

BRITISH GLIDING ASSOCIATION

BGA TECHNICAL COMMITTEE

TECHNICAL NEWSHEET TNS 11/12/93

- PART 1** **Airworthiness.** This is the last issue for 1993. The more significant Airworthiness items will be transferred to the 1994 BGA Summary.
- 1.1. **Puchacz Undercarriage Bungee Deterioration** - if allowed to develop into failure, can cause damage. Bungees should be regularly inspected and replaced as required (however difficult to do so). Southdown G.C.
 - 1.2. **Schleicher ASK21 - Elevator Push Rod - Inspection.** A/D 93-186 herewith, required action before 31/3/94.
 - 1.3. **Puchacz** - Belly Hook hang-up at the launch point. The Rudder Skirt round the hook retained the rings, after release. Kent G.C.
 - 1.4. **HK36 Super Dimona (S.L.M.G.).** A/D 74 herewith, requires action.
 - 1.5. **SZD-30 PIRAT "Inspection of Glued Joints on Rectangular Wing Portion".** Bulletin BS-033/39 requires **IMMEDIATE ACTION.** (BGA have no details).
 - 1.6. **VEGA Undercarriage Link Rod Failure.** Sketch is self explanatory. (D.A. Wilson - Prudhoe).
 - 1.7. **BG 135 - (Fatal Accident).** Tailplane not correctly installed and locked.
 - 1.8. **K13 - Speed Limitations.** To correct any anomalies, the following currently apply :-
 - a) Vne - 108 Knots
 - b) Winch/Auto-Tow - 60K (BGA allowance).
 - 1.9. **Weak Links (Tost Type).** The correct rating is dependent upon the shackle pins being free to rotate at either end. If you bolt them "solid" then you have no weak-link protection!
 - 1.10. **Pirat Rudder Cables** - Rudder Cable guards over forward pulleys must be checked to ensure that cables cannot "escape". Cable condition and pulley bearings should be checked. (First reported 1977. Recurring. J. Graham Northumbria G.C.).
 - 1.11. **Bendix Key Ignition Switches (Tugs & SLMG's)** Extract from GASIL (herewith) highlights the problem.
 - 1.12. **Gypsy Engines - Low Oil Pressure.** GASIL photo identifies one possible cause on a glider towing Chipmunk!

- 1.13. Puchacz Rudder Cables - detached at rear rudder pedals. Stiff-Nut backed off and cable separated, on the ground at Deeside G.C. Castellated nuts and split pins will be substituted.

In view of the classical spinning characteristics of the Puchacz, inspection (and if necessary modification) of these cable attachments to prevent disconnection should be actioned A.S.A.P.

- 1.14. T.21 (Sedbergh) Aileron Interconnection between Control Sticks - failed at the thread. First reported in TNS 6/83! Surrey Hills G.C.
- 1.15. Energy Absorbing Cushions. Have you actioned the advice given by BGA, to minimise spinal injuries.
- 1.16. Pilot Support "Packaging". Have you removed all "Soft" material which might otherwise be used to support the pilots back, where such "adjustment" is required to gain access to all the cockpit controls? (Derived from fatal accident report).
- 1.17. PERSONAL PARACHUTE PROBLEMS. (CHEST STRAPS). Illustrations from RAFGSA Report are gratefully acknowledged, and may save your life!
- 1.18. Rudder Cable Failure - at recently Swaged end on Carman JP 15/36. Cable end swaging is a precision task, requiring knowledge and skill!!

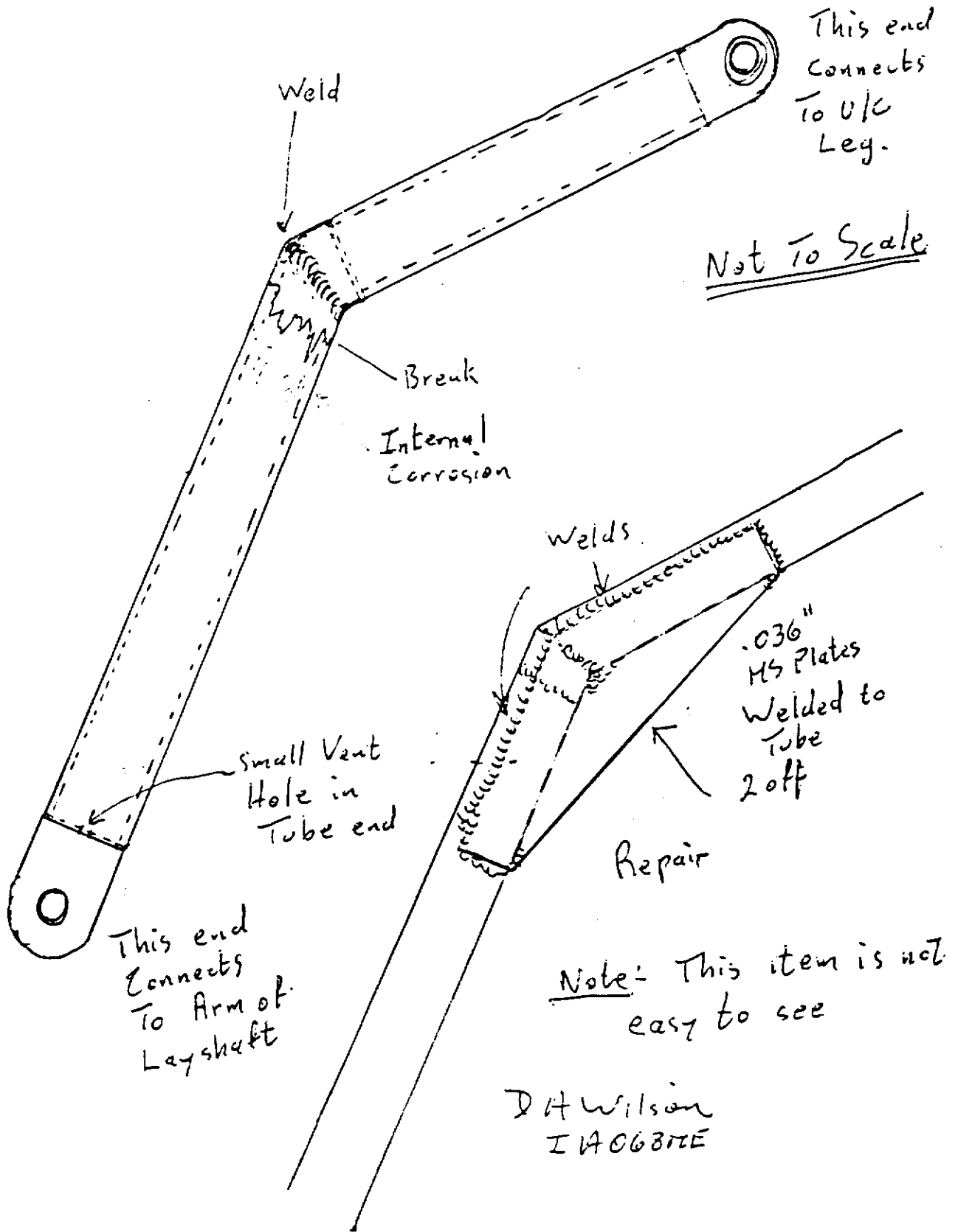
PART 2 GENERAL INFORMATION

- 2.1. Tow Rope Damages Vehicle at Booker. Do you have minimum approach profiles for your tug operations, where they may conflict with persons and vehicles?
- 2.2. CAA Accident Reporting Criteria. Extract from GASIL spells out what you must, legally, report.
- 2.3. Winch Driver Protection. (Ex ATC Twin-Drum). The grills in the floor of the Cab should be secured and covered to prevent flailing cable debris impacting and injuring the driver. (Incident reported by Enstone Eagles G.C.).
- 2.4. Have You Renewed your BGA Inspection Approval and Insurance Indemnity, which expired last October?

HAPPY CHRISTMAS AND A MORE PROSPEROUS NEW YEAR

Dick Stratton
Chief Technical Officer

Vega Undercarriage Link Rod.



VERA U/C Rod.

TNS 11/12/93



Luftfahrt-Bundesamt
-AD-Department-

INS 11/12/93
Airworthiness Directive

*In case of any difficulty, reference should be made
to the German original issue*

93-186 Schleicher

Date of issue: 15.09.1993

Affected sailplanes:

German Type Certificate No.: 339

SCHLEICHER

ASK 21

- Series: ASK 21

- S/No's.: 21001 up to 21205

- except those which have already been modified according to Technical Note No. 11

Subject:

Inspection of elevator pushrod

Reason:

Some cases with sailplane types of other manufacturers have been reported where the elevator pushrod showed partly heavy corrosion under especially unfavorable conditions. As a provisional measure in view of flight safety this incident moves us to require an inspection of the elevator pushrods on the ASK 21 sailplanes, i.e. only on those units which have not yet been modified to the automatic elevator connection as per Technical Note No. 11

Action:

Inspection / Corrosion check of elevator pushrod - if necessary replace by a new one in accordance with Alexander Schleicher Technical Note.

Compliance:

Action must be accomplished with the next annual C. of A. inspection, but not later than March 31, 1994

Technical publication of the manufacturer:

Alexander Schleicher Technical Note No. 26 dated July 01, 1993 which becomes herewith part of this AD and may be obtained from Messrs.

Alexander Schleicher GmbH & Co.
Segelflugzeugbau

D - 36163 Poppenhausen

Federal Republic of Germany

Accomplishment and log book entry:

Action to be accomplished by an approved service station and to be checked and entered in the log by a licensed inspector.

REPORTABLE ACCIDENTS

P/E

(This item appeared in the October 1993 GASIL. However, some typographical errors were subsequently discovered which need correction. Readers may wish to paste this replacement page in their copy of GASIL. Alternatively, a club notice board or Operations' Manual might be suitable place.)

It has become clear, that some people are not aware of the circumstances in which they should report aircraft accidents in accordance with the Civil Aviation (Investigation of Air Accidents) Regulations 1989.

The important point to understand is that a **reportable accident** must be reported to the Air Accident Investigation Branch (AAIB) using either the telephone number 0252 510300 during normal hours or 071 276 6000 which is a 24 hour number.

So the question arises what is a "reportable accident"? This is clearly defined in CAP393 - Air Navigation: the Order and Regulations; Section 8/3 defines a Reportable Accident as follows:

"It is an occurrence associated with the operation of an aircraft which takes place between the time when any person boards the aircraft with the intention of flight and such time as persons have disembarked therefrom in which -

- a) any person suffers death or serious injury while in or upon the aircraft or by direct contact with any part of the aircraft (including any part which has become detached from the aircraft) or by direct exposure to jet blast, except when the death or serious injury is from natural causes, is self inflicted or is inflicted by other persons or when the death or serious injury is suffered by a stowaway

hiding outside the areas normally available in flight to the passengers and members of the crew of the aircraft, or

- b) the aircraft incurs damage or structural failure, other than:
 - i) engine failure or damage where the damage is limited to the engine, its cowling or accessories, or
 - ii) damage limited to propellers, wing tips, antennae, tyres, brakes, fairings, small dents or punctured holes in the aircraft skin,

which adversely affects its structural strength, performance or flight characteristics and which would normally require major repair or replacement of the affected component, or

- c) the aircraft is missing or is completely inaccessible."

It can therefore be seen that some thought is required before launching into any reporting procedure. Does it fulfil the criteria noted above to be a reportable accident? If it does then it should be reported without fail and never forget that you are not allowed to move the aircraft from its accident site until you have been cleared to do so by the AAIB. Even if this means that the runway remains blocked, the aircraft must not be moved until permission is given.

If the incident is not a reportable

accident within the criteria above, then serious consideration should be given to making an Occurrence Report to the CAA. Ideally, this should be done using the Occurrence Reporting Form, however if this is not available, then a letter will suffice. The value of reporting to the CAA incidents which do not qualify under the reportable accident criteria is that there may well be some safety message which the CAA can discover from your misfortune which can be passed on for the benefits of others.

Whose responsibility is it to report a reportable accident? Again this is made quite clear in CAP393, Section 8/5 (paragraph 5(1)). It is the duty of the commander of the aircraft involved at the time of the accident, or if he is killed or incapacitated, then the operator of the aircraft and in the case of the accident occurring on or near to an aerodrome, the aerodrome authority shall report the accident to the AAIB as quickly as possible. In addition, if the reportable accident occurs in or over the United Kingdom, you must also inform the local police authorities. In addition, and this will also apply to accidents which are classed as non-reportable, you may also be required to give immediate notice to your Insurers and also any relevant airport authorities if they are not already aware of it.

Finally, GASIL hopes that the above information will never be needed by any of its readers, but should an accident occur, then it is important that the procedure is followed.

**Airworthiness Directive
No. 74**

Affected Aircrafts: HK36 R "Super Dimona" and
HK36 "Super Dimona" Powered Sailplane

Subject: 1: Exhaust System for HK36 R "Super Dimona"
Serial Number 36302 through 36323 inclusive
2: Airbrake System for HK36 R and HK36 "Super Dimona"
for all Serial Numbers

Reason: to 1: Excessive corrosion may result in exceeding carbon
monoxide concentration.
to 2: Operation experiences shows that excessive handforces
during braking could deform air brake torque tube.

Action: See Service Bulletin issued and obtainable from HOAC -Austria,
N.A. Ottostraße 5, A-2700 Wr.Neustadt.
The Service Bulletins becomes herewith part of this AD.

to 1: Service Bulletin No. 33 issued Juli 15, 1993
to 2: Service Bulletin No. 34 issued Juli 15, 1993

Compliance: First actions have to be accomplished before next flight.
Follow Service Bulletin for further compliance.

**Accomplishment and
log book entry:** The required actions have to be accomplished by HOAC-Austria,
or an licensed person. A log book entry should be made.

4. BENDIX IGNITION SWITCH - KEY ACTUATED TYPE

P/E

Extract from *Feedback* published by Transport Canada.

"A review of the SDR database indicates that reports are still being received about Bendix 'key actuated' type magneto switches. In many cases, although the switch was in the OFF position the key could be removed, yet the switch would not ground (disable) the magneto. If the propeller was then hand-turned and a 'hot' magneto condition existed, the engine could fire and cause injury to someone or damage to property.

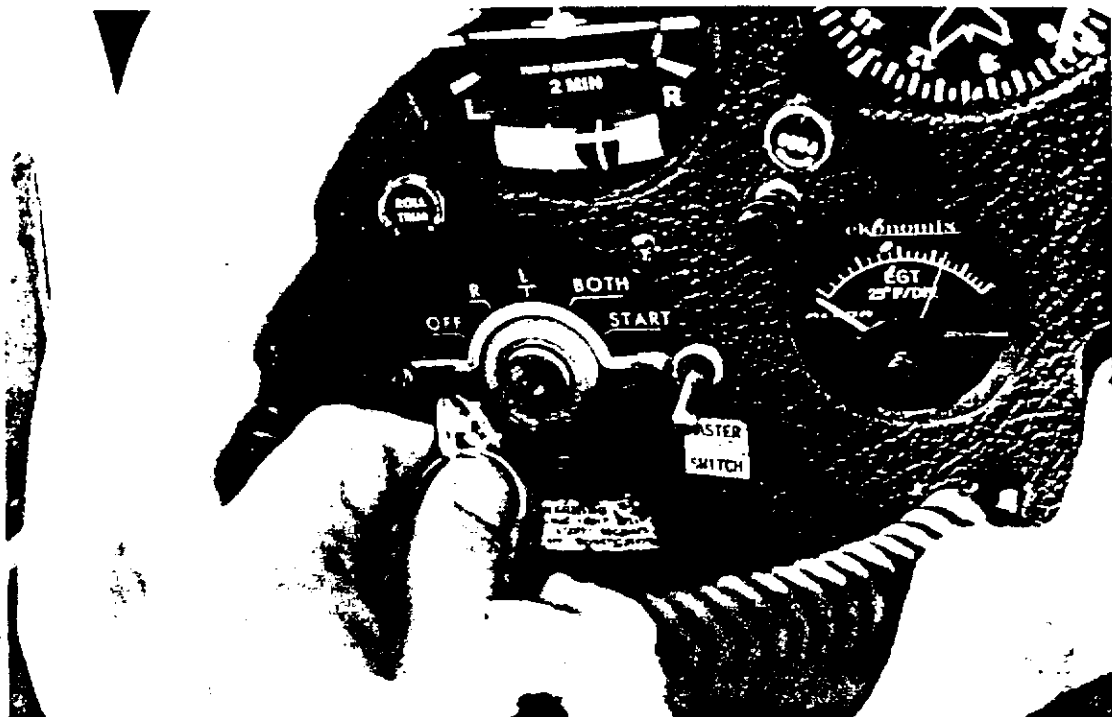
FAA AD 76-07-12 and its related Bendix Service Bulletin 583, as

well as Bendix SB 615, all address the issue. Although none of these seem to have corrected or stopped the problem, it would be advantageous to revisit these documents and check your aircraft for magneto switch service difficulties.

Some other areas to check, beyond what is called for in the above documents, include the following: date code, Bendix logo, key marking of the correct type (is it really a Bendix switch and not, for example, a Gerdes). Keys which have been cut on

the open market may not have the pronounced stop device, which prevents keys from being removed from any switch position. If you have more than one key, do a functional and visual check on them all. Finally, do not hang a bunch of other keys or other items on the key chain as it puts undue pressure on the tumbler system.

Transport Canada is very interested in receiving SDRs if any further problems relating to this issue are encountered."



CAA COMMENT:

GASIL Editor decided to check an aircraft which he flies regularly and, with no effort at all, the key could be removed from any position, as the photograph shows. The aircraft concerned had flown less than 70 hours

since the Airworthiness Directive mentioned in the Canadian item was complied with. Fortunately, in this case, the aircraft was due for maintenance the following day and a replacement Bendix

switch, at considerable expense, was fitted which returned the aircraft to its airworthy status.

HAVE YOU CHECKED THE AIRCRAFT YOU FLY?

5. OIL PRESSURE INDICATIONS

P

In the July edition of GASIL, a pilot of a Piper Navajo aircraft was praised for his meticulous observation of oil pressure gauges since this gave him an early warning of a problem and his prompt actions probably saved the engine. A gliding club has subsequently submitted the following item.

Aircraft type : DHC1 Chipmunk
 Date : August 1993
 Engine type : Gipsy Major 10

The pilot had noted that the oil pressure was slightly lower than usual and consequently grounded the aircraft pending further investigation. During extensive investigation of the engine by an overhaul company, it was noticed that there was more back-lash (fore and aft

movement of the crankshaft) than was normal at the front end of the engine but that such movement was not observed at the other end of the crankshaft. Opening up the engine and removing the big-end caps revealed that the crankshaft had broken in two across one of the

big-end journals. The photograph gives a graphic illustration of the problem.

Apart from low oil pressure, no other indications were displayed by the engine of the magnitude of the damage.



CAA COMMENT:

Once again, sensible appreciation of the information that instruments are giving to the

pilot prevented even more catastrophic damage to the

engine, and possibly to the aircraft and its occupants.

6. CRACKED TAIL PLANE LEADING EDGE

P/E

Aircraft type : Cessna 152
 Date : May 1993

The aircraft was carefully pre-flighted prior to the flight and a routine training flight was undertaken. Just prior to leaving the aircraft to return to the clubhouse, the instructor noticed a crack, approximately 1½ inches

long with 3 or 4 smaller cracks leading from it, on the right-hand tail plane leading edge, approximately 6 inches from the tail plane root.

An engineer inspected the

damage and concluded that it was most likely caused by the incorrect ground handling of the aircraft. The cracks were stop-drilled and a standard patch repair was carried out and the aircraft returned to service. The flying club operations manual

Continued ...

PARACHUTE PROBLEMS.

FIGURE 5 MARTIN BAKER HANDLE FITTED TO AN RO PARACHUTE

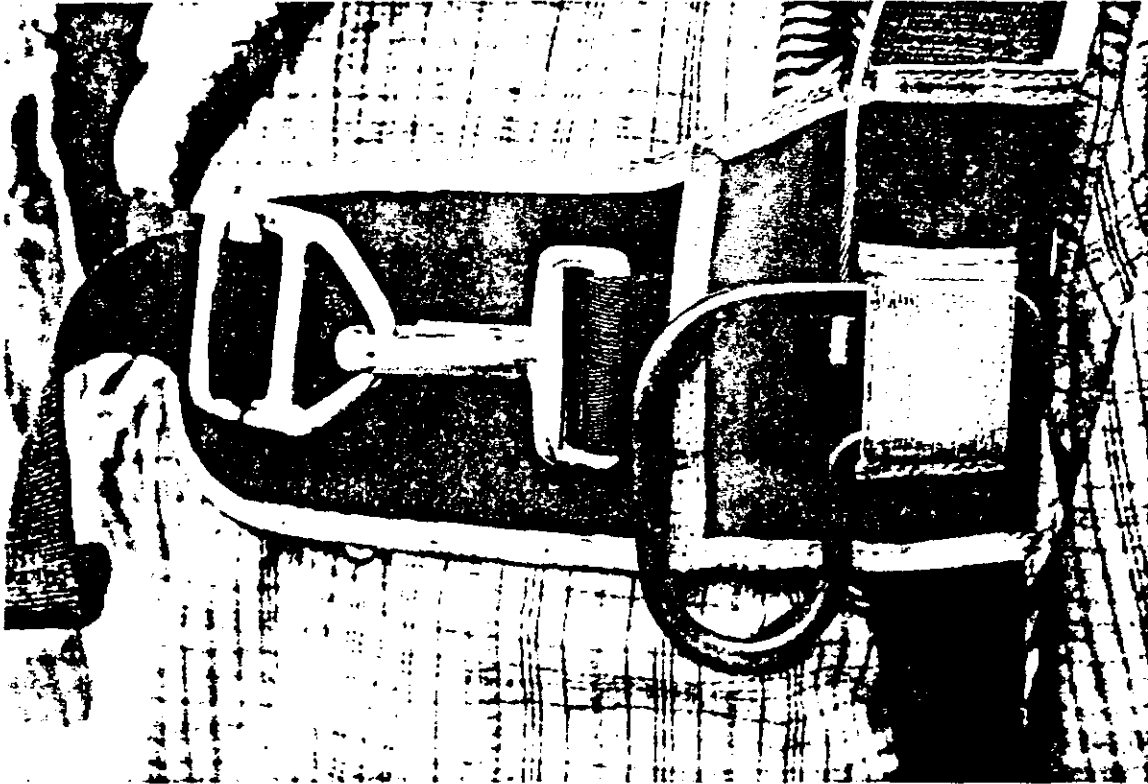


FIGURE 6 IN-CORRECT ROUTING OF CHEST STRAP THROUGH MARTIN BAKER HANDLE

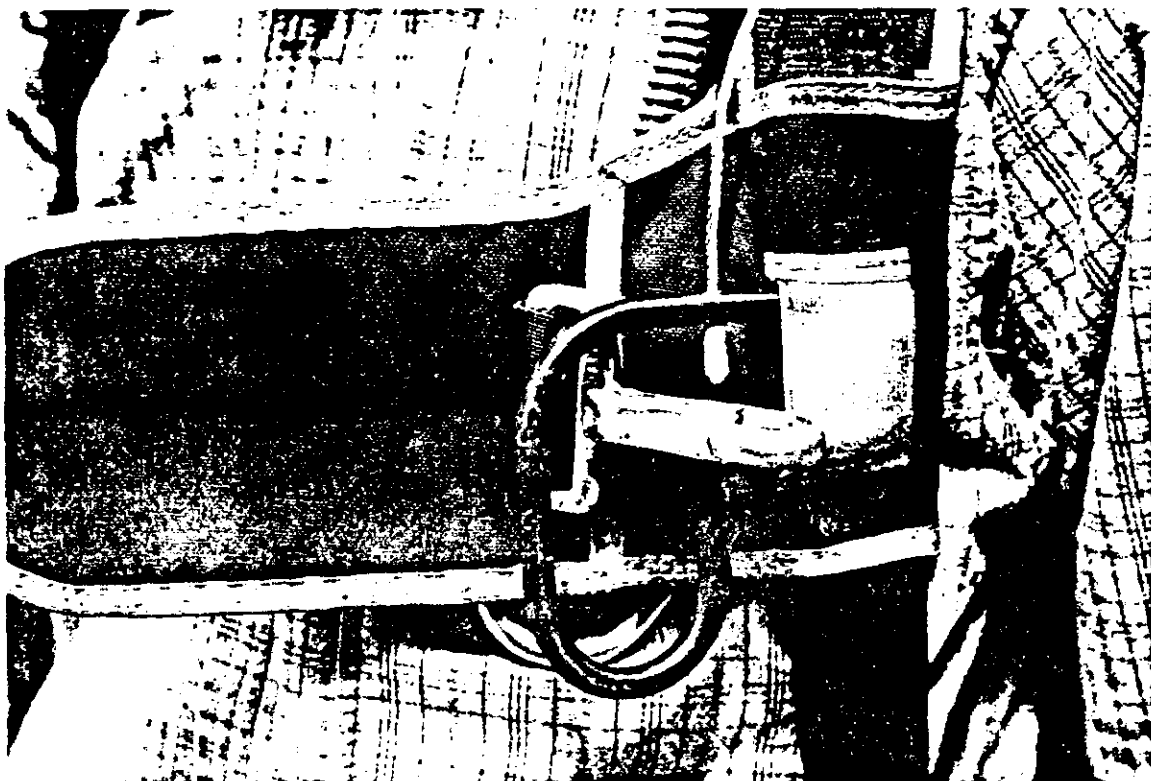


FIGURE 3 IN-CORRECT FASTENING OF RQ PARACHUTE CHEST STRAP

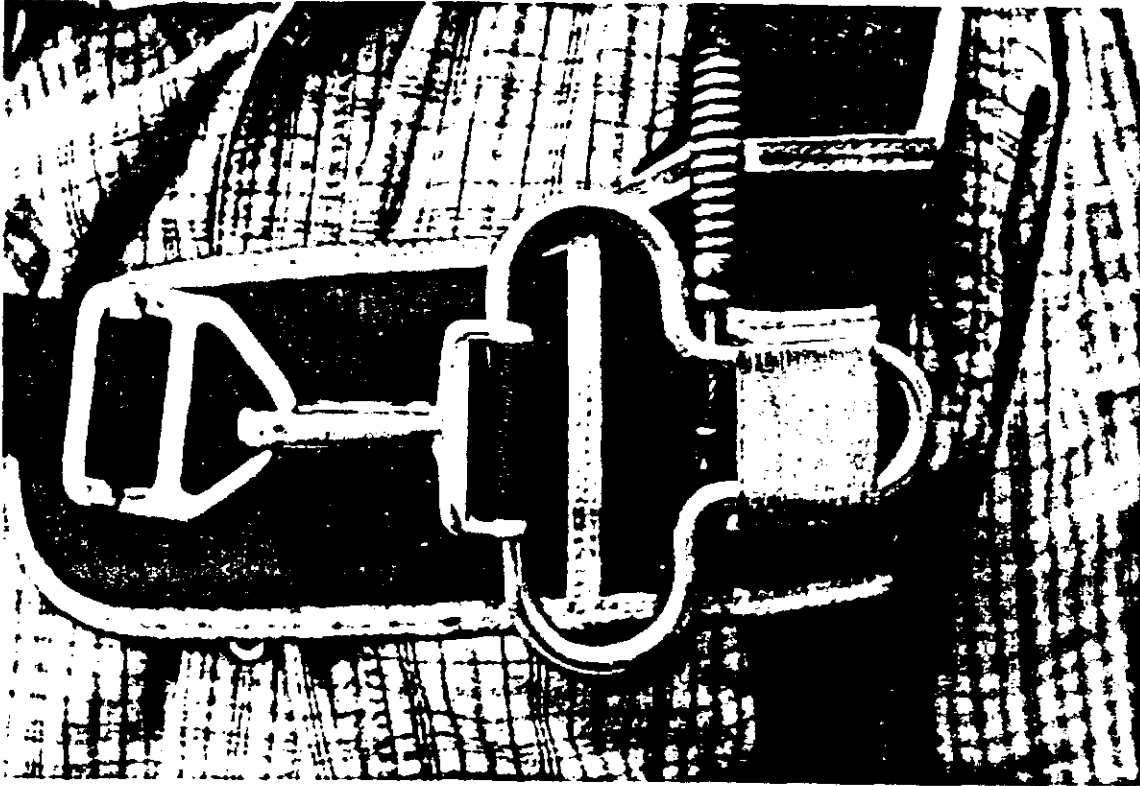
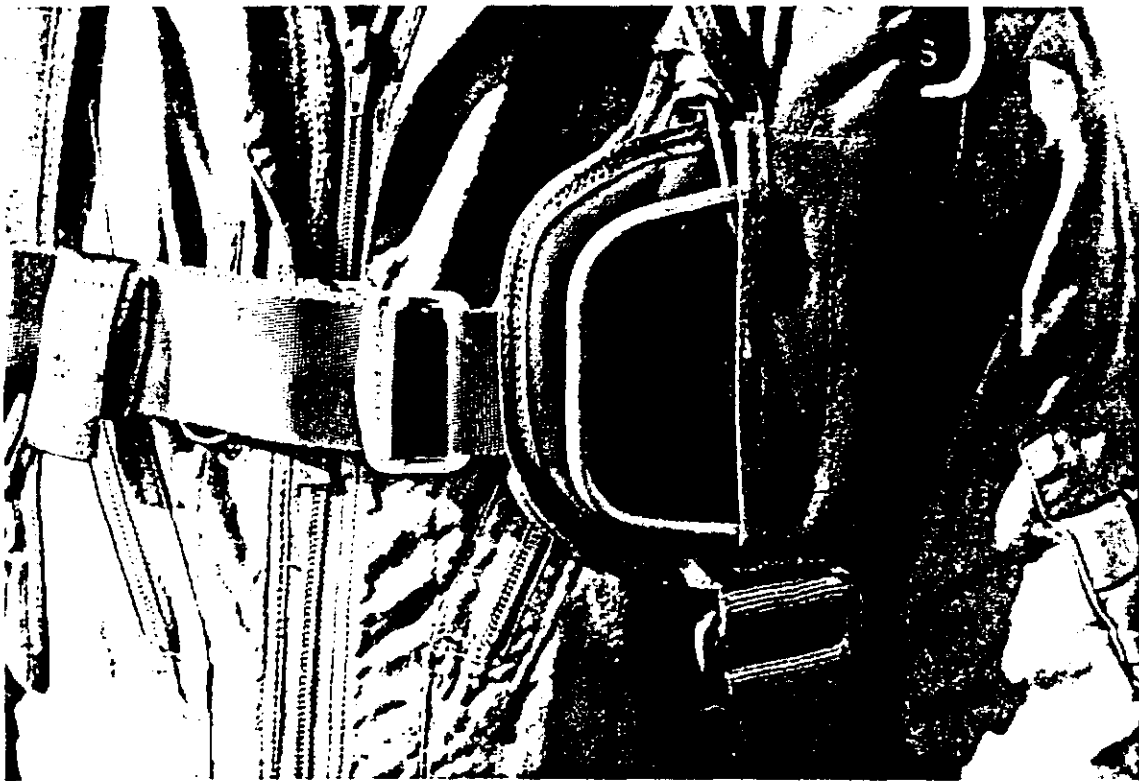


FIGURE 4 DESIGN OF CHEST STRAP IN USE WITH THE AIR TRAINING CORPS



11. INSULATION OF LIVE TERMINALS

P/E

Aircraft type : Piper PA18 Super Cub (applicable to all aircraft types)
Date : September 1993



The aircraft was in the hangar, and the pilot was operating the elevator trim control to check range of movement. The indicator cable snapped, and, unknown to the pilot, the broken end flew back along the fuselage and draped across the unprotected live terminal on the outside of the battery box. The cable soon glowed to red heat and another part of the cable, which was touching the aircraft's

fabric, ignited the fabric. In under two minutes, the entire aircraft and the hangar was engulfed in flames and in less than seven minutes the building and its contents were totally gutted. The photograph illustrates all that remains.

CAA COMMENT:

It is proper engineering practice

to put rubber protective boots over the terminals of a battery or the battery box and to maintain them in good condition. Whilst this was a very unusual occurrence, the fact that it has happened once is a warning to all. A review of three Super Cubs revealed that only one of them had an intact rubber boot protecting the positive, (live), terminal.

12. WHO'S IN CHARGE HERE? (OR THE AIRCRAFTS' FIRST SOLOS)

P/E

Aircraft type : Piper PA25 Pawnee, registration G-CMGC
Date : 7 May 1993

Reportable accident at Long Mynd.

Extract from *AAIB Bulletin*.

"The pilot was carrying out a pre-flight inspection of the aircraft and he stated that prior to carrying out such an inspection it was his normal practice to ensure that the magneto switches were selected to OFF. However, on this occasion, he

omitted to carry out that check. When he hand swung the propeller to check engine compression, the engine spluttered momentarily and then started running. The pilot jumped towards the left wing as the aircraft started to move

forward and he attempted to stop it. He was unable to retain a firm hold and as he fell to the ground the aircraft accelerated across the airstrip before it entered a gully and stopped, having sustained substantial damage."

Aircraft type : Jodel
Date : September 1993

The propeller was turned over by hand to prime and "blow-out" the engine. During this procedure, the pilot omitted to reset the throttle from the fully open position and the engine of the aircraft suddenly fired and

increased in rpm. Since there was nobody in the cockpit, no chocks in place (the pilot had used instead some pieces of masonry he found), the aircraft accelerated away from him and

headed for the gap between two buildings. The impact with the buildings removed both of the wings, fortunately no further damage to buildings or other property was sustained.

CAA COMMENT:

Probably, most pilots are shaking their head in amazement and asking the same questions as are being asked here at the GASIL desk. What about chocks? What about brakes? How about proper checks of the magneto switches? What about

someone sitting in the cockpit?

Any of these precautions could have saved two valuable aircraft. So don't be pressured into omitting safety precautions just because they might seem time consuming or inconvenient.

Finally, remember, in each case the pilot was standing in front of the aircraft - fortunately they both got out of the way of the propeller in time; this could be the final price you pay for your carelessness.

14. BROKEN ENGINE CONTROL CABLES

P

Aircraft type : Cessna 172
Date : August 1993
Engine type : Rolls Royce O-300D

Whilst on base leg, as the aircraft was being set up for approach, the carburettor heat was selected to full on, whereupon the knob and approxi-

mately 6½ inches of cable became completely detached. (Prior to this, the carb heat had been used several times, including on downwind leg without any

problems.) The approach was continued, a PAN call was made on final approach to advise the tower of the incident and the aircraft landed safely.