examination after the incident, the positive battery terminal had become completely detached with the top of the battery badly deformed as a result of the fire. The battery was a Rebat type R35. In addition, Concorde and Gill batteries of the same series have terminals of identical construction and have all been found prone to the same problem.
- 3 Following this incident, the CAA issued a Letter to Operators (LTO No. 795) giving details of the dangers associated with loose battery terminals.
- 4 The terminals are basically square headed brass bolts, tinned and fluxed and placed with thread uppermost in a lead casting assembly. Cables are held on to the terminal post by a wing nut so as to maintain contact between the cable terminal pad and the battery terminal post.
- 5 The FAA have conducted their own investigation with the manufacturers of the batteries and a General Aviation Airworthiness Alert No. AC 43-16 was issued. This alert recommended certain actions as preventative maintenance which is supported by the CAA and are outlined below:–
  - (a) Ensure that before installing any battery into an aircraft, it is the correct model for the installation.
  - (b) Inspect the battery terminal and stud. If it is at all loose or deformed, it should not be installed.
  - (c) Ensure that the battery cable terminal is clean and free from corrosion, oxidation and contamination.

- (d) Ensure that the terminal is correctly positioned and tightened, terminal.
- (e) Ensure the battery terminal post wing nut is correctly tightened (it should not be possible to move the terminal lug by hand).

**CAUTION:** Do not overtighten the terminal post wing nut. Overtightening may result in deformation of the terminal post material which will eventually result in the terminal becoming loose in service.

- 6 Personnel are reminded that the discovery of a potentially hazardous failure condition during maintenance or fault finding may well justify the raising of a Mandatory Occurrence Report (MOR). In the context of this appendix, any broken or detached battery terminals discovered would warrant such a report. Physical evidence should be retained for investigation.
- 7 Appendix No. 21 of this Notice also deals with battery

AIRWORTHINESS NOTICE No. 12  
APPENDIX No. 45

Issue 1

12 November 1990

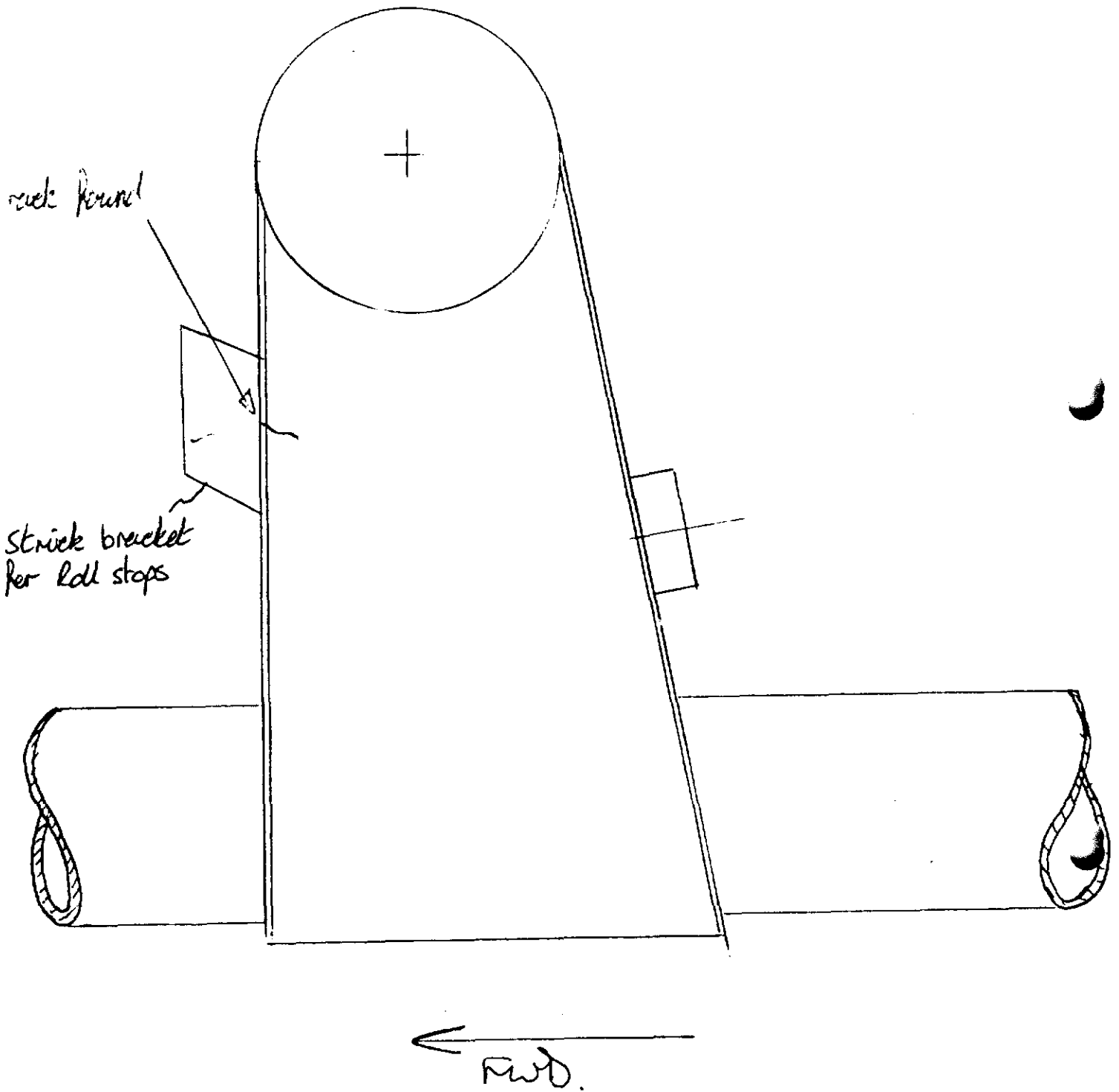
### Aircraft Markings and Placards

- 1 Resulting from an enquiry into an accident, the CAA wishes to draw attention to the importance of the correct positioning and legibility of aircraft markings and placards, especially those relating to emergency situations.
- 2 Operators and maintenance organisations are reminded that all placards, markings, operating instructions, especially those which pertain to emergency equipment and exits, should be inspected periodically to ensure legibility, complement and location.
- 3 The Light Aircraft Maintenance Schedule (LAMS) requires the inspection of placards in Section 7 at Check A, 50 hour, 150 hour and Annual check periods. Where other maintenance schedules do not refer to this subject, action should be taken to revise the schedule as appropriate.

Reported BY: MARC MORLET

2. WILSON COURT FALCKENBERG HANSE.  
EU 14 TEL (0252) 547778

IA ISO ME.



SLINGSBY TWS SWALLOW COCKPIT TORQUE TUBE/YOKE ASSEMBLY  
FOUND CRACKED AS SHOWN ABOVE. NK BGA NO 921.

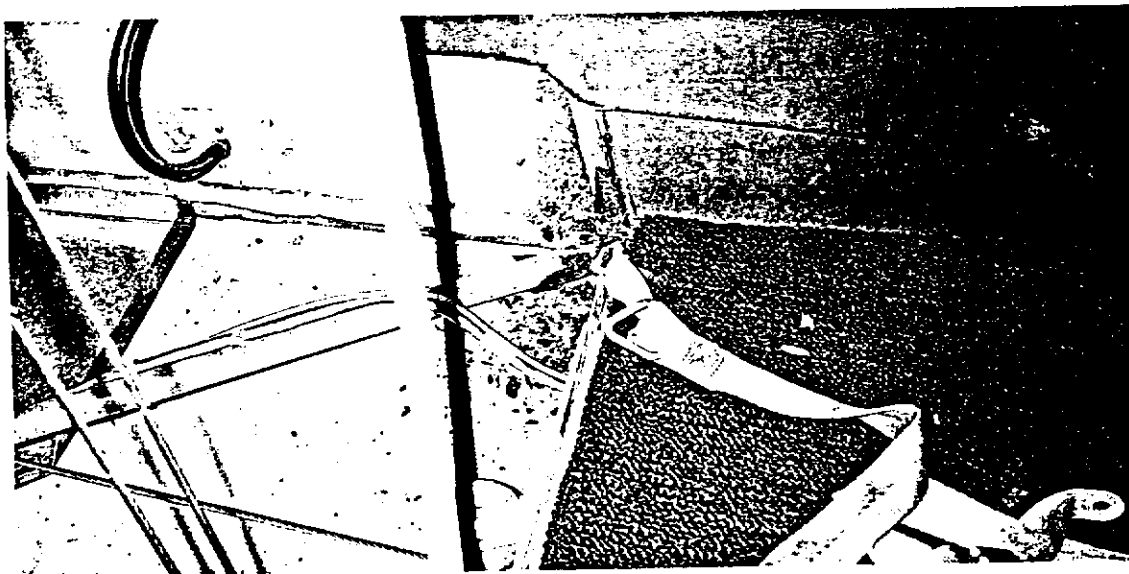
TE:- To remove the torque tube for repair it is necessary to remove the four taper pin in the rear section. New taper pins Part No SP31/L16 are available from LIGHT AERO SPARES LTD, SHEBBEAR, BEAUCORTHY, DEVON EX21 5LR.  
TEL. 040-928-578 and 610.

BGA TWS 11/12/90.

## E2. EXTENSIVE CORROSION

Aircraft Type : Maule M6-235  
Date : July 1990

The aircraft had been out of use for many years and indeed had been stored in the open for a considerable part of this period.



When inspected by a prospective purchaser, extensive corrosion was noted in the fuselage tubes and in many places the wood stringers were found to be rotten and brittle.

CAA Comment.

It seems likely that this incident is a one off caused solely by the aircraft's neglect and exposure.

## E7. WOODEN COMPONENTS

The following is a direct reprint from a Service Difficulty Alert published by Transport Canada.

"Loss of control was recently reported on a JODEL D11 aircraft as a result of failure at the glued joint between the wooden block supporting the aileron pulley and the wing mainspar.

Glued joints used on wooden components of aircraft primary structure may lose strength with time, especially in the presence of excessive moisture. The delamination of plywood and decay of wood from fungi development may also occur.

Transport Canada strongly recommends that builders of all amateur built aircraft which have wooden components in their primary structure perform very thorough annual inspections of these components. The inspection should include checking for deterioration of the wood or glued joint. Structural members which show signs of soft or decaying wood or degraded joints should be repaired prior to further flights".

LIMITATIONS PLACARD

BGA/267/P

B.G A. No. 123 TYPE K49C

CATEGORY: ~~NON AEROBATIC~~/AEROBATIC  
SEMI AEROBATIC/CLOUD FLYING

SPEED LIMITATIONS (Knots)

Auto/Winch ..... Rough Air .....  
Aero Tow ..... VNE .....  
Flaps ..... Gear Down .....

WEIGHT AND C.G. LIMITATIONS

Max. Wt. (dry) 800 Max. Wt. (water) 800  
Empty Wt. 600 Min. Solo Wt. 160  
Max. Solo Wt. 220 Date Weighed .....

NO. Refer to flight manual for full limitations.  
Issued by [Signature] Dated 26/9/90

Faded!!

NON FADING  
PEN. →