

B.G.A. TECHNICAL COMMITTEE

TECHNICAL NEWSHEET

TNS 11/12/87

- PART 1 AIRWORTHINESS "AGGRO" The 1988 B.G.A. Compendium of Mandatory Modifications and Inspections will be issued with TNS 1/2/88, and will include extracts from 1987 TNS.
- 1.1. SF 25/T.61 Series Motor-Gliders Safety of MAIN RIGGING PIN. If the root end fitting becomes splayed, the MAIN PIN WILL NO LONGER EXTEND through the lower fitting, a safe amount. C.A.A. letters to operators (L.T.O's) 508 and 514 refer also B.G.A. TNS 12/80. CHECK ON DAILY INSPECTION.
- 1.2. Falke (Motor Glider). Water in the fuel system may have contributed to engine failure after take-off, resulting in a fatality. Fuel tank drains should be checked, as well as fuel tank caps. Filters must be checked regularly. Do you use scrupulously clean containers and funnels with very fine gauze strainers, or other suitable means of filtration?
- 1.3. IS.28 M.2's Removal of Brass Locking Wire Two cases have been reported of unsecured bolts in the Air Brake System, which could cause undemanded brake operation and possible foul-up of the system. C.A.A. MANDATORY Directive 014-11-82 required the replacement of brass wire throughout the flying control systems. TNS 12/82 and SB IS-28 M2 - E0-10 also refer. (Reported by P.F. Woodcock).
- 1.4. Ka6 Air-Brake lever foul at wing root (TNS 9/10/87) A well known cause of this defect is the incorrect adjustment of the wheel-brake system! (Comments by Robin Bull & P. Philpot).
- 1.5. Boclan ID & IE MAIN WING FITTINGS The following bulletin has been received:  
BE-020-86 authorises repairs as per sketch attached. (copies from Anglo Polish Sailplanes).
- 1.6. Blaniks Bulletin L13/062 (Mailed to owners 7.10.87) requires mandatory inspection of lower spar flanges. (copy herewith).
- 1.7. Blaniks Cracks in Flap actuating slots on the top surface (covered by fabric) - (Reported by Lou Glover - Gliderwork).
- 1.8. Grob single seat gliders Incorrect routing of shoulder harness. Circular letters RS 306 and 320 (herewith) requires immediate attention. Could apply to other types. Harnesses which "creep" through the buckles on any type, are dangerous.
- 1.9. ASW 20s In flight structural failures (in France) Schleicher AD/87-148 (herewith), was mailed to owners (26.10.87) and requires modification to the TRIM system.
- 1.10. Kestrel Rudder Actuators A recently supplied replacement part failed (on the ground) at Talgarth. Slingsby's have undertaken to locate the remainder of a batch of six. If you have fitted a replacement actuator in recent months, please check with Bill Morgan at Slingsbys. (An annual NDT inspection is required).

- 1.11. Pacific Scientific Restraint Harnesses (possibly supplied by Fredrich Gadringer of West Germany). F.A.A. A/D 87/20/05 (herewith) may apply in the U.K.?
- 1.12. Centrair ASW 20 F/FL Aileron Vibration SB 11 (herewith) applies
- 1.13. Major repairs. Rigging checks and flight testing. On the completion of major repairs, and after the weight and balance has been checked, systematic flight testing is required to establish the correct trim and handling characteristics of gliders and motor-gliders.
- 1.14. Modifications B.G.A. Technical Procedure Manual Section 15 outlines the procedures to be followed when modifications are contemplated (other than manufacturers or B.G.A. approved modifications). The installation of a more aft hook in a Dart 17 failed, because of the embodiment failed to comply with B.G.A. "major" mod approval.
- 1.15. Inspection and Maintenance Standards (Generally). Whereas the ultimate responsibility for the quality of airworthiness (and operation), maintained at all times, lies either with the owners of gliders or the club management team as a whole, B.G.A. inspectors must set standards which will survive the test of time. In particular, the following points must be checked:-
- a) Corrosion of tubular structures, often covered by fabric (A.I.B. comment of Falke accident).
  - b) Accuracy and legibility of placards.
  - c) Excess backlash in control systems, which may lead to vibration (flutter).
  - d) Rectification of short term repairs to both wood, fabric, G.R.P. and metal structures.
  - e) Accuracy of weighing data (within the commonsense limits of available equipment).
- 1.16. Hoffman Dimona (H.36) In-flight break-up. A.I.B. Bulletin 10/87 (herewith) highlights the irresponsibility of attempting I.F.R. flights in such motor-gliders.
- 1.17. Extracts from G.A.S.I.L.s. (General Aviation Safety Information Leaflets)
- a) RF4D - Possible Mogas malfunction
  - b) Continental O-200 (Jodel) Oil leak.
- 1.18. "Inspection Guidelines & Techniques Applicable to Sailplanes of Composites Construction". This leaflet, produced by Doug Jones, Chairman of the B.G.A. Technical Committee, will be published in "Sailplane and Gliding", and applies equally to both owner/operators and to B.G.A. inspectors. Club Technical Officers please give it wide circulation.
- 1.19. Ka.21 Undercarriage Retention stud failure. Failure, possibly due to corrosion or fatigue, of the bolts securing the wheel assembly to the shock absorber rubbers, allows the wheel to drop down, retained only by the brake hose!
- 1.20. PA 18 Cubs Cracks in Undercarriage Assemblies 75% cracks in the tubular cluster to which the mainwheel axle is welded, is reported by Roger Targett - Bristol & Glos. G.C. (Cracks have also been reported at the upper attachment fittings).
- 1.21. SHI (B.G.A. 2222) Incorrect Routing of the rudder cables in the cockpit area. The cables were not threaded through the fairleads!

- 1.22. Jantar (all series). Failure of aileron control tube bearing support assemblies (Repeat of TNS 7/8/87).
- 1.23. Bellanca (Models 17-30/30A/31/31A/31TC/31ATC) AD/87/11/01 draws attention to water in the fuel system caused by poor filler cap sealing, and blocked scupper drains.
- 1.25. Falke Aileron Jamming (Ref TNS 9/10/87) The failed bearing was in the CENTRE IDLER between the two control columns. Inspect daily. (Reported by P. Manley).
- 1.26. Pik 20 Series Sailplanes A/D M.1479/87 Issued 11/11/87 requires inspection of the Aileron Mass Balances (lead strips) for security of attachment, at each Annual Inspection.

PART 2 GENERAL MATTERS

- 2.1. Stamo (and other V.W. Variants) David Bonshall, Dukeries Aviation, Netherthorpe Airfield, Nr. Worksop (0904 481807) may be able to help.
- 2.2. Oxygen Cylinder Testing (not exceeding 5 yrs) can be carried out by Life Support Engineering, Storrington, West Sussex. (09066 2322)
- 2.3. Light Aircraft Radio Approval I.C.O.M. IC=A20-720FX is now approved by C.A.A.
- 2.4. SF 25B - Falke - Propeller Approval Ken Fern Propeller Type KF 5626/UL/SI/V4 has been flight tested by the Doncaster G.C. at Burn, and approved by B.G.A. (Ken Fern Kidsgrove 73140)
- 2.5. Chipmunk, Auster, Tiger-Moth & Gipsy spares Vendair Ltd. at Biggin Hill has been visited by C.T.O. and is a veritable Aladdin's cave of aeronautical bric-a-brac. Contact John Longmoor (09594-72251) - (Includes AGS/AN hardware).
- 2.6. Structural Adhesives World War II (traditional) aircraft adhesives have long since been overtaken by technological developments. Adhesives meeting either M.o.D./D.T.D. 5577 or British Specifications (B.S.) may be selected for aircraft repairs as appropriate. Formal specifications for G.R.P. materials do not seem to have been produced so far, and must therefore comply with manufacturers recommendations and repair procedures.
- 2.7. B.G.A. Inspector's Liability Insurance covers only the liability which might be incurred as follows "All activities and/or responsibilities of the Assured directly in connection with the airworthiness certification of sailplanes and/or gliders, and/or motor-gliders, as set forth .....". It does not cover the insurance of gliders as such, only the liability caused by the fault or negligence of the Assured in pursuit of the above activities.
- 2.8. INSPECTOR RENEWALS 1987/88. If you have failed to renew, both the above insurance cover, and the supply of TNS will cease, with this issue! (£15.00 a.s.a.p.)

- 2.9. B.G.A. GLIDER C. OF A. RENEWALS FROM JANUARY 1ST 1988 WILL BE INCREASED TO £25.00 the first increase since 1985!
- 2.10. Motor Glider C. of A. Renewals (Annual Inspections) may be completed 62 days before expiry. Why do so many applicants leave their renewals so late, and thereby loose the use of their aircraft. Ref. CAP 411 (Light Aircraft Maintenance Schedule) Page 5/1 (2).

HAPPY CHRISTMAS TO ALL OUR READERS WORLDWIDE

from the B.G.A. Technical Committee

and many thanks for all your contributions and efforts  
towards the maintenance of airworthiness standards.

R.B. STRATTON  
CHIEF TECHNICAL OFFICER  
1st December 1987.

C I R C U L A R   L E T T E R

RS 306 - 1/87  
RS 320 - 1/87

HARNESSES

To foreign authorities  
To the LBA  
To aviation shops  
To all agents and owners

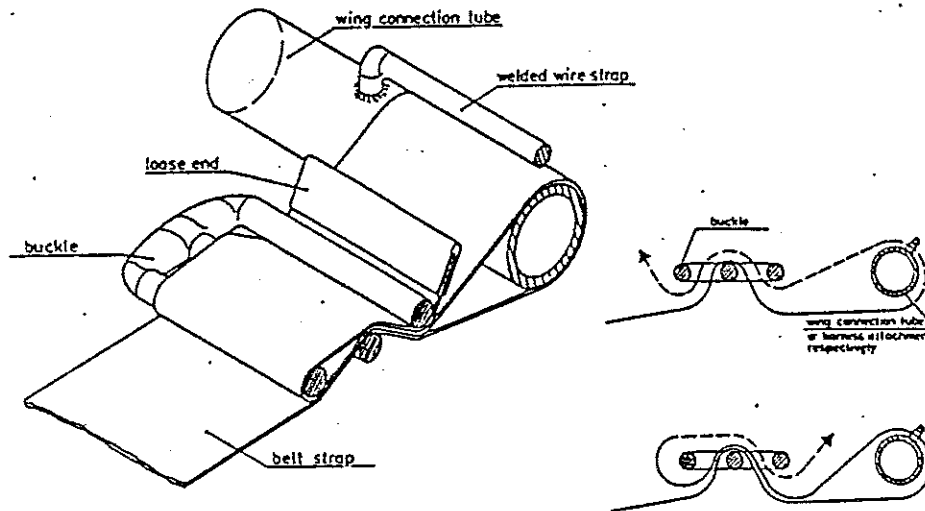
Single-seated Gliders, Models GROB G 102 and G 104

We noticed in the maintenance- and repair service that the attachment of the shoulder harness was more and more done in the wrong manner at the sailplanes of the series ASTIR CS, CS 77, CS JEANS, STANDARD II and III and Club II and III(b) as well as SPEED II and II b.

The harnesses were only put through the welded wire strap on the front wing connection tube. These wire straps prevent only an axial slipping of the harnesses.

The attachment is inadmissible and can lead to dangerous injuries already at minor accidents.

The correct attachment of the harnesses is made as per the following sketch:

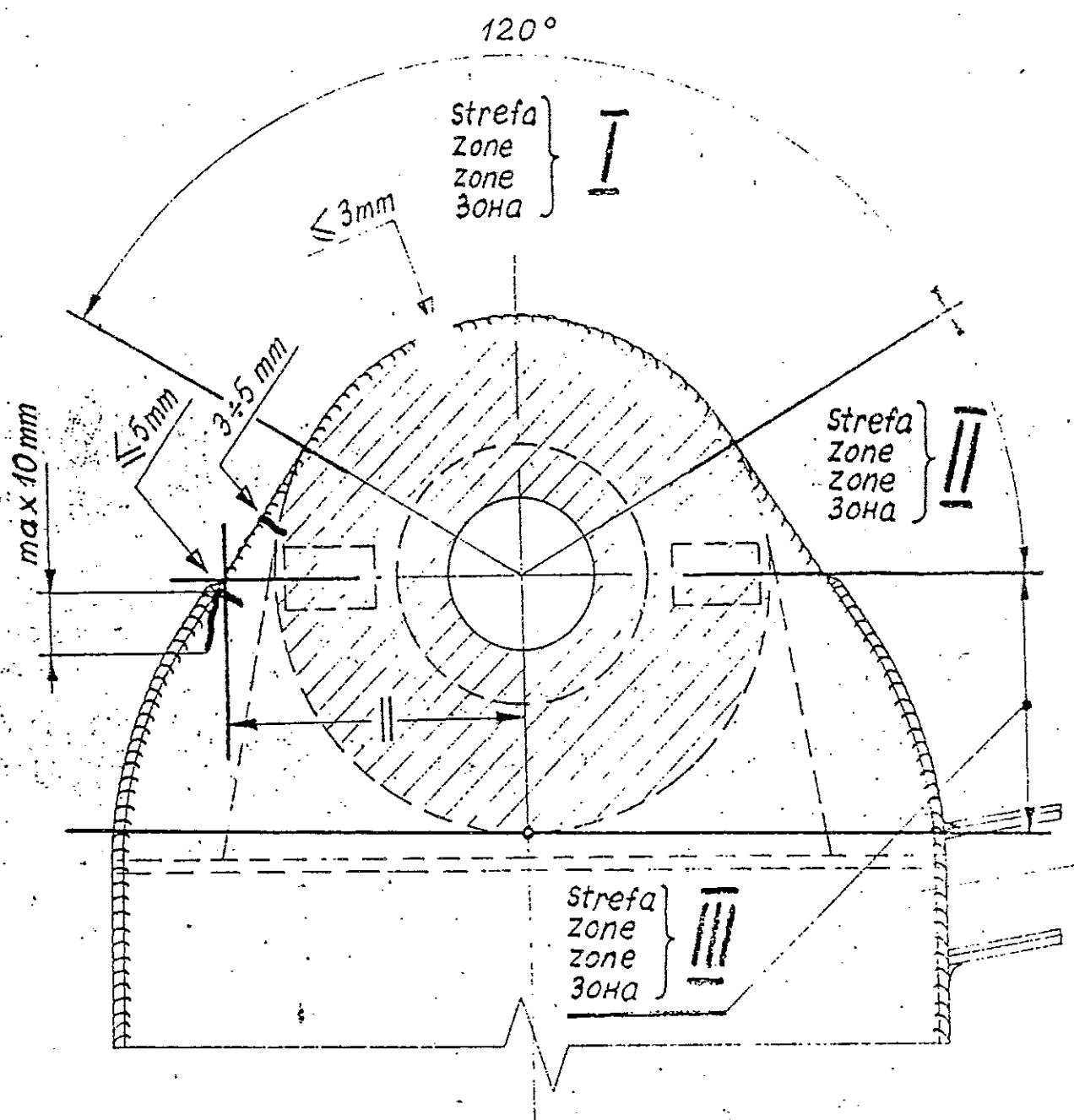


Special attention has to be paid to putting the harnesses correctly through the buckle. At harnesses of Autoflug, the loose end should be folded backwards through the upper strut.

Sincerely yours,

*K. Frisch*  
K. Frisch  
Repair Manager

*R. Rischer*  
R. Rischer  
Airworthiness Engineer  
Certification Staff



BOCIAN D/IE. ALLOWABLE REPAIRS. MAIN FITTINGS

Fig.1.

REPORT Japets to

PETER Clifford Aviation  
White Waltham Airfield,  
Nr. Maidenhead. Berks  
SG6 5NH  
(062-882-3341)

BGA TNS/10/11/87

7/10/87



Nat. Corp. Uherské Hradiště

member of

**Cero** Trust of Czechoslovak Aeronautical Works Prague  
Czechoslovakia

# MANDATORY BULLETIN No. L 13/062

Sheet...1....

of.....3....

Effectivity: All gliders L 13 and L 13 A Blaník after they have flown 2.000 hours.

Reason: On one glider was during the operation investigate a crack fissure on the flange strap situated on the wing's main spar lower flange in the area of the hinge.

Description: An inspection of the flange strap and the visible parts of the wing span have to be carried out.

To be accomplished not later than: By the next 50-hours periodical inspection.

To be accomplished by: Check by user.

Cost covered by: Not applicable.

Material availability: Without material.

Validity: Immediately after bulletin delivery.

Ing. Karásek

.....  
Manufacturer

Ing. Lukas

.....  
Customer's Representative

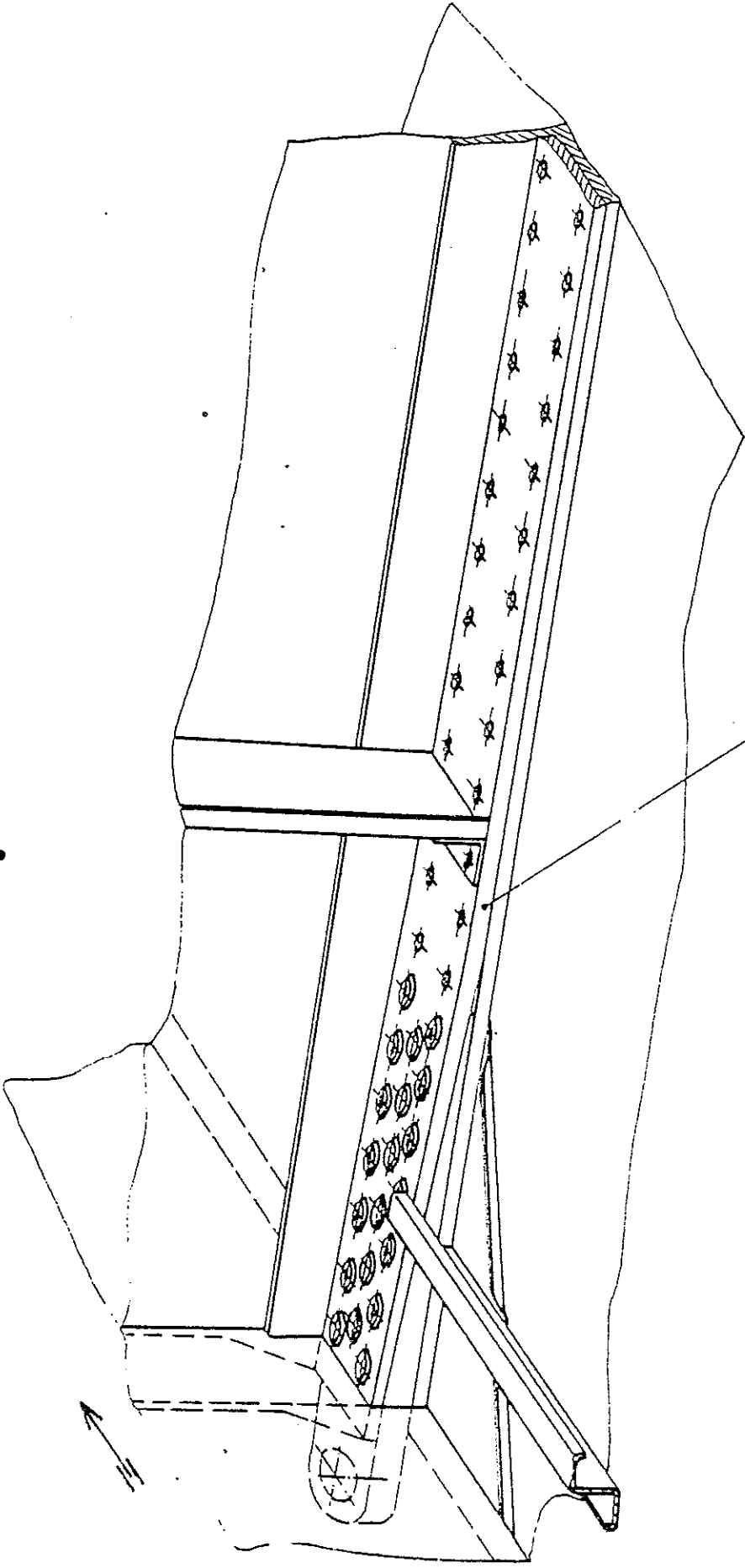
Ing. Olsen

.....  
State Aviation Inspection

Ing. Sovák

.....  
Ministry of Foreign Trade

1



202-2112  
L13.201-2112

202-2112  
Л13.201-2112

L13/062

Vypracoval  
Ing. Zajíček

Kontroloval  
*[Signature]*

Schválil  
*[Signature]*

List  
3



**OBJET : VIBRATION D'AILERON**

Planeurs concernés : tout planeur ASW20F et ASW20FL  
n° de série 20 101 à 20 199  
et 20 500 à 20 532 inclus

Applicabilité : immédiate avant tout vol

Des problèmes de vibrations d'ailerons à des vitesses supérieures à 200/210 km/h, les volets en position 1, ont été rencontrés sur des planeurs ASW20. Les bandes adhésives colmatant les fentes d'ailerons ont été mises en cause, objet du bulletin de service Schleicher n° 31.

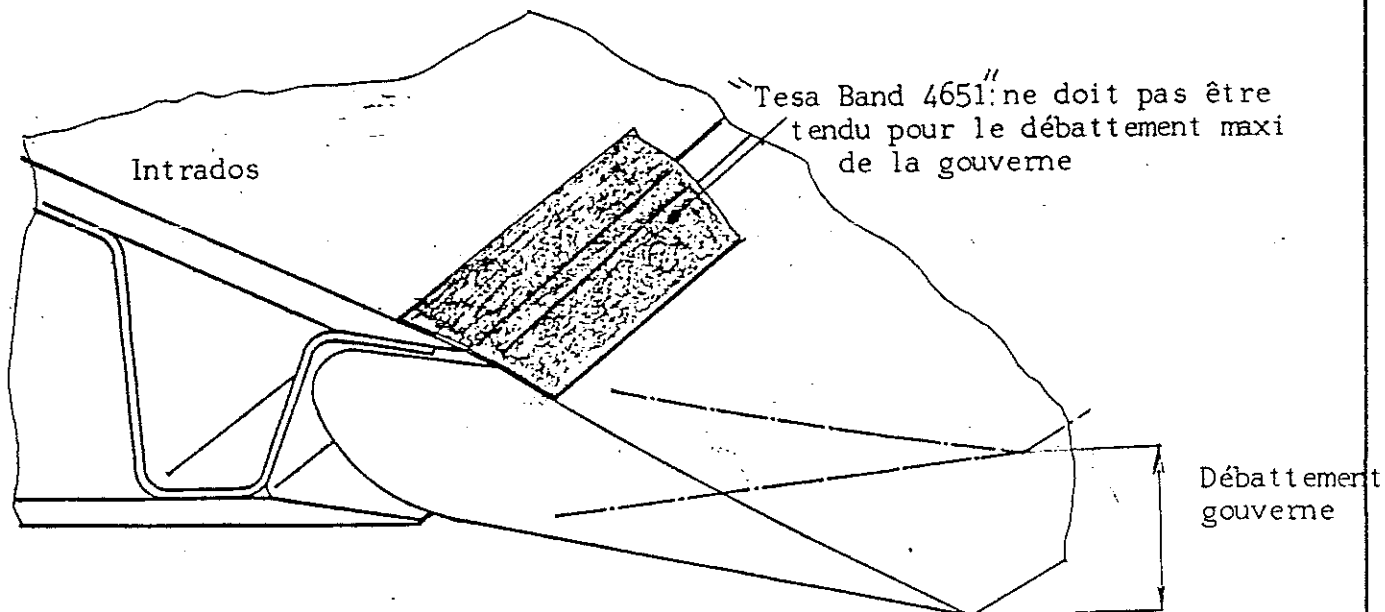
La Société Centrair désire que ces mesures soient étendues aux planeurs ASW20F et ASW20FL.

Dispositions à prendre :

Avant tout nouveau vol, s'assurer que les fentes d'aileron sont correctement colmatées :

- 1) avec du ruban adhésif Tésaband 4651 (blanc largeur 38 mm)

Dans ce cas, le montage doit être réalisé suivant le croquis ci-dessous.



To ALL OWNERS

ASW 20

TNS 19/10/87

TNS 11/12/87

URGENT.

AIRWORTHINESS DIRECTIVE

87-148 Schleicher

Date of issue:  
August 06, 1987

Affected sailplane:  
German Type Certificate No. 314  
ASW 20 and ASW 20 L  
serial number 20001 through 20611

Subject:  
Unintended PIO (pilot induced oscillation)

Reason:  
Pitch oscillation

Action and compliance:  
Action to be accomplished in accordance with Technical Note before  
the next annual inspection, but not later than March 31, 1988.

Technical publication of the manufacturer:  
Schleicher ASW 20 and ASW 20 L,  
Technical Note No. 30 of April 1, 1987

which becomes herewith part of this AD and may be obtained from Messrs.  
Alexander Schleicher, Segelflugzeugbau, D-6415 Poppenhausen,  
Federal Republic of Germany

Accomplishment and log book entry:  
Action to be accomplished by a skilled person and to be checked and entered  
in the sailplane's log by a licensed inspector.

BGA Note : 26/10/87 To all owners:

We understand from CHRIS BUTTY, (now  
in France), that there have been 5  
in-flight break-ups of ASW 20's in France,  
of which at least one was fatal!

This Airworthiness Directive and Tech Note 30,  
explain both the problem and the solution

to better copies.

SEXT:  
1 of 1

ASV 20 / 20 L  
Technical Note  
No.30

Alexander Schleicher  
Segelflugzeugbau  
6416 Poppenhausen

With the elevator in the zero position, the trim knob must be adjusted at about 10 mm behind the front edge of the slotted gate; the adjustment is done at the universal joint of the trim spring pot. Finally check that all parts are free-moving and re-install the seatpan.

4. If the 4-part, asymmetric AUTOFLUG safety harness (consisting of shoulder harness FAG 7B-1, and lap belt FAG 7K-1) is installed in your glider, it must be checked whether the short lap belt member is mounted at the right cockpit wall (in flight direction ) and is diagonally opposite to the long shoulder harness which is mounted at the main bulkhead close to the red parachute static line anchoring ring. Only then the prescribed position to strap oneself in can be achieved.
5. Exchange the following pages in the respective Flight and Operations Manuals:-  
ASV 20: p. 13, 19, 20, and 38;  
ASV 20 L: p. 14, 20, 21, and 42;  
for pages with the same numbers but with the reference entry of T.N. no.30 dated 01.04.87.  
These pages give important notes for preventing PIO.
6. The exchange of the pages in the Manuals must be documented on page 4 "Amendments to the Manual".

Material & drawings:

See drawings: 200.11.54: 200.48.0001; 200.48.0012; and 200.49.0030.  
Manual pages as stated under above para ACTION, points 5 & 6.

Mass and C.G.:

The influence of this mod is negligible.

Notes:

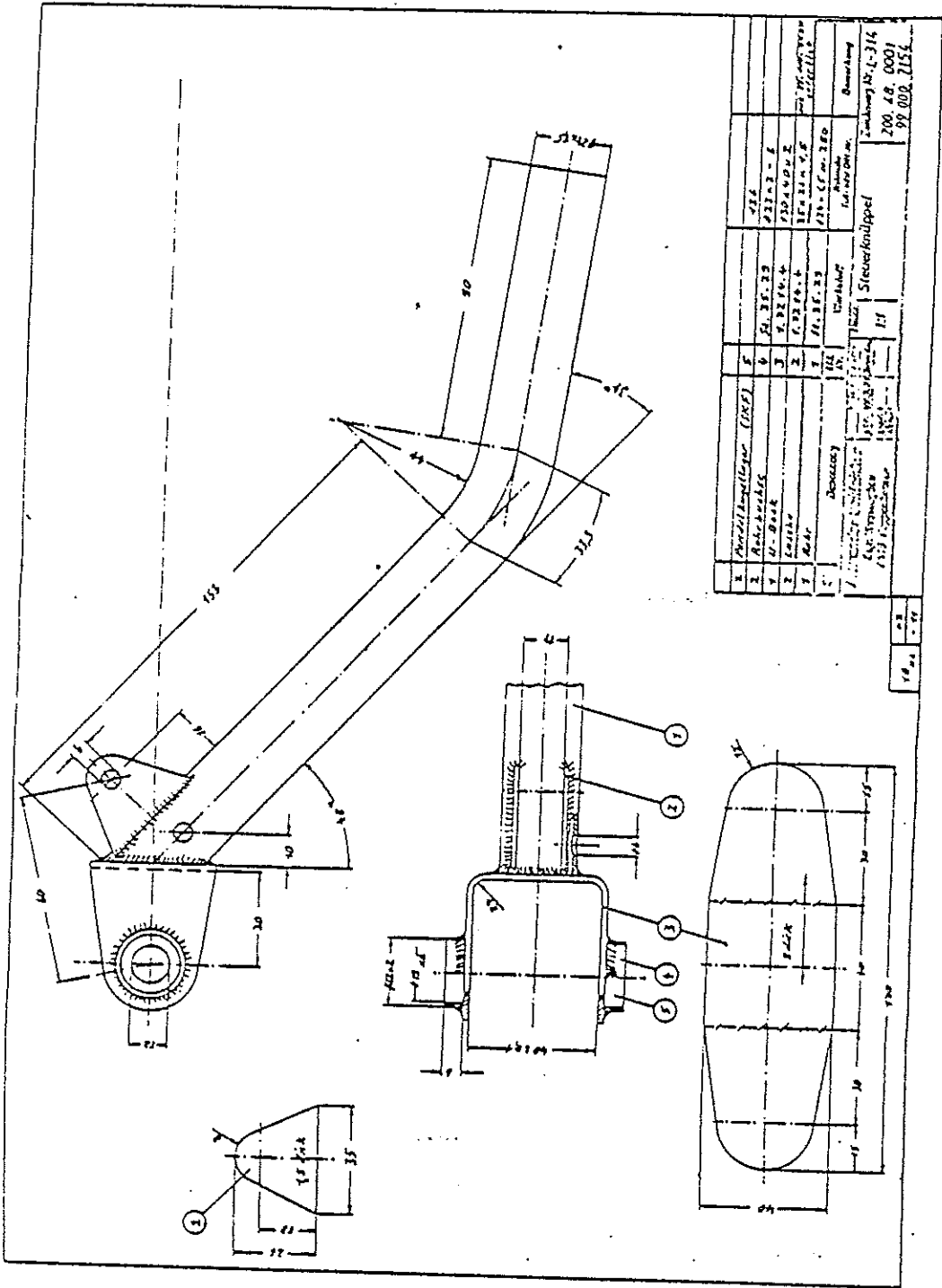
This action can be accomplished by a competent person. The accomplishment of this mod must be inspected by an aviation inspector holding the appropriate license and certified in the glider logbook and in the inspection certificates.

Poppenhausen, April 1, 1987

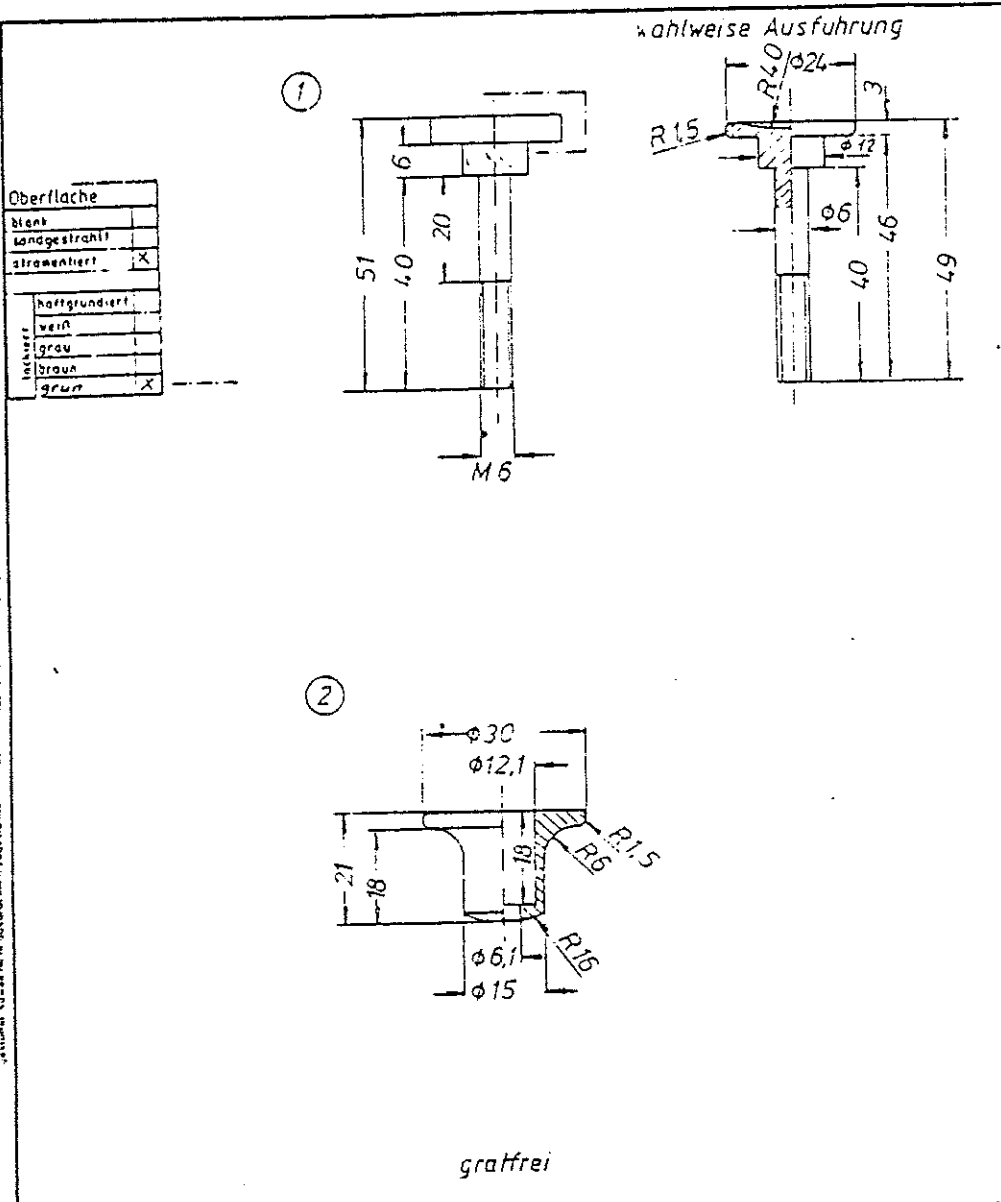
ALEXANDER SCHLEICHER  
GmbH & Co.

*Gerhard Vaibel*  
Gerhard Vaibel.

The German original of this Technical Note has been approved by the LBA under the date of April 10, 1987 (signature: SCHAALJOHANN). The translation into English has been done by best knowledge and judgement; in any case of doubt the German original is controlling.



№	Наименование (ГОСТ)	Кол-во	Материал	Примечание
1	Полукопачка (ГОСТ)	1	Ст 3	
2	Пружина	2	Ст 3	
3	Шайба	2	Ст 3	
4	Гайка	2	Ст 3	
5	Шпиль	2	Ст 3	
6	Шайба	2	Ст 3	
7	Гайка	2	Ст 3	
8	Шпиль	2	Ст 3	
9	Шайба	2	Ст 3	
10	Гайка	2	Ст 3	
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100	Гайка	2	Ст 3	



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grau	
grün	X

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gratfrei

1	Klemmgriff	2	RCH 1000	φ 30 - 21		
1	Rändelschraube M6 x 40 (45)	1	wahlweise Al-Leg.	DIN 464 - 5.9	ohne Rändel!	
SI	Benennung	LH Nr	Werkstoff	Norm oder DIN-Nr.	Bemerkung	
		Datum	Name	Typ	Bemerkung	
		Beord	19.03.87	Juw	Klemmgriff für Trimmung Einzelteile	
		Gepnu		ASW 20		1:1
		Norm				
		A. Schleicher GmbH & Co Sägezugzeugbau 8616 Pöschelshausen		Zeichnungsnummer L-314 200.49.0030	TM-Nr. 30	
Just	Anderung	Datum	Na	Urspr	Ers I	Ers d

Blatt  
2  
2/31

Ref BGA TNS 7/18/87 Item 1.28

FREDRICH RADINGER (W. Germany)

**PACIFIC SCIENTIFIC COMPANY**  
**Airworthiness Directive**  
**VOLUME I**

87-20-05 PACIFIC SCIENTIFIC COMPANY: Amendment 39-5693.  
Applies to TSO C22f lap belt assemblies, part number 1107177  
(all dash numbers), manufactured between September 1, 1984, and  
January 1, 1986.

Compliance required within 180 days after the effective  
date of this AD, unless previously accomplished.

To eliminate lap belt assemblies with belt retractor shafts  
which do not provide adequate strength, accomplish the  
following:

A. Inspect all Pacific Scientific TSO C22f lap belt  
assemblies, part number 1107177 (all dash numbers), in  
accordance with Pacific Scientific Company Safety Advisory  
Letter (on the Mark V Reel Lap Belt Assembly, which deals with  
this problem), to determine if they have part number 1106294-01  
retractor shafts made of the correct material. This is  
determined by visual examination of the end of the shaft: If  
the color is gold anodize, the shaft is acceptable. If the  
color is a dull battleship grey anodize, the shaft must be  
replaced prior to further flight.

B. Alternate means of compliance which provide an  
acceptable level of safety may be used when approved by the  
Manager, Western Aircraft Certification Office, FAA, Northwest  
Mountain Region.

C. Special flight permits may be issued in accordance with  
FAR 21.197 and 21.199 to ferry aircraft to a maintenance base  
in order to comply with the requirements of this AD.

All persons affected by this directive who have not already  
received the appropriate service information from the  
manufacturer may obtain copies upon request to Pacific  
Scientific Company, 1346 S. State College Boulevard, Anaheim,  
California 92803. These documents may be examined at the FAA,  
Northwest Mountain Region, 17900 Pacific Highway South,  
Seattle, Washington, or at 15000 Aviation Boulevard, Hawthorne,  
California.

This amendment becomes effective October 26, 1987.

FOR FURTHER INFORMATION CONTACT: Mr. Walter Eierman, Aerospace  
Engineer, Western Aircraft Certification Office, ANM-173W, FAA,  
Northwest Mountain Region, 15000 Aviation Boulevard, Hawthorne,  
California; telephone (213) 297-1388.

No: 10/87

Ref: 1c

**Aircraft type and registration:** Hoffman Aircraft H36 Dimona Motor Glider HB 2071

**No & Type of engines:** 1 Limbach L2000 EBI piston engine

**Year of Manufacture:** 1983

**Date and time (UTC):** 20 July 1987 at 1345 hrs

**Location:** Over Norton, nr Chipping Norton, Oxon

**Type of flight:** Private

**Persons on board:** Crew — 1                      Passengers — 1

**Injuries:** Crew — 1 (fatal)                      Passengers — 1 (fatal)

**Nature of damage:** Aircraft destroyed

**Commander's Licence:** Private Pilot's Licence — Swiss (Motor Gliders)

**Commander's Age:** 59 years

**Commander's Total Flying Experience:** 742 hours on gliders and motor gliders (of which 78 hours were on type)

**Information Source:** AIB Field Investigation

The pilot filed a Visual Flight Rules (VFR) flight plan for the intended journey from Southend, where the pilot and passenger had stayed overnight, to Cork in the Republic of Ireland. The estimated flight time was 5 hours and 30 minutes, with an endurance of 7 hours.

The aircraft's route as reported on RTF, and tracked by radar, took the flight from Southend to Barkway VHF omni directional range (VOR), to Daventry VOR, and after at least one orbit in the vicinity of an area of weather clutter observed on the Controller's radar, proceeded to track in a south westerly direction from Daventry. A number of excursions away from the aircraft's expected track were observed. After leaving Southend the pilot had contacted Stansted, Bedford and Brize Norton, and appeared to have had some difficulty in interpreting the communications. He also flew at between 1000 and 5000 feet without advising ATC of changes of height. At 1342 hrs Brize Radar requested a right turn to 300°, identified the aircraft, which had no transponder, and asked that the aircraft should remain on the same heading for traffic avoidance purposes. This request was acknowledged and in response to a further enquiry to Brize Radar the pilot reported that the aircraft was at 5300 feet, and after further prompting, that he was climbing. At 1344 hrs the radar controller queried the aircraft's southerly heading and asked for a resumption of the 300° heading. This was again acknowledged, and there was no further RTF communication with the aircraft. A recording of Heathrow's radar at the time, indicates that the aircraft turned left from its requested north westerly heading, onto a southerly heading, then the radar returns became disrupted and disappeared.

Witnesses in the area of Chipping and Over Norton heard the sound of a high revving engine followed by an explosive noise, or crack, with no further engine noise. The weather was a low

BRITISH GLIDING ASSOCIATIONINSPECTION GUIDELINES & TECHNIQUES APPLICABLE TO SAILPLANES OF COMPOSITESCONSTRUCTIONINTRODUCTION

The high performance sailplane has been at the fore front of expanding aerospace technology by exploiting the potential of glass and carbon fibre composites since the late 1950s.

Several thousand sailplanes constructed from these materials have been produced which in itself is significant in comparison with the aerospace industry as a whole.

Based upon the considerable experience of sailplane operation there are two aspects which are receiving particular attention namely:- Detection and diagnosis of damage and durability of Gel Coats.

This note will serve as general information and clearly cannot cover every eventuality.

1. INSPECTION TECHNIQUES

At the aerospace industry is expending considerable sums of money developing non destructive testing (N.D.T.) technique requiring expensive scientific equipment, this approach is not available to the gliding movement in general.

Since the high performance sailplane consists essentially of closed cell structures with the minimum of access panels necessary to ensure aerodynamic smoothness, this does however impose constraints upon maintenance and potential damage assessment.

One can draw an analogy with the medical field in diagnosis of potential defects before applying surgery. Examples are Stethoscope, endoscope, X ray (portable), and dye penetrants which can be particularly useful pieces of equipment for diagnosis. It often pays to borrow equipment of this type where possible. Portable X ray has been used to determine bearing failures in control systems and pinpoint positions



Examination of the wing structure following a groundloop is also necessary. Initially visually check over the upper and lower wing surfaces for evidence of distortion of the light lines which can indicate permanent deformation due to buckling of the wing shell. In addition examination of the root ribs & spigots is also necessary. Another important point in inspecting for damage is to seek further expert opinion if in doubt as to structural integrity.

Alternatively coin tapping can be an effective method of detecting damage, to the trained ear. The principle is that a structural element will respond to a mechanical excitation by vibrating and generating a specific tone. If damage or a fault is present there will be a change of tone due to the change in its vibration response.

Another simple aid to assess the extent of damage is the use of a penetrant dye. If the laminate is damaged the dye will penetrate the fracture path. I have seen a compression shake in a spar boom whereby the evidence at the wing surface was a barely visible crack, and upon checking with a dye the spar boom was fractured completely. This type of failure is similar to that which can occur in timber in that the initial visual evidence may appear innocuous but in reality the implications are very fundamental.

The determination and extent of damage must be carried out methodically and thoroughly. Where repairs are required these must be carried out in accordance with the manufacturers maintenance handbook and where damage exceeds the scope of repair as defined by the manufacturer then repair schemes must be approved by them. The principal of repair is to restore the structure to its design standard. This applies whether the sailplane is constructed from wood, metal or composites.

Two factors which are also important to check after repairs are re-weighing & determination of the C of G position & re-calculating max & min cockpit loads and in the case of repairs to flying controls to check the correct control surface balance. Changes to balance can have an adverse effect upon flutter speed.

It is also desirable to know the natural frequencies of the wing and the fuselage/empennage combination. These can be measured by simply counting the cycles/minute by inducing the wings to oscillate at their natural frequency and