

TECHNICAL NEWSHEET

TNS 3/4/83

- 1.0. (a) Airworthiness 'Aggro'. Please add the following to the 1983 'Pink Pages'
- (b) Placarding Please ensure that meaningful placards are legible in all gliders and motor gliders at C. of A. renewal inspections (Ref. item 27 of B.G.A. form 267).
- 1.1. Kal3 Control Stick Insecure. It is no joke when the instructor's stick comes away in his hand at a critical stage of landing in strong winds at 100 ft.! Wing nut was found to be 'not tight'. (Reported by Lasham).
- 1.2. Radio Installation renders Conopy Jettison inoperative. The attached sketch of Pye Bantam installation in a 'Mosquito' may be typical of other installations. (Reported by Jim Riddoch, N. Weald.)
- 1.3. Pirat Tow Release, intermittent failure. The attached sketch demonstrates how a ferrule on the release cable can foul in the pulley assembly. (Reported by Jim Riddoch).
- 1.4. ASK 21. Rudder Pedal Jamming. The attached sketch shows how the nylon tube insert in the rudder pedal assembly can become detached and restrict the rudder travel (Reported by Mynd). Re-secure the nylon tube as required.
- 1.5. GROB/ASTIR CS/ASTIR CS 77/ SPEED ASTIR/TWIN ASTIR ELEVATOR DRIVE FAILURE AT CONTROL HORN.
- The Gliding Federation of Australia report a serious accident resulting from failure of the control horn casting, and require a 'Thorough visual inspection of the horn, removing gel coat and glass as necessary'. (The G.F.A. do not state the hours flown on this machine or the probability of pre-crash damage.) This inspection should be carried out in U.K. a.s.a.p.
- 1.6. ASW 19/20 Control Stops (Ref. TNS 1/83) Where it is not possible to secure the stops by drilling, the discrete introduction of a jubilee-clip as a back-up stop. should be considered.
- 1.7. SF 25 E 'Super Falke' Aileron Restriction. Failure of the bearing assembly supporting the control column assembly below the cockpit floor, can cause partial aileron restriction. The condition of the bearing should be checked at every 50 HR inspection and replaced before its condition results in the balls leaving the cage. Inspection should be carried out a.s.a.p.

PART 2 GENERAL MATTERS

- 2.1. GROB ASTIR AND TWIN ASTIR Series gliders - Extension of service life. TM 315-15/TM 308-18 extends life to 6000 hours subject to compliance with an inspection programme at 300 Hrs. (Details from manufacturer/agent)
- 2.2. GROB CLUB ASTIR II/STANDARD ASTIR II/Exchange of canopy hinge. TM 306-21 makes available improved type hinge (Details from manufacturer or agent).
- 2.3. GROB G.102 / MK3 Modification to fixed wheel mounting structure. B.G.A. Mod/Astir/1/83 devised by Doug Jones (Sketch attached) is approved for installation if required by owner/operators.
- 2.4. BLANIK REINFORCING PLATE - Tail skid attachment. B.G. A. modification Blanik/1/83 (Sketch attached) devised by David Schofield, Swindon G.C. is approved as a repair scheme.

2.5. General Aviation Safety Information. The following relevant extracts from G.A.S.I.L.s. are attached:-

- (a) Glider Parachute - Incorrectly packed.
- (b) Metal Propeller Blade Tip Failure (Stone damage).
- (c) Penalties for ILLEGAL FLYING (4 cases).
- (d) Foreign Matter in Fuel Systems (4 cases).
- (e) CARB-ICING (Analysis of Engine Types).

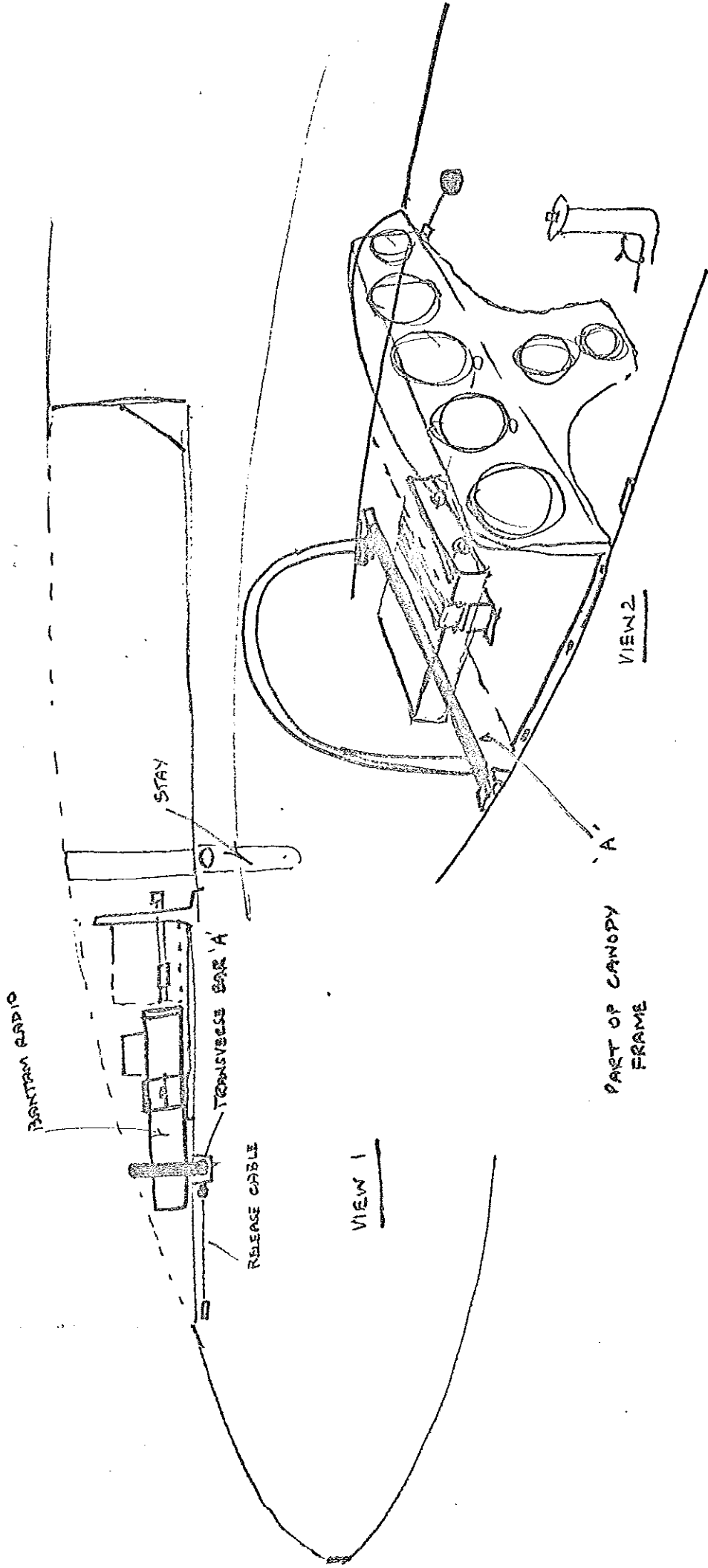
Please draw your own conclusions from these incidents and introduce remedial actions to prevent such occurrences at your gliding club.

R.B. STRATTON

CHIEF TECHNICAL OFFICER.

TNS 8/4/83

Radio Installation For Mosquito Canopy Jettison.



PART OF CANOPY  
FRAME

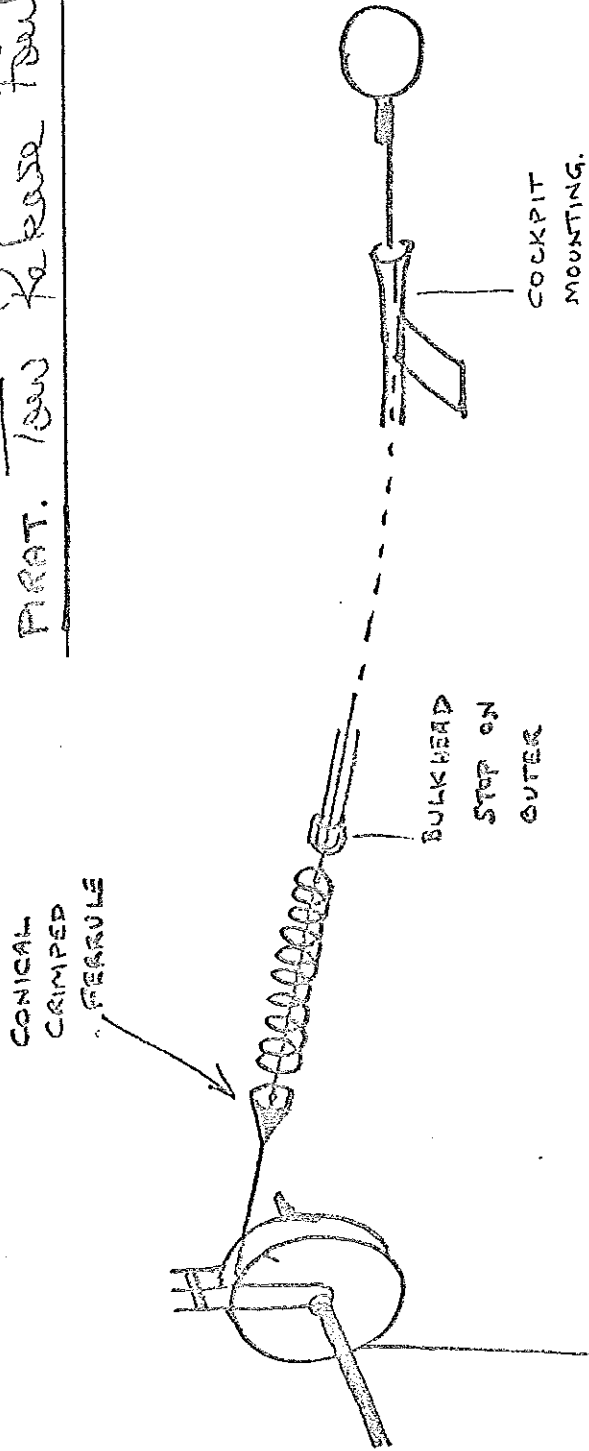
VIEW 1

VIEW 2

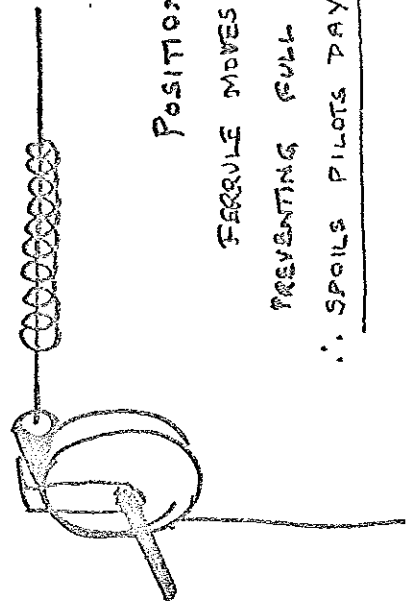
MOSQUITO - 2244

CANOPY JETTISON - DETAIL VIEW 1 & 2.

PARAT. Tow Release Fowl.



STATIC VIEW I



VIEW 2.  
DETAIL.

POSITION OF FERRULE AFTER OPERATE AND RELEASE :-

FERRULE MOVES ALONG CABLE AND STAYS CABLE IN PULLEY, SOMETIMES PREVENTING FULL CLOSURE OF OTFUR ; OR PREVENTING RELEASE ( WIRE LAUNCH ) :-

∴ SPOILS PILOTS PAY. !

TNS/3/7/83.  
ASK 21 (F)

The British Gliding Association,  
Technical Committee,  
Kimberley House,  
Vaughan Way,  
Leicester.

183, Watling St. South,  
Church Stretton,  
Shropshire SY6 7BJ

15th February 1983

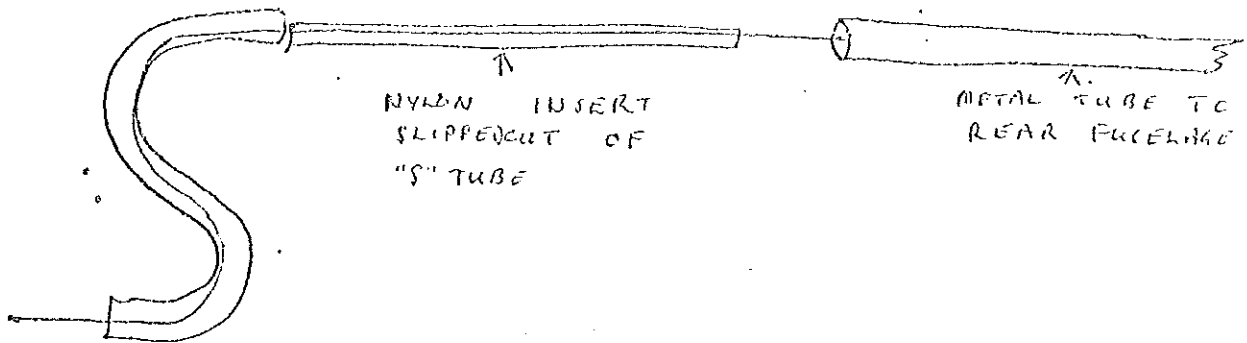
Dear Sirs,

ASK 21 Rudder Pedal Jamming

During the pre-take off checks it was discovered that the nylon tube insert, in the front rudder pedal 'S' tube had slipped out onto the exposed cable, thus preventing full pedal movement.

I have notified Peter Watford of the problem and he will be advising me of the best remedy.

This problem may only get noticed when the pedals are adjusted fully backward (i.e. short pilots beware)



Steve Allsop,  
Midland Gliding Club Ltd.

*S. Allsop*

9. PARACHUTE INCORRECTLY PACKED

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Equipment : Irvin EB62 Glider Pilot's Parachute

The parachute was found to have been incorrectly re-packed. The manufacturer has now correctly re-packed the parachute noting that:-

- a) the auxiliary (pilot) parachute did not conform to the design standard as approved by the CAA
- b) the line between the main canopy apex and the auxiliary parachute was incorrect and overstrength
- c) the kicker plate was a cardboard beer mat
- d) the rigging lines had been stowed using elastic bands in place of the correct webbing loops fitted in the pack.

The manufacturer considers that these deviations would not necessarily have caused a total parachute malfunction but could have caused various problems which could in turn have delayed or prevented an absolutely clean opening, and which could have been prejudicial during a low altitude escape. The matter has been taken up with the packing establishment and will be publicised via the British Gliding Association and British Parachute Association magazines. It is briefly covered here in case any other pilots are using this parachute, e.g. for flight testing or aerobatics.

Aircraft : Piper PA28R-200 Cherokee  
Date : December 1982  
Engine : Lycoming IO-360

PROP - BLADE FAILURE.

The aircraft was cruising at 1500ft and 135kts when about four inches of the propeller tip broke off causing severe vibration. A successful forced landing was made in a field, without damage to the aircraft. The Hartzell HC-C2YK-1 propeller had flown 483 hours since new.

CAA Comment:

It is thought that the failure may have been due to propagation from stone damage at the rear edge of the blade. The blade is being given metallurgical examination.

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8. PENALTIES FOR ILLEGAL FLYING

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In GASIL 5/81 item 12 we highlighted a number of court cases which had been brought against pilots who broke the law. The following have occurred in the last year.

- a) 15 cases of Low Flying (Rule 5 of the Rules of the Air) resulting in pilots paying fines and costs ranging from £85 to £400, the average being £250. One of these involved a pilot who flew under the Humber Bridge.
- b) Four cases brought under ANO Article 19 relating to Flight Crew Licence privileges included offences such as IFR flight without an instrument rating, carriage of passengers at night without a night rating and illegal public transport. The fines ranged from £150 to £700, averaging £330.
- c) A pilot who landed at an aerodrome where the Runway Visual Range was 75 metres in contravention of his Company's Operations Manual limitations of 200 metres, was fined a total of £325.
- d) For flying within 3000 ft of an assembly of more than 1000 people without CAA permission, a pilot was fined £300.

6. FOREIGN MATTER IN FUEL SYSTEMS

Aircraft : Topsy Nipper      Registration G-ENIE  
 Date : July 1982  
 Notifiable Accident near Plymouth

About two minutes after completing some aerobatic manoeuvres the aircraft was flying straight and level when the engine lost power and stopped after about 30 seconds. During the forced landing some damage was done to the aircraft. It was found that the carburettor float chamber gasket had been sealed with a compound which was softened by petrol. Small deposits of the compound had blocked the carburettor jets causing engine failure.

Aircraft : Supermarine S5 Replica      Registration G-BDFF  
 Date : September 1982  
 Notifiable Accident at Thorpe Water Park, Chertsey

During a flying display the engine failed. After a steep sideslip to reach a small area of water just ahead the aircraft cart-wheeled on impact and broke up. The pilot was recovered by the rescue boat. A small piece of silicone rubber in the fuel tank had blocked the tank outlet pipe.

Aircraft : Nord 854S      Registration G-BJLB  
 Date : July 1982  
 Notifiable Accident at Coleford, Forest of Dean

The aircraft was flying from Badminton to Monmouth after restoration work including fitment of fuel system components from a 1966 Rallye aircraft. A loss of power occurred resulting in a forced landing on a golf course. Several small trees were encountered causing the aircraft to nose over.

Inspection revealed a blockage, due to insect debris, of the fuel line at the entry to the filter bowl. The blockage had apparently occurred during the six weeks taken for the restoration work.

Aircraft : Jodel D1050 Ambassador      Registration G-AZWF  
 Date : July 1982  
 Notifiable Accident at Woodhouse Eaves airstrip, Leicestershire

Shortly after lift-off from the 500 metre strip the engine lost power and as the terrain ahead was unsuitable for a forced landing, the pilot closed the throttle and landed back on the strip. The aircraft was badly damaged when it over-ran into a hedge.

It is reported that the fuel filter bowl contained dirt and fragments of vegetable matter. The source could not be determined.

CAA Comment:

These four accidents within a three month period all due to fuel system blockages, vividly illustrate the importance of ensuring that fuel systems are clear of any contaminants, no matter how small. This is partly because the fuel flow to low-powered engines requires only a comparatively small diameter pipe and filter system. Small particles are thus of a greater consequence. If a tank or filter drain tap does not start to flow immediately it may be due to sediment, and the whole system should be very carefully checked and if necessary cleaned.

Many cars now incorporate an in-line disposable fuel filter. This author renewed such a filter which looked "as new" after less than 12000 miles. When the filter had dried out it was found to contain enough deposits to cover a 50 pence piece. This should be borne in mind when using MOGAS in light aircraft.

A book "Light Aircraft Inspection" by J E Heywood (a CAA Airworthiness Division Inspection Surveyor) covers this and many other aspects. It contains over 75 photographs of the sort of problems that may be encountered by the owner or pilot of a light aircraft.

6. CARBURETTOR ICING

GASL 2/83.

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An FAA Report (DOT/FAA/CT-82/44 of June 1982) has examined the 329 cases of carburettor icing accidents/incidents in the period 1976 to 1980. The distribution by flight phase was as shown in Table 1.

Table 1

Phase of Flight *	Number of Cases
Taxying	2
Take-off	66
Climb to Cruise	6
Cruise	159
Descent	6
Approach	59
Landing	14
Touch & Go	2
Simulated Forced Landing	4
Practice Manoeuver	1
Unknown	10

\* CAA Note: The definition of these phases is not known; take off may include initial climb.

The aircraft types most frequently involved (5 or more cases) are as shown in Table 2

Table 2

Aircraft	Engine	Number of Cases	Aircraft on <sup>+</sup> Register at 1.1.76	Rate <sup>+</sup> per 10,000 aircraft
Cessna 150 Series	Continental O-200	60	16,000	37
" 152 Series	Lycoming O-235	9	-	-
" 172 A to E	Continental O-300	12	19,000	13
" 172 K to M	" O-320	13	2,600	31
" 180 Series	" O-470	8	8,100	35
" 182 Series	" "	28	-	-
Champion 7AC	" A65	6	1,190	42
Gulfstream American AAL	Lycoming O-235	5	4,400	14
Piper J3 Cub	Continental A65	6	3,200	19
" PA18-150	Lycoming O-320	6	1,900	47
" PA25-235 Pawnee	" O-540	9	7,100	20
" PA28-140 Cherokee	" O-320	14	-	-
Other		153		

+ CAA Note: The CAA has added these two columns.

The report's Conclusions include the following:-

"Existing standard cockpit instrumentation is adequate to detect carburettor ice formation. Aircraft/engine performance degradation will provide warning indications with sufficient time to correct deteriorating conditions prior to engine stoppage.

Pilot education during student training phase and biennial flight review needs to stress carburettor icing problems, detection indications and proper corrective procedures as specified by aircraft manufacturer in the approved aircraft flight manuals".

CAA Comment:

Similar data to that in Table 2 for the UK from 1976-1981 is shown in Table 3.

Table 3

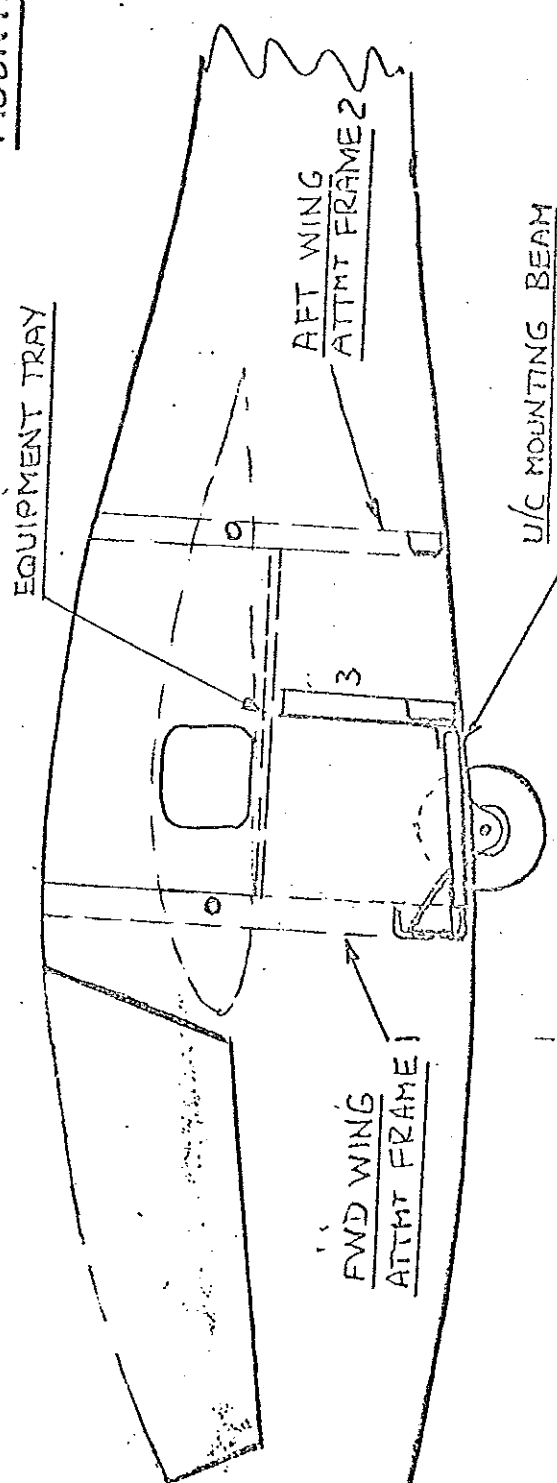
Aircraft	Engine	Number of Cases	Aircraft on Register at 1.1.82	Rate per 10,000 aircraft
Cessna 150	Continental O-200 & O-240	10	335	298
Cessna 172	Continental O-300 & O-320	4	274	146
SOCATA Rallye	Continental O-200, Lycoming O-320	5	113	442
Tipsy Nipper	Volkswagen Conversion	4	12	-
Piper PA28 Cherokee	Lycoming O-320	4	287	139

The pink AIC on Piston Engine Carburettor Icing is in the course of revision.

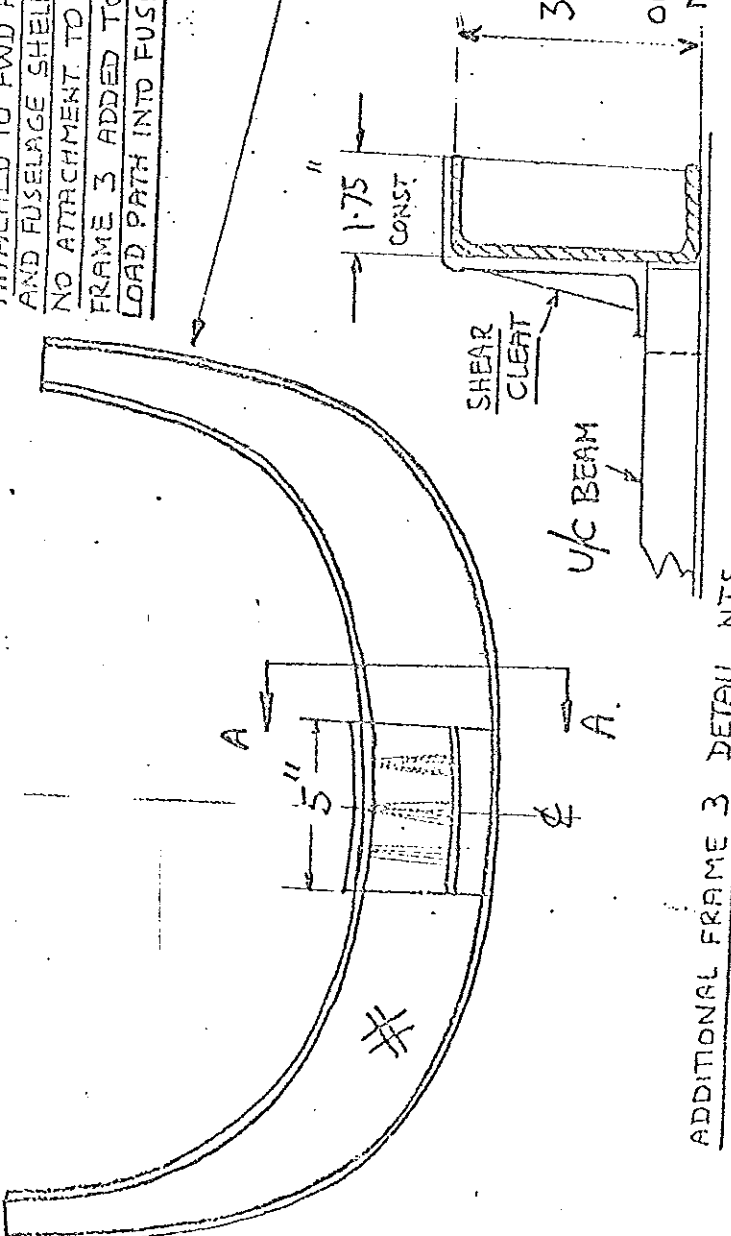


GROB G102 MK3. MODIFICATION TO FIXED WHEEL MOUNTING STRUCTURE

: B.G.A. Rev. A STA A/123



U/C MOUNTING BEAM  
ATTACHED TO FWD FRAME 1  
AND FUSELAGE SHELL. NOTE  
NO ATTACHMENT TO AFT FRAME 2  
FRAME 3 ADDED TO PROVIDE  
LOAD PATH INTO FUSELAGE SHELL



FRAME LAY UP. 5 LAMS INTERGLAS 92125 (t=0.08)  
± 45° CORNERS REINFORCED WITH 6 ROWINGS  
SILENKA 051-2400 TEX. SHEAR CLEAT  
5 LAMS 92125 0°-50° LAMINATE WITH  
EPICOTE 162 - EPICURE 113 RESIN SYSTEM.

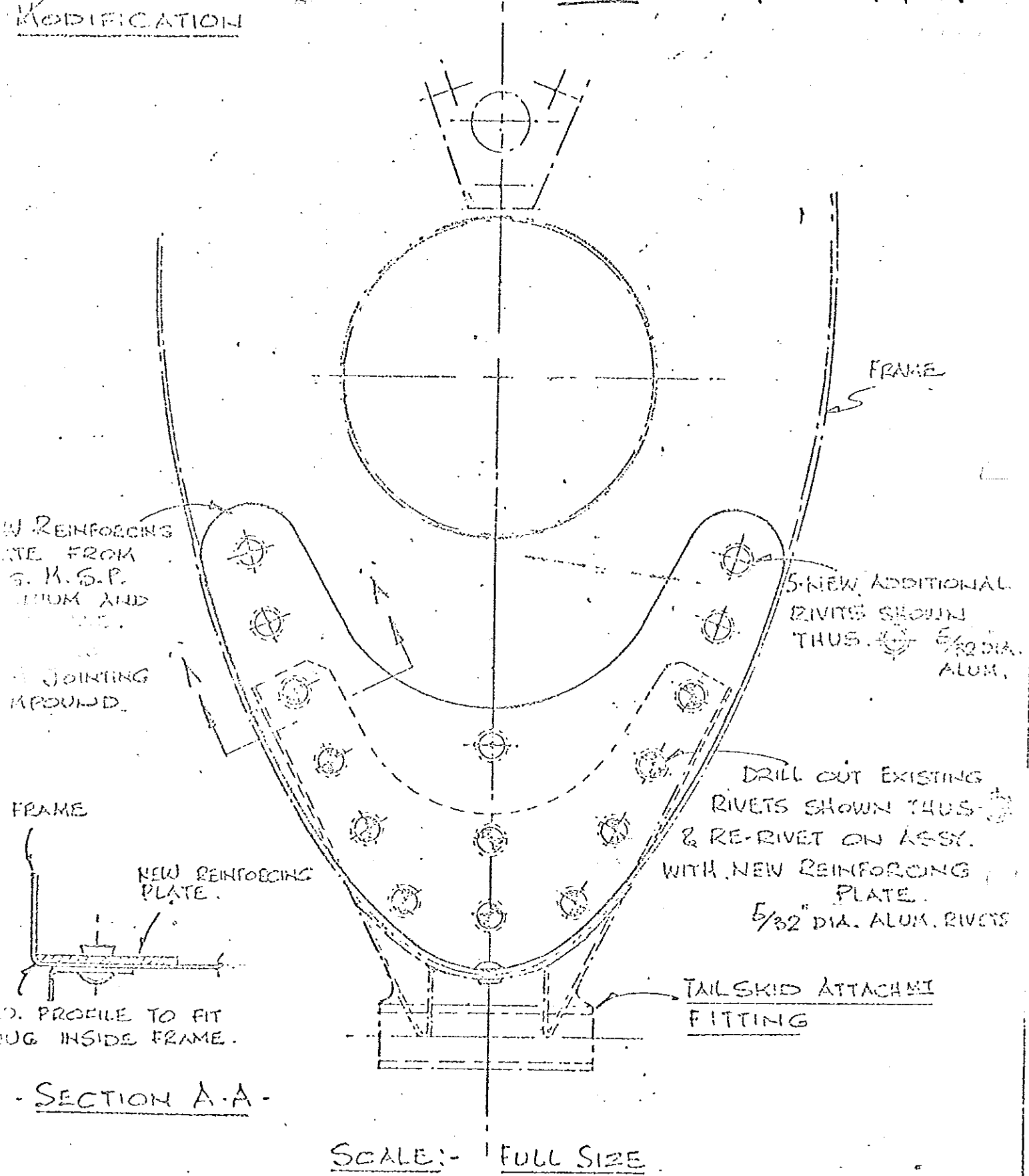
ADDITIONAL FRAME 3 DETAIL NTS.

SECTION A-A

SK/JDJ/GI  
 T.P. JONES  
 7 0 0 Z

BLANK SAILPLANE  
MODIFICATION

MOD BGA/Blank/1/88



DETAIL OF REINFORCING PLATE AT FUSELAGE  
FRAME TAILSKID ATTACHMENT FITTING ON  
BLANK SAILPLANE

B.G.A. Technical Committee

Technical Newsheet

TNS 1:2:83

PART 1: Airworthiness Aggro

- a) The 1983 B.G.A. (pink) compendium of Defect and MANDATORY inspections is enclosed herewith. Please destroy all previous copies!
- b) When making C of A renewal submissions Form 267 (Item 53) requires inspectors to check compliance with the above document.
- 1.1 T.65 Vega. Tailplane front tongue spigot cracked - (sketch attached). (Reported by Martin Breen, and reported by him to S.E.L.)
- 1.2 KA2 Elevator "D" box glue failure etc., (sketch attached). Reported by Martyn Davies. KA2's should be inspected throughout for glue deterioration.
- 1.3 ASW 15 and 15B. ELEVATOR ACTUATOR BELLCRANK. AD 82-221 (attached) requires re-inforcement of the actuator bellcrank in accordance with Schleicher Technical Note 22. (Mailed to owners 23/12/82.)
- 1.4 IS 28B2. AIRBRAKE PUSH/PULL ROD "SNAP" Connection, located above and behind rear seat, unlocked/unscrewed due to tab-washer failure. (Reported by P.J. Hudson.)
- 1.5 ASW 20. Flap Push-Rod Stop. The flap travel stop on some ASW 20's may not be positively located and may slip. Later models are rivetted (or bolted). Early models should be modified as per sketch attached. (Reported by Tim MacFadyen.)
- 1.6 DG 200. Excessive Friction in Rudder Circuit. Nylon conduits have become detached from the rear fuselage (reported by E.A. Henman).

