B.G.A. TECHNICAL COMMITTEE

TECHNICAL NEWSHEET

TNS 9/10/89

PART 1 AIRWORTHINESS "AGGRO"

Please add to the 1989 BGA Blue Pages.

1.1. ASW 12 & ASW 17 Gliders. Penetration of water into the spars LBA AD/89-115 and Schleicher T/Note No.4 (ASW 12) and No.12 (ASW 17) have been circulated to owners. Copy of AD herewith.

1.2. Bergfalke 4 Airbrake Drive Link Failure & Repair (Ref TNS 7/8/89 item 1.15) The Repair Scheme by Tim Macfadyen, Cotswold G.C. is illustrated herewith.

1.3 Bocian I (D) Air Brake Drive Failure The attached sketch from Tony Moss, Borders G.C., outlines a problem leading to failure and assymetric deployment of speed-brakes.

1.4. ASK 16 and ASK 14 (SLMG) Possible failure of fuel tank transparency LBA AD/89-91 copied herewith, gives advanced warning of the issue of Tech. Note No. 10, concerns inability to see the fuel level.

1.5. Wooden Propellers (Hoffman) which may be fittad to either motor-gliders, or tugs. Correct torque loading of bolts. The attached letter from Soaring equipment is self-explanatory.

1.6. SF.34 Wing Fuselage Connection LBA A/D 89-73 and Schleicher Tech. Note 336-2 have been circulated to the three UK operators, for action as required.

1.7. Grob G.103 Hook Mounting Bracket - cracks The attached sketch from P. Stratten (4 Counties G.C.) requires inspection of the front mounting bracket.

1.8. Bellanca/Champion (Tugs) Seat Back failures. FA A/D 89-18-06 reinforces the warning given in BGA TNS 5/6/89. THIS DIRECTIVE IS MANDATORY IN THE U.K.

1.9. RF4D GEAR UP LANDING Extract from A.A.I.B. Bulletin (herewith) draws attention of the importance of lowering what you may have retracted.

1.10. GROB G.109B Inadequate Performance in X-wind. Extract from AAIB Report (herewith) outlines the problem.

1.11. IS 28 M2 (Fatality) The take-off performance may have been degraded by failure to select fine propeller pitch. By feathering and unfeathering these propellers each time before engine start, the fine pitch stop should be reached. Check that the minimum static RPM is achieved before take-off.

1.12. Rehearsing Failures leads to a Disaster AAIB Bulletin 8/89 herewith records the sorry story of a Piper PA 28-161 which resulted in a badly broken aeroplane!

1.13. Broke Crankshaft detected by Oil Leak Extract from GASIL makes good reading. This type of crankshaft is applied to many types of tug.

1.14. GILCOUS (French) Fuel Pumps The attached DGAC Directive is made mandatory on aircraft listed thereon, on the UK register.

1.15. Gadringer harnesses (Type F19) The Gliding Federation of Australia have kindly sent the BGA a copy of their AD-364- (extract herewith). All such harnesses should be inspected as illustrated therein, for failure to Release under Emergency Conditions.

1.16. Centrair 101 (Pegasus) Rudder Pedal travels may become restricted on some samples when the pedals are retracted fully forward. In such cases the available adjustment should be permanently locked, to prevent restriction. (Southdown G.C.).

1.17. T.61/SF25 Series SLMGs Failure of the Throttle Control Cable will result in full power being applied. Substantial damage on the ground. (Devon & Somerset G.C.).

PART 2. GENERAL MATTERS

2.1. AVCO Lycoming Cylinders A competitive package deal of replacement cylinders (new not used), complete with pistons valves etc. are now available through the usual vendor sources some of which are more competitive than others! These (new) assemblies will certainly prove to be better value, than "retreads".

2.2. SLMG C of A Renewals Please refer to the supplement to BGA TNS/1/89 for details of the correct procedures. Accuracy is required in completing the records of hours flown in the preceding 3 years.

2.3. OVER PRESSURING OF WATER BALLAST TANKS whilst filling from a caravan type water pump, can ruin your entire soaring season (ASW 22!).

2.4. LOG BOOKS for SLMGs Failure to keep CAA Approved Log Books is a breach of Article 15 of the Air Navigation Order. This is basically an Owner/Operator responsibility but Maintenance Engineers and PPL holders who perform maintenance as required by the Light Aircraft Maintenance Schedule (LAMS) have joint responsibilities.

2.5. Club Technical Officers Please transmit to your Club Members the airworthiness information you receive through the media of these BGA Technical Newsheets (Extract from BGA Technical Procedure Manual).

> "Club Technical Officers may or may not be Inspectors. They are persons nominated by the gliding club concerned to whom all technical circulars may be sent. They are responsible to their Club Committees for seeing that any action required is taken. The BGA some years ago

asked all Clubs to appoint a Technical Officer since it was felt that the system of sending technical information to the Secretary of a Gliding Club was not very satisfactory. The Secretary however, competent, might not be of "technical" nature and might not comprehend the importance of some of the information and instructions sent out. It was felt that a much better plan would be to ask Clubs ot supply the BGA with a name of a member who would be willing to receive this sort of information, and to advise his Club on the action to be taken in any case. Most Clubs also expect that their Technical Officer will look after the business seeing that log books are properly filled in and signed by an Approved person (Inspector) following any repairs or other work. He may or may not be the Club Safety Officer.

WANTED

Vale of Neath G.C. require a port (left) wing for a Ka7 - any offers?

R.B. STRATTON
CHIEF TECHNICAL OFFICER.
26th September, 1989.

TNS 7/10/89

AIRWORTHINESS DIRECTIVE

ASW 12 | ASW 17 *

* Sent to owners

89-115 Schleicher

Date of issue:

6. JULI 1989

Affected sailplanes:
German Type Certificate No. 259
ASW 12 all gliders
German Type Certificate No. 282
ASW 17 all gliders

Subject:
Wing spar

Reason:
Following penetration of water into the spar interior it is possible that under certain conditions a wood destroying mould fungus develops in the spar inside. This mould fungus may affect and destroy the balsawood spar webs and the plywood blocks of the spar to such an extent that the supporting function of the spar webs is no longer sufficient. This may lead eventually to the premature failure of the wing.

Action:
In accordance with the appropriate Technical Note the wing spar must be visually inspected for penetrated moisture, mould fungi and/or swelling up! Mould fungi attack shows as discoloration of the wood into blue, brown or grey hues or as white mold fungi in lumpy shape or in cobweb-shaped, but irregular threads.

Compliance:
ASW 12.
Action as per point 1.1 through 1.4 of Technical Note, prior to July 31, 1989.
All further action before December 31, 1989, at the latest.

ASW 17.
Action as per point 1.1 through 1.3 of Technical Note, prior to July 31, 1989.
All further action before December 31, 1989, at the latest.

Technical publications of the manufacturer:
Alexander Schleicher, ASW 12 Technical Note No. 4 of May 10, 1989 and
ASW 17 Technical Note No. 12 of May 8, 1989

which become herewith part of this AD and may be obtained from Messrs.

Alexander Schleicher GmbH & Co. Segelflugzeugbau, D-6416 Poppenhausen, Wasserkuppe, Federal Republic of Germany.

Accomplishment and log book entry:
The "Action points 1.1 thru 3.2" must only be carried out by the manufacturer or a technical aviation service station holding an appropriate license.
"Action point 4." can be carried out by the owner.
The accomplishment of this AD must be certified by a licensed inspector in the glider's inspection documents and in the log-book.

TM: 19/1989

AIRWORTHINESS DIRECTIVE

ASK 14.

89-121 Schleicher

Date of issue :
June 28, 1989

Affected powered glider:
German Type Certificate No. 684
ASK 14,
all powered gliders

Subject:
Fueltank

Reason:
Possible Failure of the Fueltank Transparence

Action:
Action to be accomplished in accordance with Technical Note

Compliance:
Action 1 of Technical Note:
Before the next flight
Action 2 of Technical Note:
Before the next annual inspection, but not later than
December 31, 1989

Technical publication of the manufacturer:
Alexander Schleicher, ASK 14 Technical Note No. 6
of May 6, 1989
which becomes herewith part of this AD and may be obtained from Messrs.
Alexander Schleicher GmbH & Co. Segelflugzeugbau,
D-6416 Poppenhausen, Wasserkuppe, Federal Republic of Germany

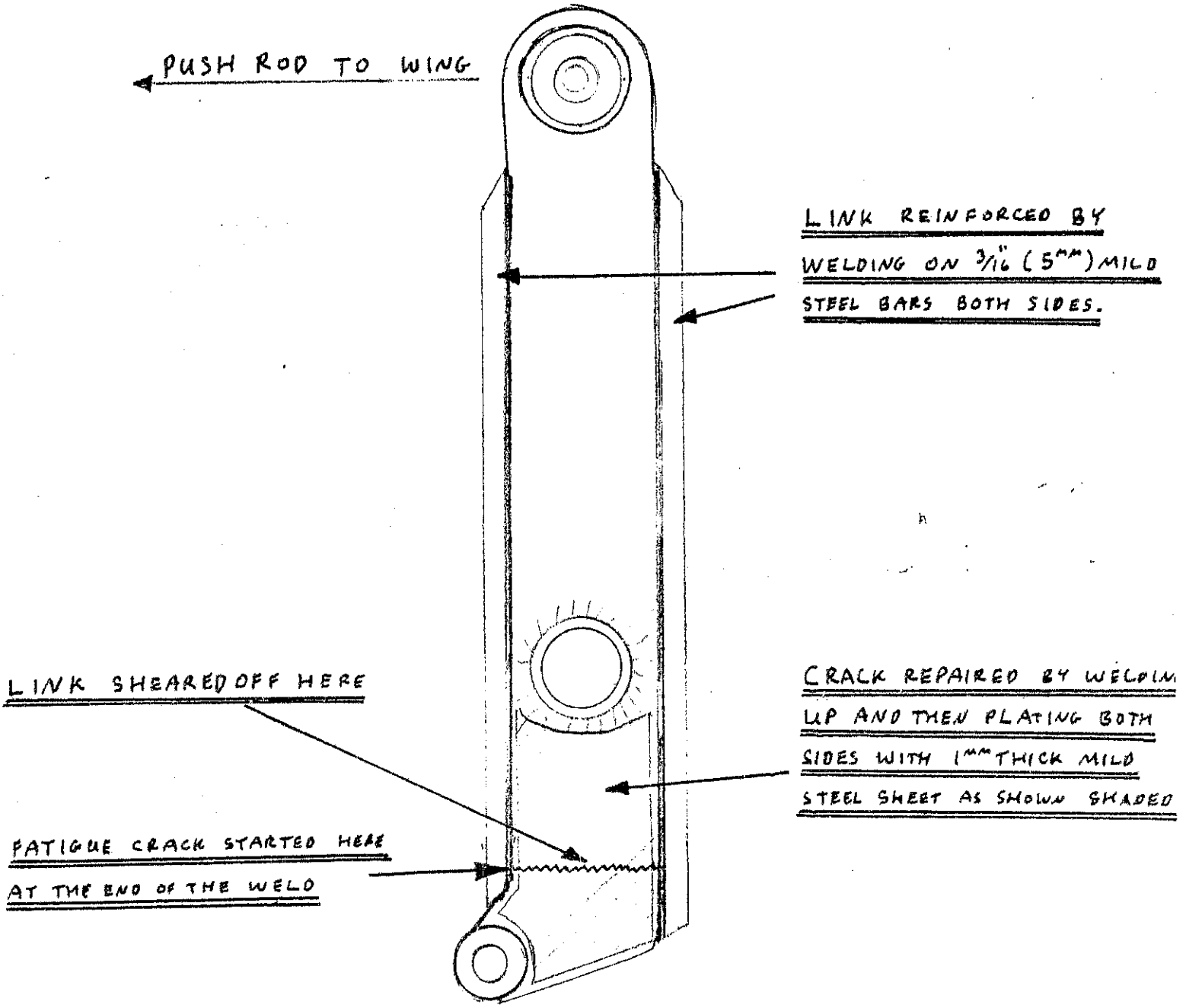
Accomplishment and log book entry:
Action to be accomplished by an approved service station.
The exchange of the fueltank can be accomplished only by the manufacturer or a therefore approved service station.
The accomplishment of this AD must be certified by a licensed inspector in the powered gliders inspection documents and in the log-book.

Note:
For replacements use only original material of the manufacturer.

BERGFALKE 4 AIRBRAKE DRIVE LINK FAILURE MODE & REPAIR

The left hand link in the fuselage centre section, to which the wing pushrod is connected, sheared off as shown. It was repaired and reinforced as drown. The right hand link was reinforced in a similar manor, with both sheet and bar.

(BGATNS 7/8/89 Rules)

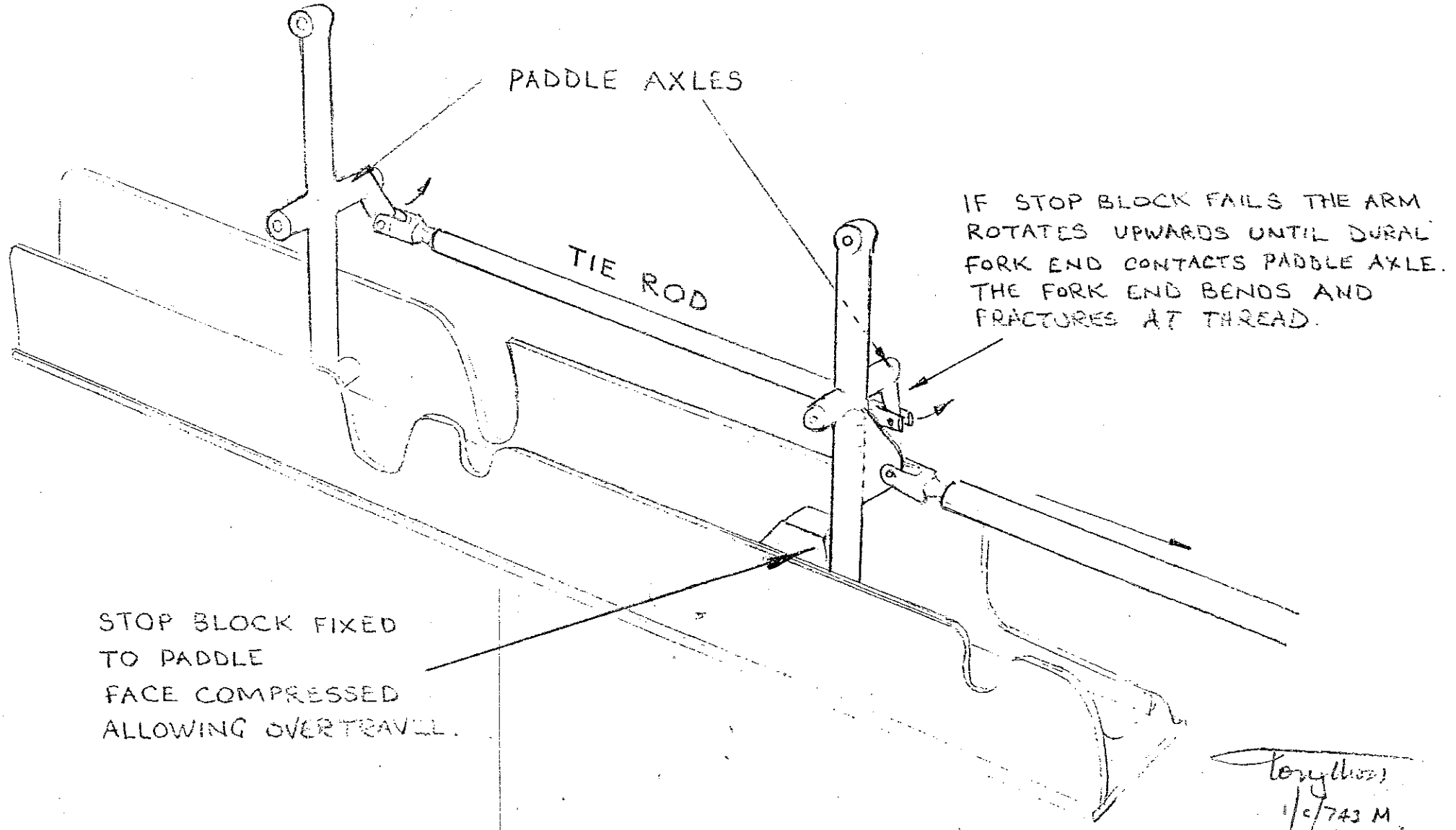


Complete failure of the link occured, with the airbrakes closed, during a spin recovery, at high "G" and high speed, but well within the flight envelope. The fatigue crack was only 2mm long and would thus have been difficult to see. It was not spotted on a recent C of A carried out by a very experienced aircraft engineer. Reinforcement of both left and right hand arms is thus recomended even if cracks cannot be detected.

T. [illegible] Ludlow VA/130 21 July 1989

BGA TNS/9/10/84

BOCIAN 1D AIRBRAKE PROBLEM.



Tony Lloyd
1/c/743 M.

BGA TNS/9/14/89

SOARING
EQUIPMENT
LIMITED

193, Russell Road,
Moseley,
Birmingham B13 8RR
FAX: 021 449 9855 TEL: 021 449 1121

DIRECTORS: R M NEILL
J M NEILL

Ref: RMN/JMN/HO
Date: August 1989

To All S.E.Ltd., Customers.

re: HOFFMANN FIXED PITCH PROPELLERS

Our attention has been drawn to the fact that 2 wooden propellers have been found 'loose' on their mounting flanges.

It is thought that the problem is caused by the natural shrinkage of the wood during prolonged dry weather.

Your attention is drawn to the Owner's Manual, NR E0110.74, Fixed Pitch Models, supplied with every new propeller, Page 10, which states:-

> Check torque moment after the first flight, after the first 25 hours and there after as necessary, but at least each 50 hours or once a year. In hot and dry climate the wood may shrink, hence closer retorque intervals have to be established.
>
> Note: Some bolts, not specified herein, may require other torque moments. Please ask the company for the correct value.

4.1.6 Use the recommended torque moment for tapered-, spline- or Hirth-hub installation as specified from the engine manufacturer.

4.1.7 Check blade track 10 cm (4 inches) from the tip on the trailing edge. Max. permissible is 3 mm (1/8"). If prop is not within the limit, remove it, check mating surfaces and turn prop 180°. Does this procedure not change the situation, send propeller back into the factory. Different torque up to 0,3 da Nm (30 inlb) may be used.

> WARNING:
>
> Do not use any shimming material or paper to correct the track. The torque (horse power) is mainly transferred by friction.

Will you please check your propeller before the next flight to ensure the torque settings are correct, and if any discrepancy is found we would be grateful if you will let us know.

Robert M. Neill

AIRWORTHINESS DIRECTIVE
issued by the
Direction Generale de l'Aviation Civile

GILCOUSS Electric Fuel Pump reference 22657

Wear and tear of diaphragm

This Airworthiness Directive concerns all piston-engine light aircraft equipped with a GILCOUSS electric fuel pump reference 22657.

In particular, this pump is fitted to the following aircraft:

- P. ROBIN, type DR 1050/1051
- SOCATA MS 880
- GARDAN GY 80
- SAN-JODEL D 140
- Sundry aircraft flying under a Restricted Certificate of Airworthiness for Aircraft ("CNRA"),
  etc...

* * *

The pumps in question were manufactured more than 10 years ago and the neoprene diaphragms are subject to wear and tear due to ageing. This deterioration can give rise to a leak which is harmful to the proper functioning of the fuel circuit and may be the cause of fire in the engine compartment. Furthermore, these pumps are no longer made, nor are their spares.

* * *

Before undertaking any further flight following the date of enforcement of this present Airworthiness Directive, make a visual inspection of the pump with the aim of finding any possible leak.

1. If a leak is detected, withdraw the aircraft from service, remove the pump and fit a new one.

2. If no leak is detected, arrange to replace the pump as soon as possible and in any case within a maximum period of 6 months from the date of enforcement of this present Directive.

Record the execution of the work in the aircraft's log.

Cf: PIERRE ROBIN Service Bulletin no. 113
for aircraft DR 1050 which for replacement
by fitting a FACET pump using kit APR no. A811.

DATE OF ENFORCEMENT: 29TH JULY 1989

Date: 19.07.89 — GILCOUSS Electric Fuel Pump reference 22657 — Ref: 89-105(A)

Translation of "Consigne de Navigabilité"
Réf.: 89-105
In case of any difficulty, reference should be made to the French original issue.

RGA TNS/9/1589

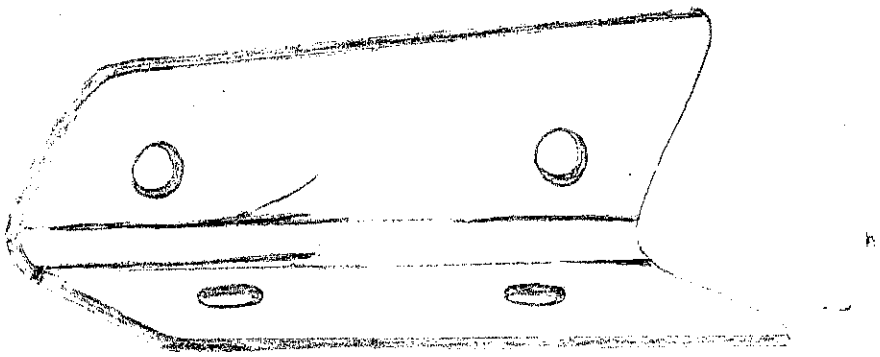
GROB ACRO HOOK MOUNTING BRACKET

During a rear Tost hook change on Grob Acro R58 the front mounting brackets supporting the hook assembly in its floor mounted box were found cracked along the former marks, produced presumably during the bending process, leaving only 30% of the bend intact.

Due to a pressing requirement for the glider, replacements were manufactured by club engineers using suitable material bent around bars. Genuine Grob spares will be fitted on receipt of spares.

These cracks were not apparent during the last servicing in May, however, with the hook still fitted, the cracks would perhaps be difficult to see.

The diagram below indicates the cracking.



ACCGS Maintenance have not yet seen this problem in their fleet.

PJ Stratten IC860M.

AIRWORTHINESS DIRECTIVE

89-81 Schleicher

Date of issue:
16. AUG. 1989

Affected powered glider:
German Type Certificate No. 758
ASK 16 and ASK 16B
all powered gliders

Subject:
Fueltank

Reason:
Possible Failure of the Fueltank Transparence

Action:
Action to be accomplished in accordance with Technical Note

Compliance:
Action 1 of Technical Note:
Before the next flight
Action 2 of Technical Note:
Before the next annual inspection, but not later than December 31, 1989

Technical publication of the manufacturer:
Alexander Schleicher, ASK 16 Technical Note No. 10
of July 26, 1989
which becomes herewith part of this AD and may be obtained form Messrs. Alexander Schleicher GmbH & Co. Segelflugzeugbau,
D-6416 Poppenhausen, Wasserkuppe, Federal Republic of Germany.

Accomplishment and log book entry:
Action to be accomplished by an approved service station.
The exchange of the fueltank can be accomplished only by the manufacturer or a therefore approved service station.
The accomplishment of this AD must be certified by a licensed inspector in the powered gliders inspection documents and in the log-book.

Note:
For replacements use only original material of the manufacturer.

No: 9/89 Ref: EW/G89/06/03 Category: 1c

Aircraft Type and Registration:	Fournier RF4D, G-AYHY	
No & Type of Engines:	1 Rectimo 4AR-1200 piston engine	
Year of Manufacture:	1970	
Date and Time (UTC):	1 June 1989 at 1530 hrs	
Location:	Redhill Aerodrome, Surrey	
Type of Flight:	Training	
Persons on Board:	Crew - 1	Passengers - None
Injuries:	Crew - None	Passengers - N/A
Nature of Damage:	Broken propeller	
Commander's Licence:	Private Pilot's Licence	
Commander's Age:	46 years	
Commander's Total Flying Experience:	593 hours (of which 12 were on type)	
Information Source:	Aircraft Accident Report Form submitted by the pilot	

On final approach, the pilot's attention was distracted by the presence of another aircraft in the circuit and he failed to lower his landing gear. He received a warning over the R/T from the control tower but this was too late to prevent the accident. The pilot was unhurt.

No: 9/89 Ref: EW/G89/07/22 Category: 1c

Aircraft Type and Registration:	Grob G109B, G-BLUV	
No & Type of Engines:	1 Grob 2500-E1 piston engine	
Year of Manufacture:	1985	
Date and Time (UTC):	22 July 1989 at 1240 hrs	
Location:	Clacton airfield, Essex	
Type of Flight:	Pleasure	
Persons on Board:	Crew - 1	Passengers - 1
Injuries:	Crew - None	Passengers - None
Nature of Damage:	Landing gear and propeller broken; damage to left wing and fuselage	
Commander's Licence:	Private Pilot's Licence	
Commander's Age:	53 years	
Commander's Total Flying Experience:	102 (of which 101 were on type)	
Information Source:	Aircraft Accident Report Form submitted by pilot	

The aircraft was taking off from a paved runway in a 90° crosswind from the right of 7-10 knots. The take-off runway had a slight uphill gradient and the pilot had to apply full left rudder to keep the aircraft straight. The take-off roll was further extended by an application of left brake after the tailwheel left the ground. When 200 metres from the end of the runway the pilot decided to abandon the take-off. He closed the throttle and made an initial application of brake but then, realising there was insufficient runway remaining in which to stop the aircraft, he conserved speed in order to clear the boundary hedge. Having cleared the hedge he was unable to keep the aircraft in the air and, just before it sank to the ground, he attempted to turn into wind. As it touched down, skidding to the left, the left landing gear leg collapsed, the left wing touched the ground and the aircraft slid a further 60 metres before coming to rest facing backwards.

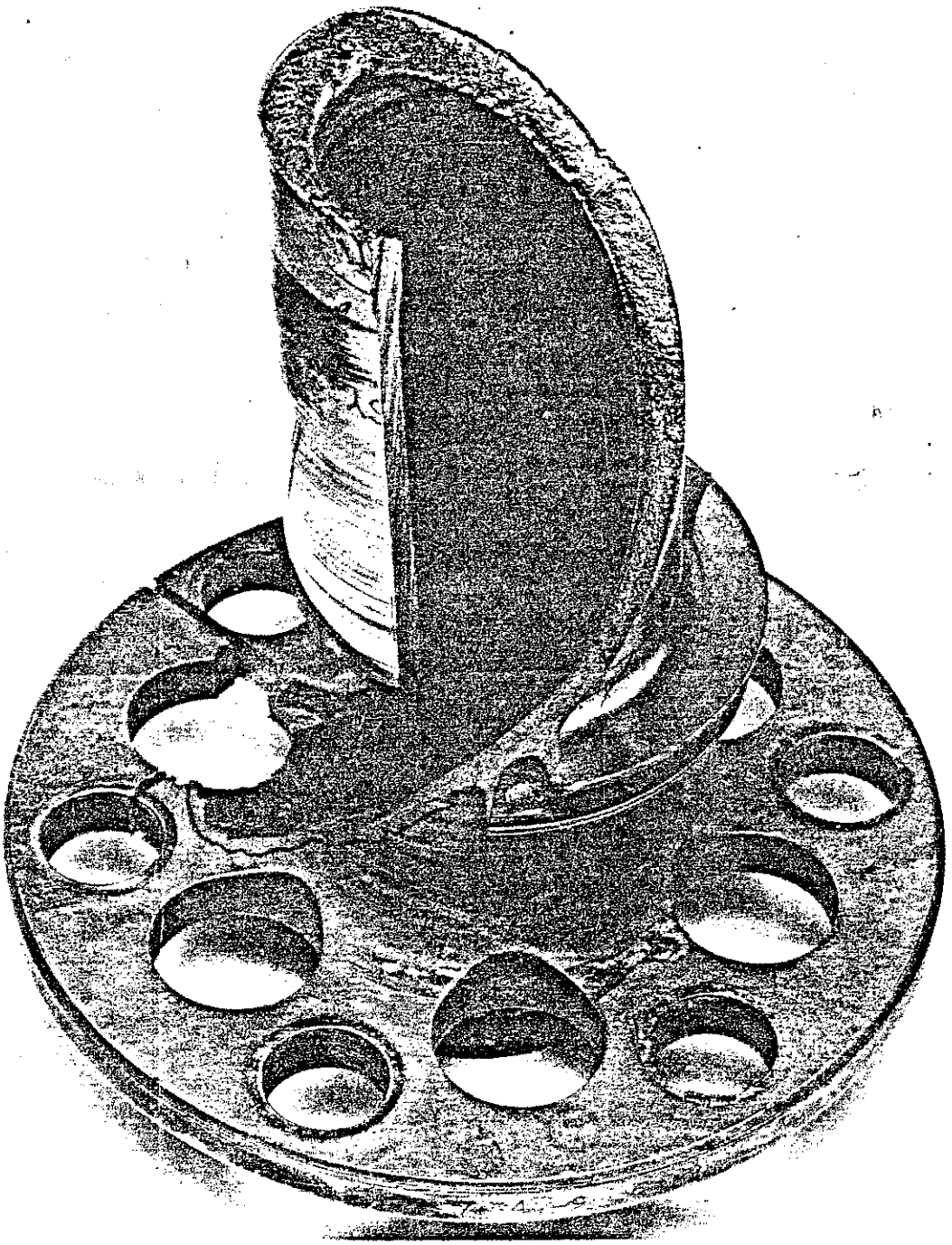
5. LYCOMING CRANKSHAFT CRACK P/E

Engine Type : Lycoming O-360 A3A
Date : May 1989

The engine had been sent to the overhaul shop to rectify reported oil leak from the crankshaft prop flange area. On dismantling, the crankshaft was found to be cracked; the crack extending from a lightening hole in the propeller flange in a spiral of 400° to the first crank pin throw.

Laboratory examination has revealed that the crack originated in a corrosion pit 1½" up the bore of the crankshaft and propagated in torsional failure. The corrosion was heaviest where a layer of grease ended, it is presumed that the grease was being used as a corrosion inhibitor.

Unfortunately, many greases are hygroscopic, i.e. they attract and trap moisture and it is thought that the grease used was one of these. Therefore, it is recommended that water repellent greases or sprays should be used and that it is strongly suggested to look very carefully at the crankshaft nose if an oil leak is present. The leak might not necessarily be due to an oil seal problem.



CAA is grateful to those who sectioned the crankshaft and enabled us to produce this quite graphic photograph.

CHAMPION AIRCRAFT CORP.
AIRWORTHINESS DIRECTIVE
SMALL AIRCRAFT

89-18-06 AMERICAN CHAMPION AIRCRAFT (BELLANCA, CHAMPION): Amendment 39-6306.

Applicability: Models 7ECA, 7GCAA, 7GCBC, 7KCAB, 8GCBC, and 8KCAB (all serial numbers) airplanes certificated in any category, when equipped with front folding seats.

Compliance: Required as indicated in the body of the AD, unless already accomplished.

To prevent failure of the seat back which could result in loss of control of the airplane, accomplish the following:

(a) Within the next 25 hours time-in-service after the effective date of this AD and, thereafter at intervals not to exceed 25 hours time-in-service from the last inspection until the actions specified in paragraph (b) below are accomplished, accomplish the following:

(1) Magnetic particle or dye penetrant inspect the left and right sides of the welded lower seat frame side-tube/side-brace junction and seatback hinges for evidence of cracks. If any cracks are found, prior to further flight repair, in accordance with the recommended procedures in Advisory Circular (AC) 43.13-1A, the crack or replace the cracked part with a serviceable part.

(2) Fabricate and install on the instrument panel in clear view of the pilot a placard with letters of minimum 0.2 inches in height which reads as follows: "Warning: Do not pull or push on upper seat back."

(b) Within the next 150 hours time-in-service after the effective date of this AD, replace the front folding seat frame with an exchange unit in accordance with American Champion Aircraft Service Letter No. 401, dated June 14, 1989. The repetitive inspections and the placard specified in paragraph (a) above are no longer required after the actions specified in this paragraph have been accomplished.

(c) Airplanes may be flown in accordance with FAR 21.197 to a location where this AD may be accomplished.

(d) An equivalent means of compliance with this AD may be used if approved by the Manager, Chicago Aircraft Certification Office, ACE-115C, 2300 East Devon Avenue, Des Plaines, Illinois 60018. All persons affected by this directive may obtain copies of the documents referred to herein upon request to American Champion Aircraft, P.O. Box 37, Rochester, Wisconsin 53167, or may examine these documents at the FAA, Office of the Assistant Chief Counsel, Room 1558, 601 East 12th Street, Kansas City, Missouri 64106.

This amendment (39-6306, AD 89-18-06) becomes effective on September 21, 1989.

FOR FURTHER INFORMATION CONTACT: Mr. Gregory J. Michalik, ACE-120C, Chicago Aircraft Certification Office, 2300 East Devon Avenue, Des Plaines, Illinois 60018, Telephone (312) 694-7135.

No: 8/89 **Ref: EW/G89/04/21** **Category: 1c**

Aircraft Type and Registration:	Piper PA28-161, G-BFNI
No & Type of Engines:	1 Lycoming O-320-D3G piston engine
Year of Manufacture:	1978
Date and Time (UTC):	14 April 1989 at 1630 hrs
Location:	Barn Farm, Horton-Cum-Studley
Type of Flight:	Training
Persons on Board:	Crew - 1 Passengers - None
Injuries:	Crew - None Passengers - N/A
Nature of Damage:	All 3 landing gears broken off, damage to both wings, engine bulkhead, fuselage skins, stabilator and flaps.
Commander's Licence:	Student Pilot
Commander's Age:	33 years
Commander's Total Flying Experience:	38 hours (all of which were on type)
Information Source:	Aircraft Accident Report Form submitted by the pilot and subsequent discussions with the pilot, Chief Flying Instructor and Chief Engineer.

The pilot reported that he had been carrying out practice forced landings (PFL). He had completed several PFLs during the flight but this was the first simulated engine fire. He stated that he closed the throttle at 3000 ft, selected carburettor heat on and simulated the actions required for the engine fire drill. He then assumed that the fire had not extinguished, selected 40° flap and carried out a spiral emergency descent at 95 kts, during which he decided upon a suitable field. At 1500 ft he assumed the simulated fire to be extinguished. He reduced speed to 75 kts. and retracted the flaps. He also momentarily applied power to warm the engine. The pilot then simulated the usual PFL vital actions and turned onto final approach. At 700 ft agl he initiated a go-around, selecting full power, carburettor heat to "off" and flaps to 25°. The engine failed to respond. In subsequent discussion, the pilot agreed that he may have opened the throttle somewhat rapidly. The pilot re-cycled the throttle lever and checked that the electric fuel pump was on. He checked that the mixture was fully rich and re-selected carburettor heat, but the engine still did not respond and eventually stopped. The aircraft landed heavily in a soft field. The pilot switched off the fuel and electrical system before vacating the aircraft.

The aircraft sustained substantial damage to the landing gear and also damage to the lower wing skins, flaps, fuselage, firewall and stabilator. After recovery, the engine was connected to a fuel system rig

for test purposes. It started and ran normally, although the slow running mixture was somewhat rich. This was attributed to distortion of the air induction system in the impact. The fuel system was examined for contamination but none was found. The engine had been investigated in the past due to a tendency towards momentary rough-running as the throttle was advanced.

An aftercast of the weather in the area at the time of the accident was obtained and was as follows:

Nil weather, 20 km visibility, 2 to 3 oktas cumulus base 3500 ft, 4 oktas stratocumulus base 4000ft. At 3000 ft the temperature was 2°C and the relative humidity (RH) was 60%. At 2000 ft the temperature was 5 °C, RH 55%, and at 1000 ft 8°C, RH 58%.

When plotted on a carburretor icing chart, the above conditions fell within the areas designated "Icing - glide and cruise power" and "Serious icing at glide power".

The aircraft was fuelled with Avgas 100LL, DERD 2485

GADRINGER HARNESS.

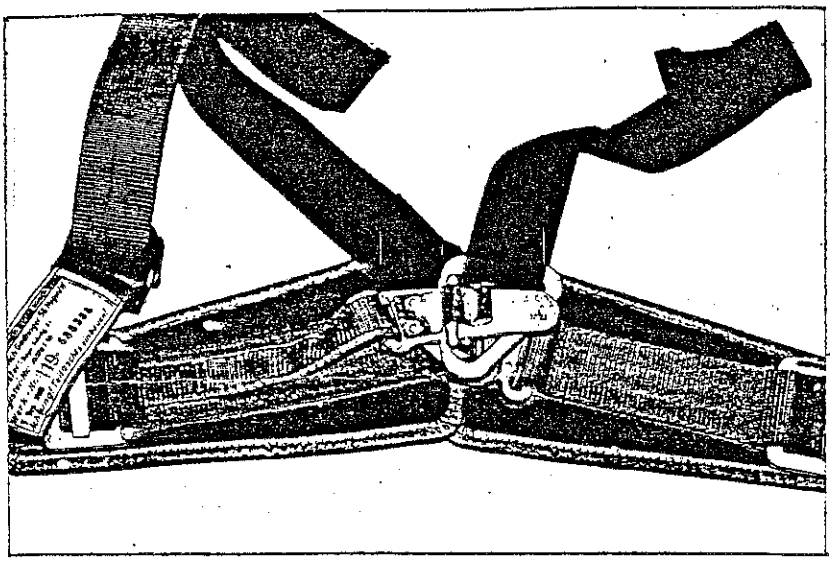


Figure 1

Original Gadringer FB19 harness system with large abdominal pads which overlap in the centre.

The pad overlap keeps the buckle halves properly aligned ensuring immediate disengagement when the peg is withdrawn.

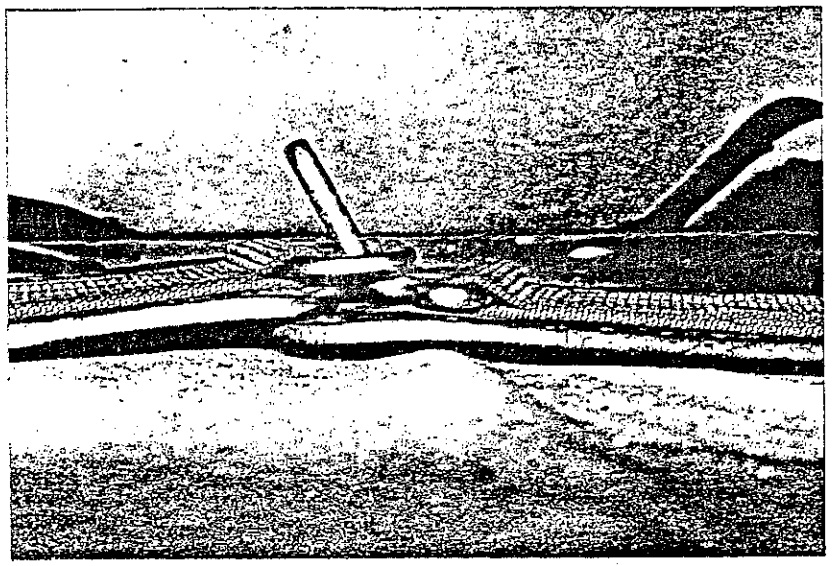


Figure 2

Shows the pad overlap and the correct fit of the two buckle halves. The "bend up" angle of the tongue is obviously important

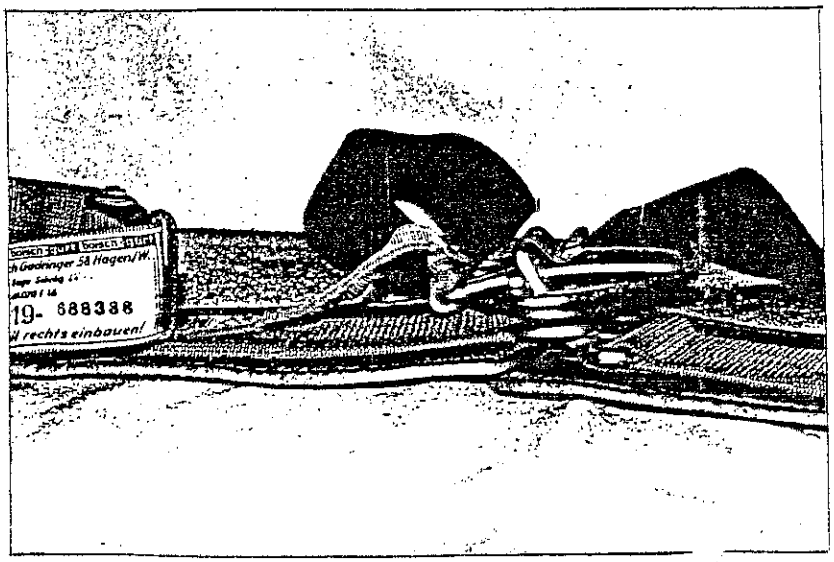
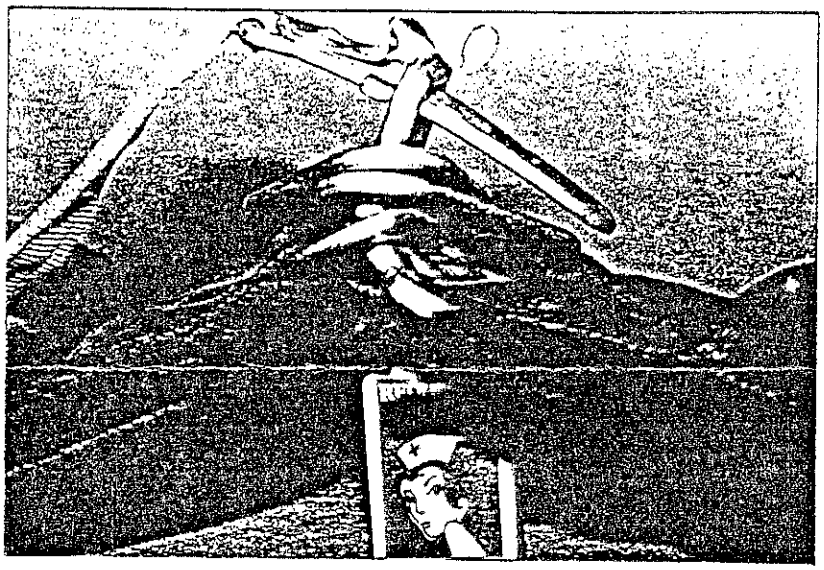


Figure 3

Shows pad overlap and all four straps correctly assembled with proper alignment controlled by the pads.



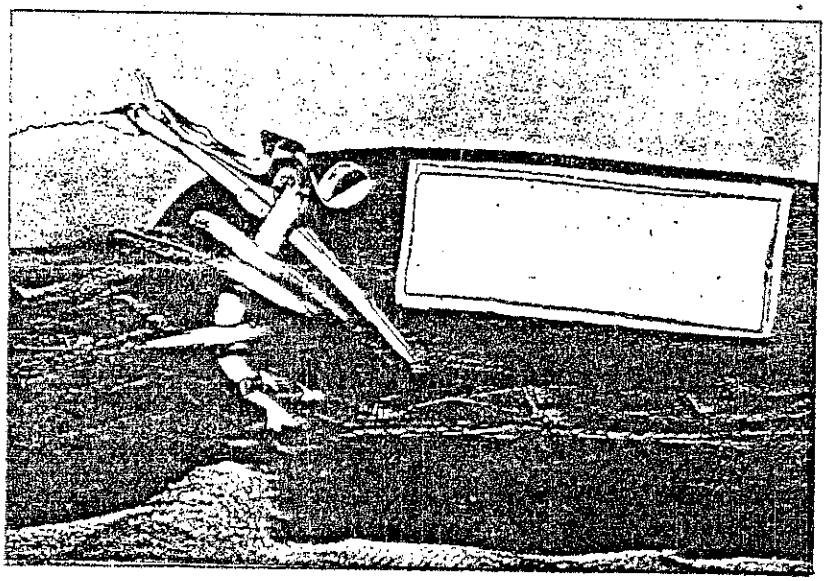
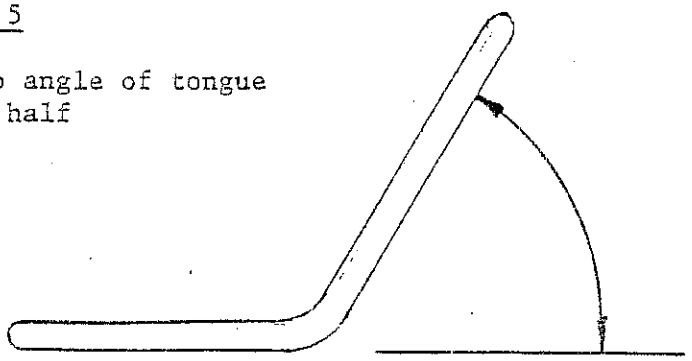


Figure 4

These 2 illustrations show that without correct pad support the two lap strap buckle halves can engage too far and hook up by jamming together at an angle that prevents self disengagement

Figure 5

Bend up angle of tongue buckle half



Bend up angle 57° ± 2° measured at 90° to the tongue fold line.