B.G.A. Technical Committee
TNS 2/3/82

Part I Airworthiness "aggro" (Please add to the 1982 Blue pages).

1.1 Torso - Restraint harness - (Repair/replacement or modification.) The attached extract from CASI 1/82 illustrates the catastrophic consequences of improperly modifying harness straps. (Refer also to TNS 1/82).

1.2 ASTIR Speed Brake - Paddle lever-arm fractured. A case has been seen of the paddle operating lever being cracked abover the pivot point in the wing cutaway. (Hambletons G.C.)

1.3 Bocian front rudder pedal mounting fractured to the point of failure. (Reported by Angus G.C.)

1.4 Pirat - Air brake, control bracket in centre section cracked around bolts securing to centre section bulkhead. (Reported by Hambletons G.C.)

1.5 KA 7 - Wing - Root Control system cracked at Root-end attachment. (Repeat of TNS 9/78). Re-manufacture in 14 swg or repair. (Reported by D. Harket. Carlton Moor G.C.)

1.6 VEGA (T.65). Fin spar carrying Rudder hinge and elevator drive, detached from skin. (Reported by Tim Macfadyen - (Sketch attached) and reported to Slingsby Engineering).

1.7 KA 8 - Control Bracket mounting in sentre section (Sketch attached), cracked. Repair by Welding. (Reported by R. Jarvis S.G.C.)

1.8 ASW 15 & 15B. Elevator Actuator Bell-crank possible fatigue-failure in flight. Copy herewith and mailed to owners. Inspect/Replace as required.

Part II General Matters

2.1 IS 28M2 - The following Bulletins have been issued (6/4/82):-

EO-5	Supplementary Information on Landing gear maintenance.
CR-6	Strengthening Undercarriage.
CR-7	Undercarriage Micro-switch provisions.

2.2 Grob Series TM 315-6 increases fatigue-life from 3000 to 4000 hours by inspection, and thereafter by 1000 hour intervals to 6000 hours.

2.3 400 x 4 tyres. Production has been terminated by Continental and supplies will become short. If any alternatives become available, please advise C.T.O. (B.G.A. have asked Watts Tyre Company to investigate supplies in liaison with Ken Fripp, Southdown Aero Services - Lasham).

/2 .....

3.0 Tugs and Motor-Gliders

3.1 Motor-Glider C of A renewals will continue to be for one year (Private Category). C.A.A. charges will rise from £24 per 500 kgs to £26 on 1st April, 1982. (Please forward LEGIBLE (Top) copies of form 267/267M/ Flight Test Reports).

3.2 LIGHT AIRCRAFT MAINTENANCE SCHEDULES (LAMS) - 3 year (50/100 hour and Annual Check Cycles). It is a requirement of the C of A, which otherwise may become invalidated, that the check cycle and associated Log Book Entries are completed. Owner/Operators/Club Technical Officers please ensure that the proper procedures are followed. In particular that the "annual" inspection is complied with. - APPLIES TO BOTH TUGS & MOTOR GLIDERS.

3.3 Motor Glider Renewals (3 years) B.G.A. Approved Bases (DAI/8378/73). Seventeen proformas were returned (Ref TNS/1/82 para. 3.8) and were discussed with CAA at a meeting on 5/3/82. Several proprietary operators, as well as clubs, who are known to maintain motor-gliders, have failed to respond! An audit of motor-glider files at the B.G.A. offices showed that there are 10 pik 20E's and 60 odd motor-gliders within the B.G.A. Maintenance net-work!

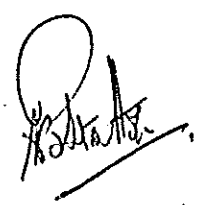
3.4 New Types - Type certificated by CAA and now within B.G.A. DAI/8378/73 approval; please add Grob A.109 (subject to UK modifications being incorporated).

3.5 General Aviation Safety Information Leaflet 2/82. Extracts herewith include:

a) Rodents destroy ASI pipe-lines
b) Dirty Air Filter causes engine malfunction
c) Loss of canopy - worn canopy latches

3.6 "MOGAS" A draft CAA Notice giving some degree of approval for MOGAS in some specific aircraft types, (mostly geriatric) has been approved in principle, by the Airworthiness Requirements Board.

In Australia, the Gliding Federation in conjunction with AOPA, have circulated a depersonalised proforma, and uncovered 25,000 hours of Mogas operation over several years, with no problems other than heat-soak on the ground in ambients up to 38°C.



R.B. Stratton
Chief Technical Officer
British Gliding Association

Sheet 1
Number of sheets : 3.

Technical Note no.21
ASW 15/6

Segelflugzeugbau
6416 Poppenhausen

INS/3/82.
Mailed to OWNERS 23/2/82.

AD/87-265/JANUARY 21-82

Subject :

1. Inspection of the elevator actuator bellcrank.
2. Amendment to the Operations Manual.

Effectivity :

All ASW 15, ASW 15 B including existing modifications into motorgliders.

Accomplishment :

By March 1, 1982.

Reason :

With an ASW 15 the bellcrank actuating the elevator failed in flight (see attached sketch). Luckily the pilot could save himself by parachute. An inspection of the bellcrank showed that an older crack most likely caused by a hard landing some years ago resulted in fatigue failure of the bellcrank.

Instructions :

1. The elevator actuator bellcrank must be inspected for cracks. To do so the rudder has to be disconnected from the fin, as the inspection is possible through a hole of the fin spar (see attached sketch). The inspection area is not directly visible. However, with the finger-nail a major crack can be felt. Smaller cracks may be found by using a mirror and a small light which is fixed to a small strip of wood or a piece of wire.
If no cracks are found, the rudder can be rigged again to the fin and safetied.

2. If cracks are found, the bellcrank must be exchanged against a new one, i.e. a bellcrank according to drawing 151.35.1011 (showing the correction note "TM 21 dated 24-11-81"). For carrying out this job the Repair Instruction "A" for the ASW 15 is to be used.

3. A copy of the inspection report must be sent to the manufacturer.

ASW 15, ASW 15 B
Technical Note no.21

Alexander Schleicher
Segelflugzeugbau
6416 Poppenhausen

4. The Operations Manual pages 22 (ASW 15) or 27 (ASW 15 B) must be exchanged against pages 22A or 27A respectively. This measure is to guarantee that this inspection of the bellcrank will be repeated with each annual inspection and after hard load stresses (hard landings, crashes, etc.).

5. On page 3 of the Flight and Operations Manual the amendment to the Operations Manual as stated under the above point 4. must be certified.

Material : See drawing 151.35.1011 with the correction note "TM 21 dated 24-11-81".

Weight and Balance : Negligible.

Notes : If a new bellcrank is installed as mentioned under point 3 of the section "Instructions", it is recommended to install simultaneously the stronger plywood stiffeners of the ASW 15 B (see Repair Instruction "A").

Drawings : For this Technical Note 21 the drawings 150/151.34 M.11 * been corrected and marked with the correction note "TM 21 dated 24-11-81".

* and 151.35.1011 have

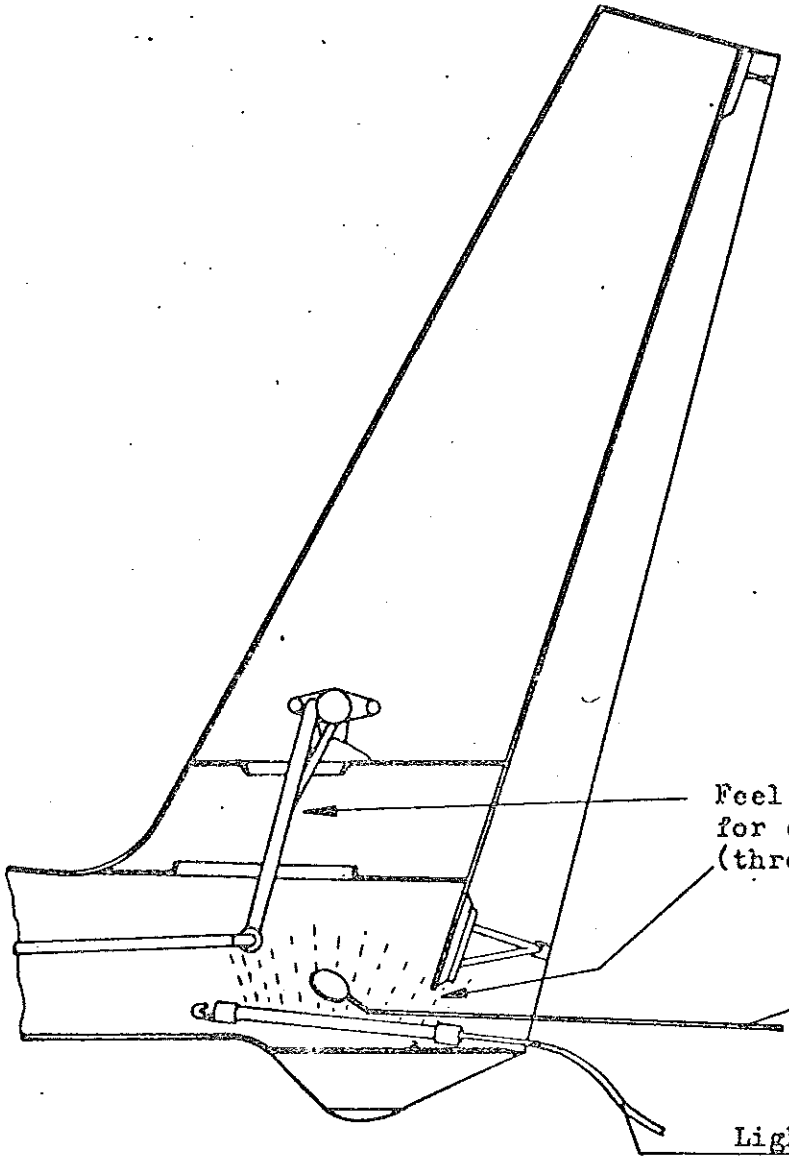
Poppenhausen, November 24, 1981

ALEXANDER SCHLEICHER
Segelflugzeugbau

Gerhard Waibel.

The German original of this Technical Note is approved by LBA under the date of December 9, 1981, and is signed by SCHMALJOHANN. Translation has been done by best knowledge and judgement, in any case of doubt the German original is authoritative.

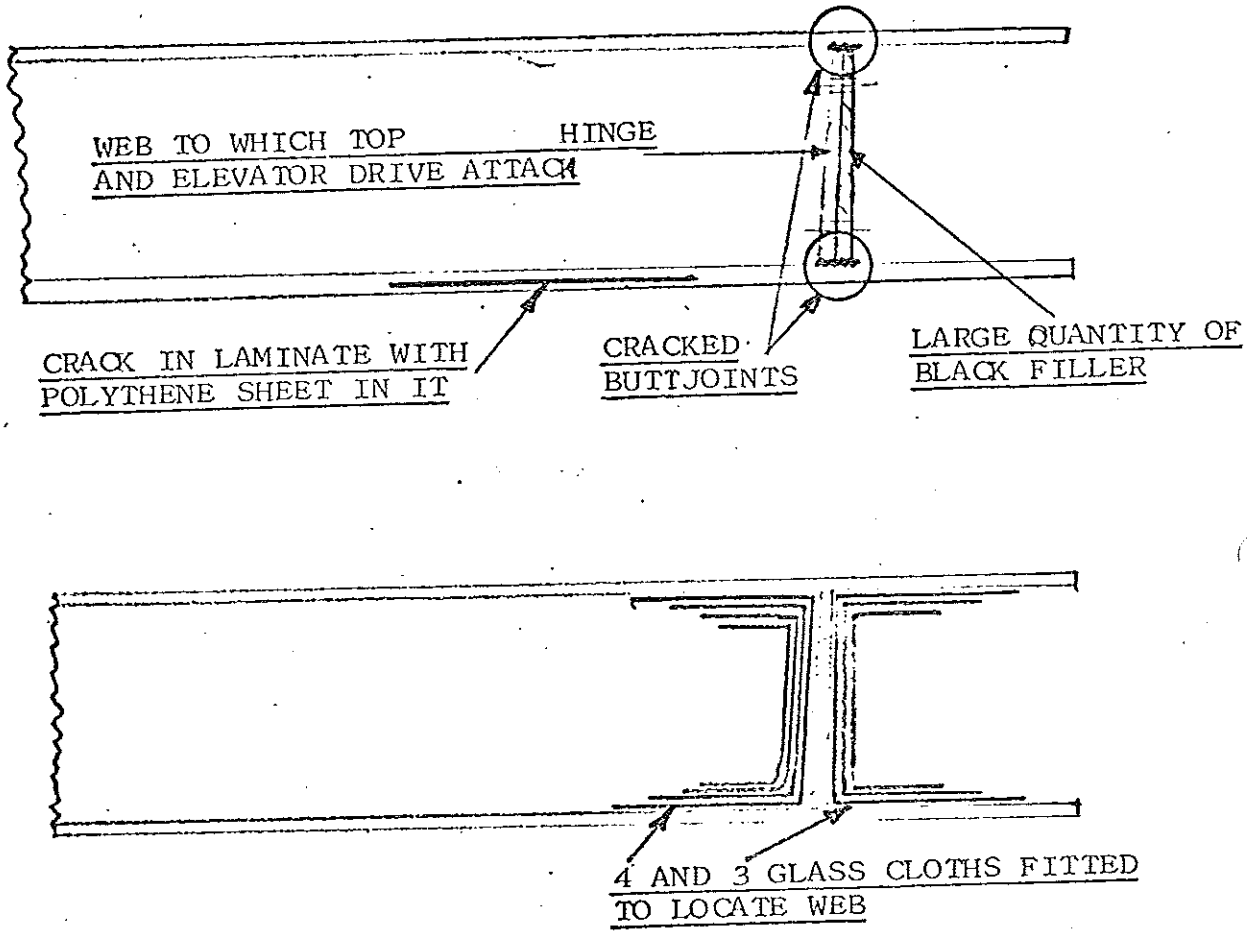
Alexander Schleicher
Segelflugzeugbau
6416 Poppenhausen



TNS/2/82

VEGA BGA 2611 FEBRUARY 1982

DIAGRAMATIC VIEWS LOOKING DOWN ON THE REAR TOP OF THE FIN BEFORE AND AFTER REPAIR

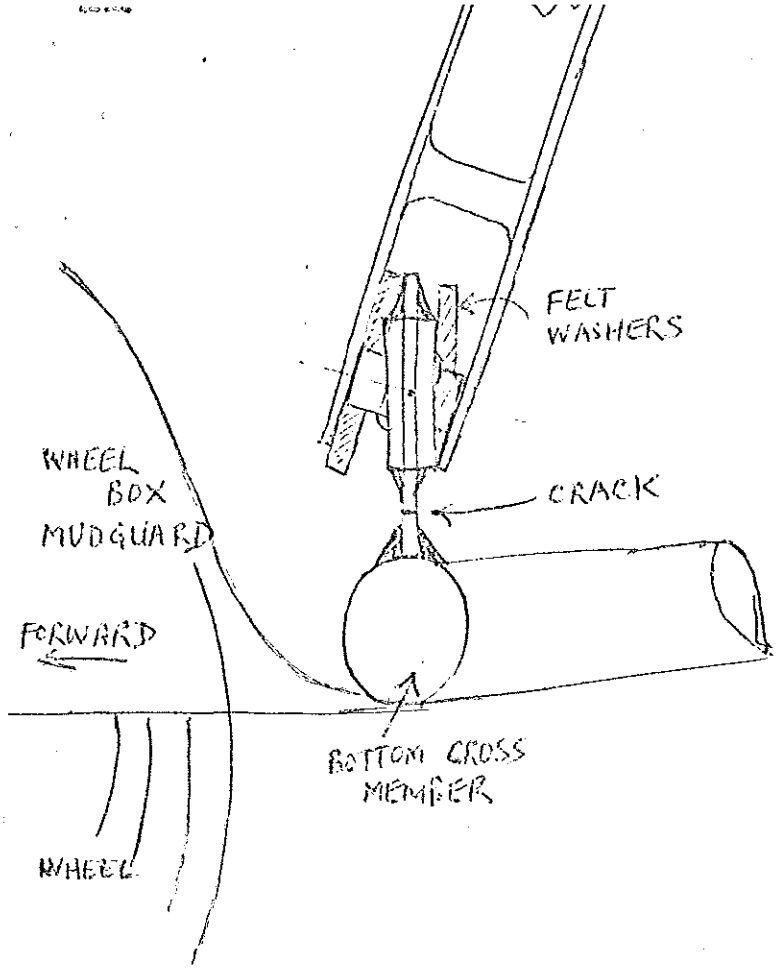


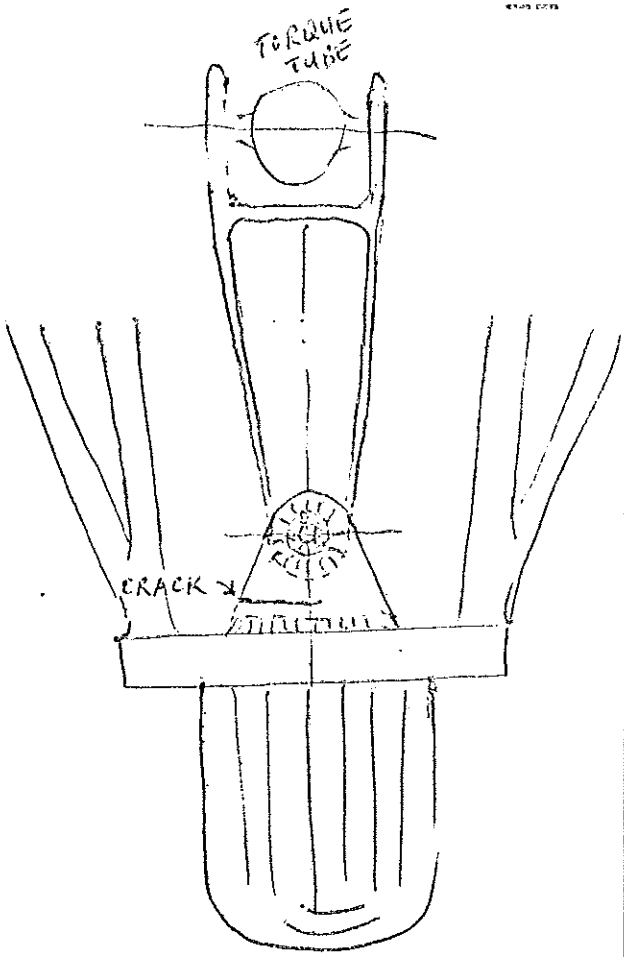
The web to which the top rudder hinge and elevator drive are bolted was cracked from the fin sides. A quantity of filler was removed from its rear face, the area cleaned up, and 7 laminates of 10 oz (INTERGLASS 92125) bidirectional cloth layed on at 45°. The bolt holes were re-drilled and all was reassembled with filler to correctly position the fitting.

A 1" x 3" piece of polythene was removed from the centre of the fin laminate, see sketch. The crack was glued up with Epicoat/Epicure.

T.E. MacFadyen

T.E.MACFADYEN
1/C/322





VIEW FROM AFT OF WHEEL

POSITION OF CRACK ON BEARING SUPPORT BRACKET ON FUSELAGE OF KA 8b BGA 2083

RJARVIS IAOMME 11·2·82

B.G.A. Motor-Glider Maintenance

1. Club/Workshop Location .....

Address .....

.....

Contact Telephone Number .....

2. Name of BGA Inspector(s) .....

.....

Or CAA Licenced Engineer(s) .....

.....

(Quote BGA/CAA Inspection Numbers) .....

.....

3. Types of Motor Glider .....

14. ASI FAILURE DUE TO MICE

P/E

Aircraft : Piper PA30 Twin Comanche
Date : December 1981

Theaircraft had been left for several days in a remote hangar on a disused aerodrome. During the next take-off there was no indication on the ASI. It was found that the main rubber ASI pressure pipe had been eaten through by mice. The owner was aware of the problem and had placed water trays around each landing gear leg but the mice still found a way in.

CAA Comment:
We have also heard of another aircraft owner who found that squirrels had stored many pounds of acorns inside the wings of his aircraft. It required removal of fabric and a partial re-cover to get them all out. It would seem that in some circustances it may be necessary to obtain the services of a cat - CAA Approved of course!

15. DIRTY AIR FILTER BELIEVED TO HAVE CAUSED SEVERE POWER LOSS

P/E

Aircraft : Gulfstream American AA5B
Date : December 1981
Engine : Lycoming O-360

While flying at 1500ft using cruise rpm of 2500 the engine coughed violently. A check was made for carburettor icing, which proved negative. About 15 seconds later the engine started to lose power. The pilot opened the throttle fully, set rich mixture and carburettor heat to HOT, electric pump to ON and checked that both magnetos were on. A MAYDAY call was made to Southampton requesting a priority landing. Heading and range with approval to climb were given. It was found that after slowing to 95kts a rate of climb of 150ft per minute could be obtained. A downwind landing was made in order to avoid flying over the built up area as the engine was missing very badly.

Engineering inspection and ground run did not show any sign of power loss. The fuel filter, oil filter, compressions and magneto timing were checked. Inspection of the air filter gauze to AD 81-24-02 did not reveal any broken wires. However, the air filter was found to be very dirty, so it was renewed. After a further ground run, and test flight, the aicraft returned to base with no problems.

16. LOSS OF CANOPY

P/E

Aircraft : CP301B Emeraude, Registration G-AXXC
Date : September 1981
Notifiable Accident at Courton, N Yorkshire

could apply to Gliders | motor-Gliders.

While taking off from a private strip the aircraft struck a bump at about 40kts. This caused the locking catch on the sliding canopy to release, and the canopy slid back and struck the pilot's head. During the ensuing abandoned take-off the aircraft over-ran on the wet grass striking the boundary fence and pitching onto its nose. Inspection revealed excessive wear on the canopy locking catches. The aircraft had flown 1961 hours.

CAA Comment:
It is suggested that the owners/operators of this type of aircraft examine the canopy catches for excessive wear. Turbulence could cause loss of the canopy in flight.

2. SEAT FRAME FAILURE

E

Aircraft : Robin R1180T
Date : October 1981

The left-hand pilot's seat frame was found to have failed at the holes where the rear seat webbing clips attach. This meant that the seat back was only attached by the upholstery. The pilot had reported that the seat felt "sloppy". The aircraft's hours are not known.

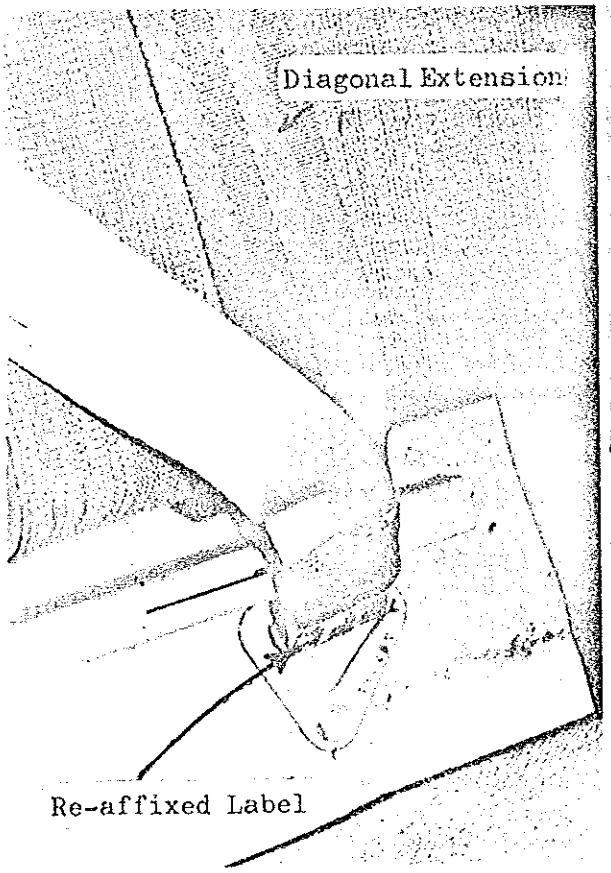
10. FAILURE OF IMPROPERLY MODIFIED UPPER-TORSO RESTRAINT

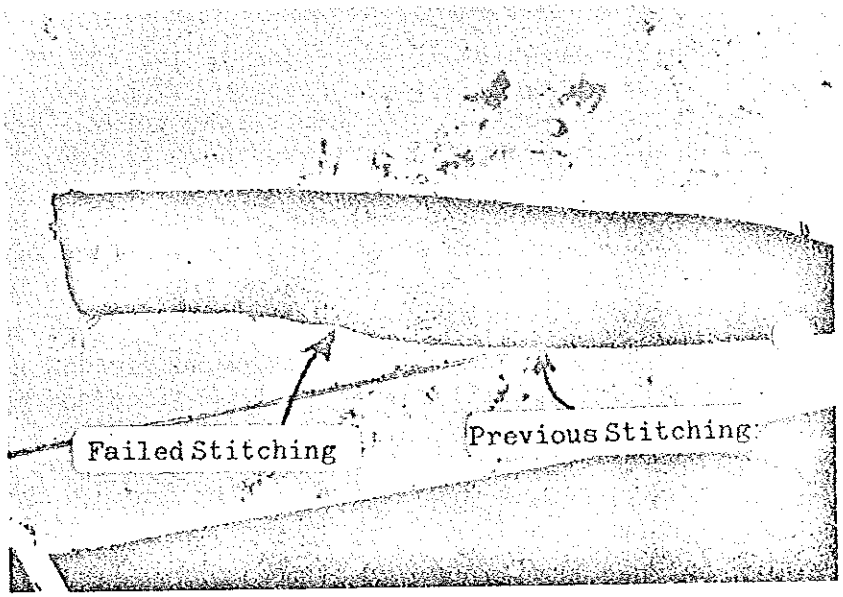
P/E

Aircraft : Beech 23 Musketeer (Applicable to all aircraft)
Date : September 1981 Registration G-AVVU
Notifiable Accident near Goodwood (Chichester)

While approaching the aerodrome to re-join the circuit, the engine failed possibly due to improper fuel selection. A forced landing was made in a field during which the aircraft probably stalled and struck the ground very heavily in a nose down attitude breaking the fuselage in half. The pilot received very severe head, facial and eye injuries as a result of striking the instrument panel because the diagonal upper torso restraint had failed.

Investigation showed that the lap strap material was of a different colour from the diagonal strap. The diagonal strap had been added by firstly passing it through the airframe mounting fitting and then sewing it to the lap strap. The stitching had failed, because the thread used was weaker than that normally used for this purpose and the stitch pattern was imprecise. Nearby were signs of other stitching indicating a previous application. One of the lap strap manufacturer's labels had been re-affixed onto the end of the diagonal strap.





CAA Comment:
Any modifications of this sort are quite incorrect and if any other aircraft have been altered in this way their owners/operators should obtain and fit the proper equipment - you may only need it once but it has got to be effective.

9. SEAT FRAME FAILURE

E

Aircraft : Robin R1180T
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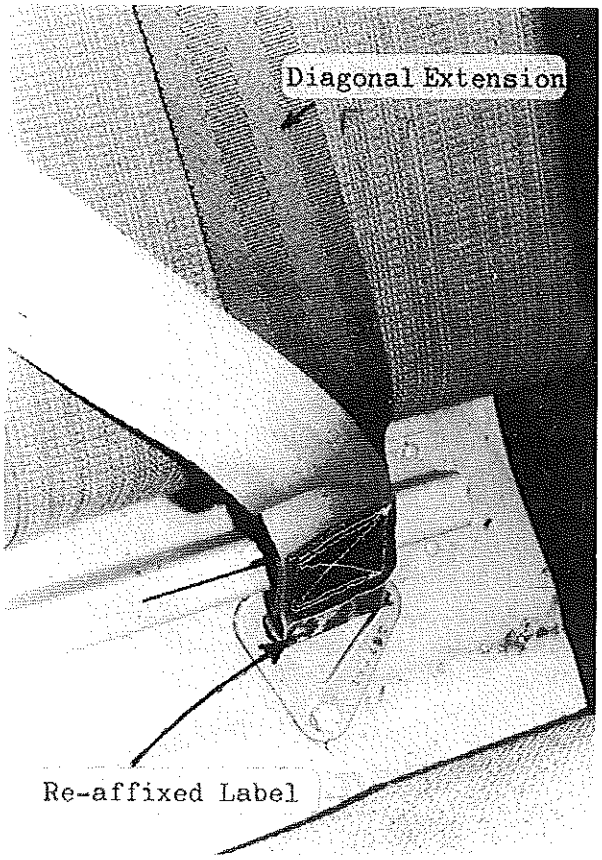

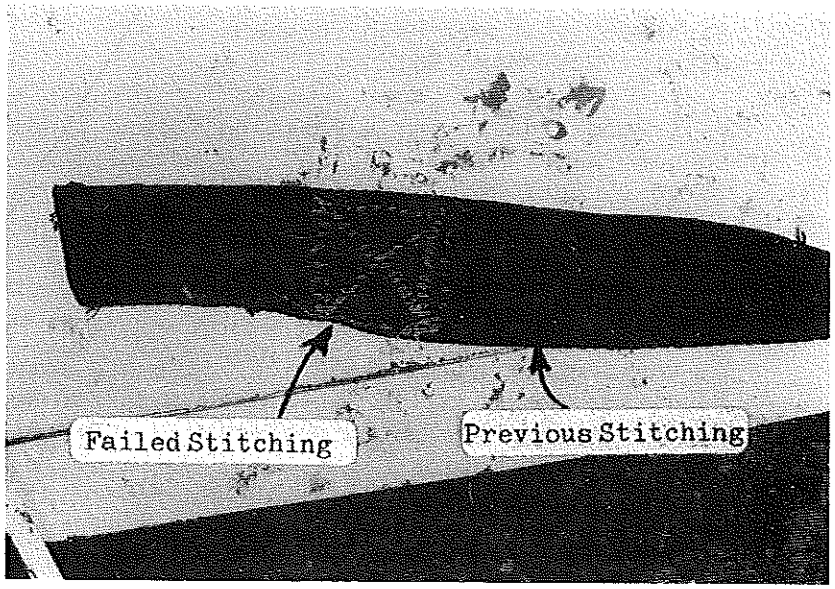

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11. HIGH WINDS DAMAGED RUDDER SYSTEM P/E

Aircraft : Beech E90 King Air
Date : November 1981

During the pre-flight inspection the pilot found torn metal on the rudder hinge cut-out. On removing the tail cone it was found that two of the three bolts that attach the rudder collar (P/N 50-600016) to the rudder bellcrank (P/N 50-5243271) had sheared. The damage was due to the aircraft having been parked in high winds without the rudder control lock fitted. If the pilot had not noticed the torn metal none of the other pre-flight checks would have revealed any problems.

CAA Comment:
Control damage after high winds has been reported a number of times during the last year on various aircraft types, thus highlighting the need for control surface locks.

ELECTRICAL SMOKE AND FUMES

12. Burnt Radio Equipment P/E

Aircraft : Gulfstream American AA5
Date : October 1981

When approaching the destination aerodrome after a short cross country flight a pungent burning smell was noticed in the cockpit. The canopy was opened and an urgent landing made about three minutes later. The circuit breaker from COMM 2 was found to have tripped. When re-set the smell returned. A massive burnt area was found in the audio-modulator region of the King KX 175B set, which has been returned to the manufacturer for investigation.

13. Electrical Connector Burnt P/E

Aircraft : Piper PA38 Tomahawk
Date : May 1981

While positioning for a practice forced landing on the aerodrome the stall warning sounded and remained on. It was established that it was an incorrect warning. About 10 to 15 seconds after the warning sounded there was a strong smell of burning and the cockpit started to fill with smoke. The pilot shut-down the engine and electrical system and made a glide landing. During the landing roll the doors were opened, and when stationary clear of the runway both occupants left the aircraft. There were no further signs of fire.

It was found that an electrical fire had occurred in the No 2 wing to fuselage connector resulting in cable and connector damage including disconnection of some cables because the solder had melted. The black plastic AMP connector carries fuel quantity, navigation light, stall warning, pitot heat, and strobe light cables. The pitot heat and navigation lights were off at the time of the incident. The source of overheating was in the shell carrying the pins (P/N 206705-2).

CAA Comment:
The CAA wrote to the manufacturer who replied that this was the first incident of this sort that they were aware of, and believed it to be an isolated case. The operator of the particular aircraft has checked his other aircraft and found no signs of overheating. Other operators are advised to check these connectors, particularly since the aircraft type has suffered from problems with fuel tank vent hoses causing fuel fumes in the wing. (See GASILs 9/80 item 44, 10/80 item 37 and 3/81 item 26).

CAA General Comment:
Quite a number of aircraft do not have a DV window, and the doors/canopy cannot be opened in flight. In the event of smoke and fumes (possibly toxic) which are believed to be of electrical origin it may be advisable to switch off the electrical master switch at once, since the circuit breaker could be slow to operate. (Note: some flaps and landing gear are electrically operated)

17. SLIGHT ASYMMETRIC FLAP [P/E]

Aircraft : Piper PA30 Twin Comanche
Date : December 1981

The student pilot was carrying out gear and flap lowering and retraction, when he complained that the aircraft was pulling heavily to the left. It was established that the right-hand flap had stuck in the half down position while the left-hand one had retracted fully. Further use of the flap selector failed to retract the flap. The instructor landed the aircraft, with a little help from the rudder trim and slightly asymmetric power in order to reduce the control force, using full flap as the short runway was grass. Both flaps came down and after landing both retracted fully.

The system was inspected and no fault could be found, nor could the malfunctions be repeated. All the lubrication points were greased and during further flying no problem was found. Prior to the flight the aircraft had been parked outside, without flying for some months, and the lack of use was probably a factor.

The reporter states that the aicraft performed well and was easily controllable. He felt that with full flap on one side and none on the other the aircraft would still be controllable. However, it is clear that a safe margin above the stall is vital, and the effects of any further fault such as engine failure could be unpredictable.

CAA Comment:
Where utilisation is considerably reduced (due to the economic recession or other reasons) all personnel should be on the look-out for problems of this sort.

18. RETURN TO SERVICE OF AIRCRAFT PARTS RECOVERED AFTER ACCIDENTS/INCIDENTS - LETTER TO OPERATORS 461A [E]

The Civil Aviation Authority issued Letter to Operators No 461, under the same title as shown above, on 9 November 1981. To clear up a possible ambiguity in LTO 461, this LTO is re-issued as letter to Operators No 461A and supersedes that issued on the 9 November.

The Civil Aviation Authority has evidence that components, parts, and accessories of primary airworthiness importance, (including highly stressed rotating parts) have been released to service after having been recovered from aircraft involved in accidents or incidents which may have produced excessive local inertia loadings exceeding design limits. These components, which may not manifest either visual damage or distortion, may still have had their original design reserve factors degraded.

Such items are sometimes obtained un-released and un-identified, and in "as is - where is" condition, from insurers and other sources. Re-installation of these items can constitute a serious airworthiness hazard. These parts require competent assessment and inspection in the light of adequate knowledge of the circumstances of the accident, subsequent storage and transport conditions, and with evidence of previous operational history obtained from valid airworthiness records, before overhaul and re-installation can be considered.

It is not acceptable for these items to be repaired or overhauled to standard procedures appropriate to parts removed for overhaul following normal service life, and then to be returned to service under cover of a CAA Approved Certificate.

If the information in the Manufacturers Manual, or other technical publications, is insufficient to enable a proper overhaul or repair assessment to be made, (together with any particular check or tests required prior to return to service), then the manufacturer must be consulted for guidance. If the manufacturer provides the additional information, and the item can be shown to meet this, then it may be returned to service.

Where there is a difficulty in classifying the airworthiness significance of an item, the question should be referred to the Airworthiness Division, Aircraft Maintenance and Approvals Section. This Letter to Operators is circulated to holders of approved maintenance schedules representative bodies, importing agencies and to all CAA Offices. Recipients are requested to publicise the subject of the LTO as widely as possible. In due course this Letter to Operators will be the subject of a CAA Airworthiness Notice.

19. USE OF PAINT STRIPPERS [E]

The use of unsuitable materials and techniques during the stripping and repainting of aircraft has been highlighted on a number of occasions and readers' attention is drawn to Airworthiness Notice No 12 Appendix No 22 Issue 1 dated 20 March 1978 which points out the damage and potential hazards that can arise.

GASIL/2/82

P/E

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Could Apply to Gliders/Motor-Gliders,

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