

B.G.A. TECHNICAL COMMITTEE

TECHNICAL NEWSHEET

TNS 7/8/86

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PART 1 Airworthiness "Aggro" (Please add to the 1986 Pink Pages).

- 1.1 DG100, 200, 300, 400, series gliders & motor gliders, "Marking of canopy emergency release and ventilation controls". A copy of the representative manufacturer's Technical Newsheet requires immediate action.
- 1.2 YS 53 Frame 6 (Centre section) Inspection. In addition to the inspection for cracks (TI 100/TNS/8/85), Loose rivets and corrosion have been reported by Roy Proctor. (Devon & Somerset Gliding Club).
- 1.3 T 65 Vega - Flutter. Notwithstanding compliance with Tech/Inst/104 and B.G.A. TNS/11/82, 13/84, 7/83, a severe case of flutter, resulting in tailplane/elevator damage, has been reported by R.A.F.G.S.A. (Germany).
- 1.4 SF 27 "Flutter". A phenomena believe to have been flutter, was caused by vibration of the speed-brake capping strips. (Reported by Newark & Notts Gliding Club).
- 1.5 Grob 103 Twin Astir/Twin II/Accro (with offset rudder hinges), delamination of the fin skin from the reinforcing rib has been reported by R.A.F.G.S.A. Bicester.
- 1.6 Kestrels (and other types with Rudder Drive Actuators). A notice was mailed to all Kestrel owners (5/6/86) following failure of a rudder drive actuator, and departure of the rudder (and the pilot) from the glider! A note on the actions require (Annually), prepared by John Knowles, R.A.E. Gliding Club, is attached herewith.
- 1.7 ASW 20's with Tail Ballast installations. Adequate placarding must be provided to guard against inadvertent operation beyond the aft c.g. limit when tail ballast is installed. (Reported by J Scott).
- 1.8 Bergfalke 2 - Water ingress and structural damage at the tailplane front attachment. Serious deterioration and loss of structural integrity has been seen on this type. In depth inspection is required a.s.a.p.
- 1.9 KA18 Bracks in the torque - tube assembly in the area to which the wheel-brake cable is secured (possibly caused by incorrect adjustment of the wheel-brake?) (Reported by R.A.F.G.S.A. Germany).
- 1.10 KA18 Cracks in the "L" shaped rod in the elevator trim system, probably caused by the worn ratchet allowing the rod to "float" and hit the stops. (Reported by R.A.F.G.S.A. Germany).
- 1.11 SHK Speed-brakes - Unlock during take-off ground run. Incorrect adjustment may have contributed to subsequent aero-tow accident. (Reported by J Scott).
- 1.12 T 51 Dart. Hook-Hang-Up. The attached sketch clearly illustrates the problem of incorrectly inserting the ring, and recommends a cure. (Reported by P.A.Ward Midland Gliding Club).
- 1.13 Rotax Motorised glider engines type 505. Rotax tech/note 505-01 requires checking or replacement of cylinder hold-down studs. Details from Bombadier-Rotax GMBH, A 4263 Gunskirchen. Austria, or local agents.

- 1.14 T 61's - Water damage in the wings, in the "D" box from the root rib almost to the aileron. Also substantial evidence of non-bonding of spar web to cap, during manufacture. Reported by G.F.A. Australia on T 61's imported from Singapore as desk cargo! (Reported to Slingsby's).
- 1.15 Extracts from G.A.S.i.L's. Copy herewith:-
- (a) Gross Navigational Errors - compass NOT SWUNG. (Could apply to tugs, gliders, and motor-gliders).
  - (b) DHC 1 Chipmunk - Flap hinge broken. (Corrosion damage is possible on all hinges).
  - (c) Robin HR100/210 Canopy Jettison - Lever faulty.
  - (d) Avgas Deterioration - Rubber components.
- 1.16 Mogas in GRP Fuel Tanks (Schleicher M-G's). Schleicher letter to owners dated 19th June 1986 is advisory only. It is believed that high alcohol content autogas in Germany may be the cause of G.R.P. tanks becoming opaque. (There is no suggestion that they leak or that sludge deposits form which may foul the system but it would be wise to inspect daily for such changes). (Letter attached).

(B.G.A. Note, Hoffman H36 Dimona. GRP Tank replaced by Metal tank to remedy restrictions of fuel feed by deposits in the fuel tank.

- 1.17 Grob 109 (A) Fuel vapour locking. Cases have been reported of engine malfunction after Take-off. One operator believes that the problem is resolved by NOT using the electric pump. Cases should be reported to B.G.A. and Grob Agents. (0491 37184).
- 1.18 Testing Pitot/Static systems Because of the extensive use of plastic pipework, Tee pieces, adaptors etc, much of which is improperly "stretched" and inadequately secured, it is essential to leak-test the entire installed system. The ASI(s) can likewise be calibrated. Rubber bottle stoppers (from the local chemist can be adapted to fit Pot-Pitot Systems). Your latest, expensive, computerised air-data lift detecting system is valueless, if the pitot/static system has not been leak-tested. (Some such equipments have calibrated internal leaks!) (Suggested by J Scott).
- 1.19 T 61 Series motor-gliders -Cracks in OUTRIGGER attachments. H.Q. Air Cadets have reported cases of cracks which may lead to separation of the Outrigger from the aeroplane, and a headache for interested parties.
- 1.20 Schweitzer Type (Banner towing hooks) when used for glider towing, have very high operating release loads if the glider gets out of position. B.G.A. Minor Modification (BGA/T/1/85) developed by the Borders Gliding Club introduces a sealed ball race to secure the latch. Dramatically reduces the loads. (Copies from BGA Office).
- 1.21 Slick Magneto's - Cracked Coils
- FAA A/D 81/16/05 (Slick S/B 1/81) requires replacement of coils, which may otherwise cause malfunction. Where modified coils have been fitted, the suffix "D" will be stamped following the last digit of the serial number on the data plate. The AD should have been embodied in 1981, but some stocks of unmodified magnetos may be in circulation, and should be modified a.s.a.p. (Especially if you fly over water!) (In response to a report by R Proctor).
- 1.22 Slick Magreto's - Impulse Couplings - AD 74/18/05 requires inspection for loose rivets securing the pawls, and AD 80/06/06 requires that the hardness of the pawls be checked with a file.

PART 2 General Matters

- 2.1 Jantar STD, Extention of fatigue-life from 1500hrs to 3000hrs, subject to major inspections at each 1000hrs, is promulgated in PZL Bulletin BE-026/86. Applicable to SZD 41, 41A, 48, 48-1, 48-3, serial no's as listed. (Details from Anglo-Polish Sailplanes, Wycombe Air Park, Booker, Marlow, Bucks, (0494-40911).
- 2.2 "Light Aircraft Maintenance" CAA publication CAP 520 price £1.50, from CAA Publications, Grenville House, 37 Gratton Road, Cheltenham, GL50 2BN, is very good value and essential reading for Tug Managers and (M3) Maintenance Organisations, and all who operate under the Light Aircraft Maintenance Schedules (LAMS). (Application proforma attached).
- 2.3 Basic Aerospace G.R.P. Courses, leading to the award of the City & Guilds Laminators Certificate, are available by arrangement with the MARINE BUILDERS TRAINING TRUST, Hazel Road, Woolston, Southampton, SO2 7GB (0703) 446824. B.G.A. have received an excellent report on this course.
- 2.4 Weak-Link Ratings, additional to those notified in TNS 5/6/86, the following should be included:- Blanik - 2000lbs, KA7 - 2000lbs, IS29/30 - 1100lbs
- 2.5 V.W. Engine Specialists, including spare parts, conversions etc., Please contact Acro Engines & Airframes Limited, (0642) 475631.
- 2.6 "Fuel Supplies to Gliding Clubs" The attached note has been circulated to all Clubs, and is self explanatory.
- 2.7 Lead-Free Mogas The attached leaflet published by MURCO gives the best available advice at this time.
- 2.8 Piper Service Bulletin SB 836 - Warns of Over-heating of electrical cable (aluminium cable at cable lug ends), and recommends replacement with copper cable. Applicable to most piper aircraft, including PA-18 and PA-25's. If poor cranking is experienced, inspect the "heavy" leads for signs of discolouration and local heating.

R.B.Stratton  
Chief Technical Officer

August 1986



REPORT ON RUDDER COUPLING KESTREL TYPE

22-6-86

Reference TNS/7/8/86 Dated 5-6-86

## AFFECTS TYPES.

Kestrel.  
Libelle.  
Mosquito.  
ect.

RUDDER DRIVE ACTUATORS.

A random sample of these fittings was inspected by X-ray, Magnetic flux and Ardrex dye penetrant method, (as per attached sheet).

On the broken coupling the failure was not in the weld itself, but in the 'heat stress area' adjacent to it, as is typical of a fatigue failure.

On examination of the rudder, it was found that although the bush was well lubricated, the force required to rotate the actuator was extremely high. This must have been a contributory factor in its failure.

It is not possible to estimate the time scale over which the failure occurred, but it is almost certain that the coupling was subjected to loads well in excess of its design limits. In this case Kestrels are at greatest risk due to the size and weight (Lead mass balance) of the rudder. Loads can be applied during heavy landings etc, which could fatigue the unit over a period of time.

## SUGGESTED ACTION

Remove unit and check visually. Also test with magnetic flux method using: T8~~23~~ magnet and Supramor grade 4 black ink, this check to be carried out annually, or, after suspected loads have been applied to the rudder, eg Heavy landings or impact damage. Check that the rudder to actuator 'fit' is not too tight, and able to rotate with the collar fitted.

JON.KNOWLES. IA/128/M R.A.E. GLIDING CLUB FARNBOROUGH.

## British Gliding Association

Kimberley House, Vaughan Way, Leicester  
Telephone 0533 531051



### MEMORANDUM

To: ALL KESTREL OPERATORS  
(Could apply to Libelle & Mosquito)

Date: 5.6.1986  
TNS/7/8/86

#### Rudder departs from the glider (Kestrel 19)

On June 4th 1986, at Lasham, the rudder departed in flight, and the glider subsequently became uncontrollable.

The pilot (successfully) departed the glider by parachute.

B.G.A. TNS 12/85 drew attention to "Kestrels (and similar designs), cracking of the lower rudder hinge (as reported from Australia)". In this case the weld failed on the pintle of the rudder actuator.

Owners/Operators should make an inspection of rudder installations a.s.a.p.

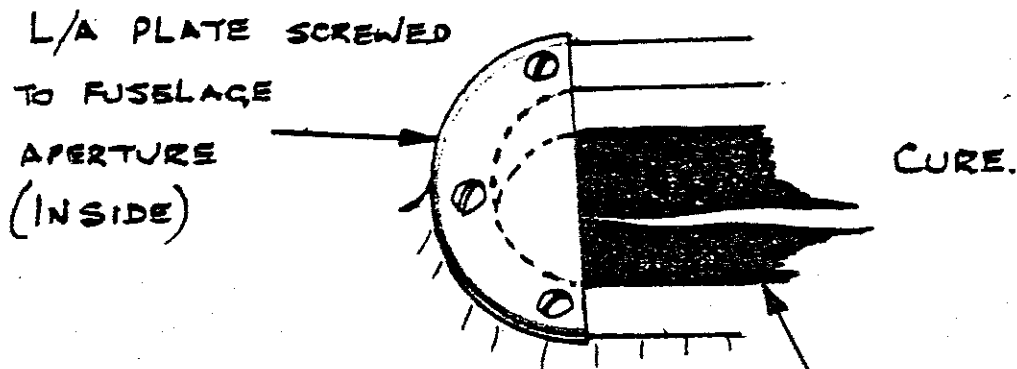
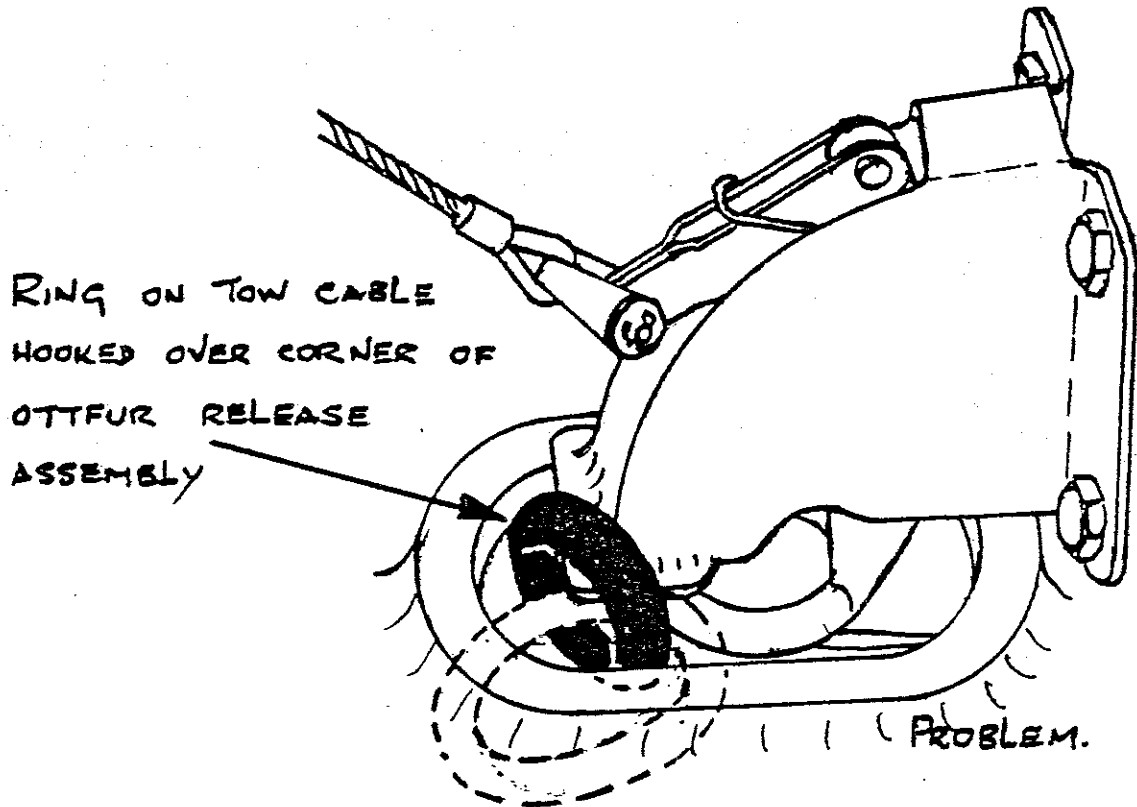
It is possible that damage occurs on the ground, and probably whilst manoeuvring into and out of trailers.

R.B.STRATTON

CHIEF TECHNICAL OFFICER

TNS/7/8/86,

DART. HOOK-HANG-UP.



EXTERNAL SPLIT RUBBER FAIRING INHIBITS  
VISUAL INSPECTION.

RELEASE HANG-UP - DART 17R  
P.A.WARD 1/C/300 ME. M.G.C. MAY 1986.

TNS/323/6 DG 200  
TKR/301/14 DG 100  
TN 826/16 DG 400  
TNS 359/9 DG 300

DG 100, S.F. 200, DG 300, DG 400,

Subject: Marking of canopy emergency release and ventilation

Concerning: DG-400, 4-1 bis 4-176

Accomplishment: Before next flight

- Reason:
- a) As the correct procedure for the emergency release of the canopy seems to be uncommon to most pilots, although it is described in the flight manual, the canopy opening lever should also be marked red. This is to indicate that both, the opening lever and the emergency release knob have to be operated to release the canopy.
  - b) For better identification the placard for the ventilation will be fixed at the ventilation operating knob.

- Measures:
- 1. The canopy opening lever is to be marked red (e.g. red nitro-enamel)
  - 2. The placard for the ventilation is to be removed carefully from the canopy frame, to be cut round and to be glued to the ventilation operating knob. If the adhesive power is no more sufficient, please use a suitable glue (e.g. Pattex).
  - 3. Exchange the following manual pages against the new edition June 1986

~~DG-400~~: Flight manual:

- S. 10 description of the cockpit controls
- S. 24 emergency procedures

Maintenance manual:

- diagram 11 placarding

- 4. Note the changed instructions on the manual pages.
- 5. Check the canopy emergency release.

Remarks: The measures may be executed by the owner himself and are to be attested in the aircraft logs.

Bruchsal 4, 24.06.86



Dipl.-Ing. W. Dirks

LBA-approved:

The German original of this TN has been approved by the LBA under the date of July 1st 1986 and is signed by Mr. Skov. The translation into English has been done by best knowledge and judgment. In any case of doubt the German original is authoritative.



TNS/7/8/86

15. GROSS NAVIGATIONAL ERROR - COMPASS NOT SWUNG

P/E

Aircraft : Piper PA28R-201  
Date : March 1986

The aircraft was being ferried from the United States to the UK. The pilot flew it from the US West Coast to Bangor, Maine where a ferry fuel tank system was installed. The aircraft left Gander for Shannon with fuel for 15 hours.

14.43 departed from Gander, estimating Reykjavik at 02.24 hrs.

21.27 last contact with Gander estimating the NDB on the south tip of Greenland at 21.45.

22.30 Gander contact Reykjavik as the controller was concerned.

00.02 Reykjavik declared an overdue aircraft alert.

01.36 A C130 Hercules en-route Trenton to Keflavik was in contact with the PA28 who said he was lost between Greenland and Iceland.

01.56 Icelandic rescue aircraft took off.

02.50 Located PA28 then 158 nm from Keflavik VOR, the aircraft being well to the south of planned track.

04.50 PA28 landed at Reykjavik.

The reason for the navigational error was that the compass had not been corrected after the steel ferry tank had been installed in the back seat area. The pilot said that he had asked for this to be done and had assumed that it had. A compass swing before the aircraft was allowed to leave Iceland showed the deviations were as follows:-

360°	0
090	-43
180	-1
270	+44

This meant that after Greenland the pilot was on an easterly track and heading up to 43° to the right of track.

CAA Comment:

This could easily have cost the pilot his life, as it was there was a costly search.

After changes to an aircraft which result in the need to re-swing the compass, don't assume it has been done and, at the very least, check it on the runway heading and at right angles to the runway (eg on the taxiway).

16. FLAP ATTACHMENT BRACKET BROKEN

P/E

Aircraft : DHC1 Chipmunk  
Date : February 1986

During pre-flight inspection the left-hand flap inboard hinge bracket was found to be broken and the lower locating bolt was bent. The aircraft had flown 9162 hours.

CAA Comment:

There are no other cases on the SDAU data base.

## **9. SLIDING CANOPY JETTISON LEVER FAULT**

**P/E**

Aircraft : Robin HR100/210  
Date : February 1986

The aircraft was being flown after its Annual Check. At 300 ft the right-hand side of the forward sliding canopy lifted about 2", resulting in the overhead fastener lifting and becoming ineffective. A slow tight circuit was flown for an immediate return.

It was found that the right-hand jettison lever was in the locked position but had not engaged in the pulley. When it was repeatedly unlocked and re-locked it sometimes went into the groove of the pulley and sometimes outside. Therefore, a careful visual inspection and push upwards on the inside of the canopy needs to be made to check engagement. The canopy had been removed during the Annual Check.

## **10. RETRACTION JACK SUPPORTS CRACKED**

**E**

Aircraft : Cessna F177 RG  
Date : April 1986

The Annual Inspection revealed the two supports holding the main landing gear retraction jack were cracked at the short extension piece which protrudes to the rear of the jack attachment trunnion. The aircraft had flown 996 hours.

## **11. AVGAS FUEL - DETERIORATION OF FUEL SYSTEM RUBBER COMPONENTS**

**E**

Cases of fuel leaks, and in one instance a ground fire, have been experienced by one type of older piston engined aircraft in military service.

Investigation revealed that the rubber components in the fuel system were in poor condition; all the items examined were of Nitrile rubber composition. The recommended shelf life for such items is seven years with re-living every three years, however many samples examined during this investigation were packed well in excess of seven years ago and positive evidence of re-living could not be established. In addition some of the packing materials used were superseded many years ago.

Furthermore, the Avgas fuel used immediately prior to these problems was found to have an aromatic content of 6% i.e. significantly below the "norm" experienced to date. The existing UK Avgas specification DERD 2485 in common with equivalent international Avgas specifications does not specify any limits (for aromatic content for 100 Octane fuel). An average of 15/16% by volume has tended to be the "norm" for a considerable period.

Tests have confirmed that the above types of rubber when exposed to fuel with low aromatic levels of the order above, exhibit significant shrinkage. The combination of seals which had been in service for a long time and shrinkage due to the low aromatic fuel, resulted in fuel leakage.

The current situation in the oil industry and a need to obtain maximum yield of products per barrel of crude oil, has resulted in a tendency towards a less consistent product which nevertheless still meets the required specification and the probability of Avgas supplies with varying aromatic content is likely to increase.

Operators of piston engined aircraft, particularly the older types, should be aware of the above and bear them in mind when carrying out or planning inspection/maintenance requirements for the fuel system and its components. Airworthiness Notice No 12, Appendix No 34, is also relevant.

No: 5/86

**Aircraft type and registration:** Grob G109 Self Launching Motor Glider G-BJZX

**No & Type of engines:** One Limbach Motorenbau L2000 EB 1A engine

**Year of Manufacture:** 1982

**Date and time (GMT):** 6 April 1986 at 1730 hrs

**Location:** Moreton-in-Marsh, Gloucestershire

**Type of flight:** Training

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

**Injuries:** Crew — None                      Passengers — None

**Nature of damage:** Damage to the undercarriage, propeller, fuselage and wing, engine cowling and canopy

**Commander's Licence:** Private Pilot's Licence (SLMG)

**Commander's Age:** 54 years

**Commander's Total Flying Experience:** 2300 hours (of which 1800 were on type)

**Information Source:** Aircraft Accident Report Form submitted by the pilot.

Whilst on an out and return training flight from Enstone the aircraft commander decided to make a precautionary landing on a grass airstrip at Moreton-in-Marsh due to a storm. The storm took some 2 hours to pass and, for the last 20 minutes of the period, the engine was kept running in order to keep the cockpit at a comfortable temperature. When the weather was judged suitable for the flight to continue, the engine was shut down so that the wings could be wiped with a chamois leather in order to ensure the best performance from the aircraft on take-off.

The airstrip was 500 yards long with a rough but firm surface, and the due East take-off direction was slightly downhill. Prior to take-off, the aircraft commander had determined a point along the strip beyond which he intended to abandon should the aircraft not have become airborne. After an unremarkable engine start the beginning of the take-off was normal with the aircraft becoming airborne at about 45 knots (kt), well before the "abandon point".

The aircraft was held in a horizontal attitude, to allow the air speed to build to a climb-out value of 52 kt when the engine speed suddenly reduced. The aircraft sank back onto the runway with insufficient distance remaining to stop. At this point the commander became aware of a wide ditch across the end of the runway with a field of short crop beyond. He attempted to fly the aircraft across the ditch using what little power was still available from the engine, but as it just became airborne, the right wing began to drop and the right undercarriage hit the far side of the ditch. The fixed undercarriage collapsed and the aircraft sank to the ground and slewed to the right, coming to rest in the field. Both occupants were wearing full harness and suffered no injuries.

No obvious reason was discovered for the power loss following a subsequent external inspection of the engine.

At the time of writing the aircraft was undergoing repairs and the engine had not been test run. However, the pilot believes that carburettor icing may have been a factor in the accident although the aircraft is fitted with a carburettor heat system, which was operated prior to take-off.

The weather at the time was described as being dull and cold with a NE wind at 10/15 kt with the runway surface wet from the recent storm.

## **CAP 520**

### **Light Aircraft Maintenance**

**NEW**

This new CAA publication sets out to provide general guidance on implementation of the LIGHT AIRCRAFT MAINTENANCE SCHEME (LAMS). Guidance material, which affects aircraft not exceeding 2730 kg MTWA with a Certificate of Airworthiness in the Transport, Aerial Work, Private or Special Category, is grouped under the following headings:

- Owners and Operators Responsibilities
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- Light Aircraft Maintenance Schedules
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TWS 7/8/86

FUEL SUPPLIES TO GLIDING CLUBS

In recent times there have been several developments and related queries and the following advice is offered.

1. Avgas 80/87 for engines not exceeding 7:1 compression ratio (typically PA-18-150's, Rollason Condors, Gypsy Majors etc, PA25-235 (Pawnee).

Carless Petroleum. (Chris Farries, 0206-68441) will be pleased to quote for the supply of Avgas 80/87 in whatever quantities you require, (barrelled in bulk), with delivery costs quoted ex the Carless Refinery at Harwich.

2. Negotiations, leading to some bench-testing, is also being sponsored by G.A.M.T.A., B.G.A., C.A.A. and Carless with a view to proving the compatibility of engines of 8.5:1 compression ratio with Avgas 80/87 (Typically, this would include the 180 h.p. tugs).

3. Insurance Some underwriters have opted to include Mogas, other than from the "approved" sources of supply, in their insurance cover by specific endorsement.

Other insurance agencies have excluded such supplies. Please read the small print in your policies, and renegotiate accordingly.

4. C.A.A. Notice No. 98 authorises the use of Mogas, under certain circumstances, and only in aircraft which had been "approved" for that purpose. Have you checked that your type of aircraft is so approved?

Motor Gliders have all been type approved on whatever grade of Mogas that is specified in the Type Certificate or Flight Manual. (The effects of 100LL Avgas is unpredictable, and may lead to both plug and valve problems).

The B.G.A. has lodged an unequivocal request to the C.A.A. to withdraw their requirement that Mogas shall only be obtained from the sources listed in Schedule 2 to Notice No. 98. The C.A.A. have undertaken to examine this submission, which otherwise puts Great Britain in a more disadvantaged position, than any of the multitude of nations who have jumped on our bandwagon (Australia, New Zealand, Bangladesh, Pakistan, the U.S.A. and most of Europe!).

5. 100LL causes recurring lead fouling of spark plugs in most engines which does not occur on Mogas or 80/87. The B.G.A. have drawn C.A.A.'s attention to the unsatisfactory M.o.D. Spec, which permits this state of non-airworthiness to arise.

6. Article 82 of the Air Navigation Order places responsibility for persons who have the management of any aviation fuel installation on an aerodrome to control the quality of that operation, and in particular under para 1(a) "A person shall not cause or permit any aviation fuel to be dispensed for use in an aircraft if he knows or has reason to believe that the aviation fuel is not fit for use in aircraft."

(The definition of an "aerodrome" in Article 96 undoubtedly includes sites used for the purpose of gliding.

Therefore, Club Management appear to have a legal responsibility to "manage" fuel supplies on gliding sites in accordance with Article 82. To avoid differences of opinion with your insurers should an incident occur, perhaps we should all take note of Article 82?

R.B. STRATTON  
CHIEF TECHNICAL OFFICER  
JUNE 1986

Very soon lead-free, or "unleaded" petrol will be available at British Service Stations, and this leaflet is designed to remove the mystery and help you decide whether your car will benefit from using it.

LEAD-FREE MOTORAS

TUST 118186

**1. Q** Can all cars use Lead-Free Petrol?

A No. At most 15% of the cars on the road have a capacity of using lead-free petrol.

**2. Q** Why do the majority of cars still need a leaded petrol?

A Because the small amount of lead in the petrol provides essential lubrication for the valves given inside the cylinder head.

**3. Q** What would happen if lead-free petrol was used in a car designed for leaded petrol?

A Serious damage would be caused to the engine within 1,000 miles.

**4. Q** What about the other way round. Can a car designed for lead-free petrol accept petrol with lead?

A Yes.

**5. Q** Just yes?

A Yes. No damage or loss of performance whatever would result from using leaded petrol in an engine designed for lead-free.

**6. Q** How do I know if my car will accept lead-free petrol?

A Check your handbook or speak to the main agent for the make. As a rule of thumb, if your car currently needs 4 star petrol then it will not accept the lead-free grade. If it is a new model and runs on 2 star, then it may well accept lead-free petrol. In any event do check the handbook first or a mistake would be expensive.

**7. Q** My car requires a leaded petrol. If I fit a "catalytic converter" would it then be able to run on lead-free?

A Yes. As the converter is designed to purify the exhaust gases from the engine, the catalytic converter is not affected by a leaded petrol and so a catalytic converter can only exist if lead-free petrol is used. This means that you can only use lead-free petrol if you have a catalytic converter. However, if it is the case that the catalytic converter is not fitted, lead-free petrol can be used. The capacity of the engine for lead-free petrol and does not depend on a converter to be used.

**8. Q** What are the advantages of lead-free petrol?

A There are several advantages which to reduce headwork in the refining process, and the introduction of lead-free fuel will be a step in this direction. In the future all cars will be able to accept lead-free petrol and leaded grades will be phased out. For many years to come both leaded and lead-free will be available.

**9. Q** Will unleaded petrol provide better performance?

A No.

**10. Q** Will I be able to purchase lead-free petrol at my local Murco Station?

A Yes, we will be introducing lead-free petrol to our four courts gradually over the next few years as more of the cars designed to accept it come onto the market.

**11. Q** Where do Murco produce their petrols?

A At their Millford Haven Oil Refinery, one of the most modern in the world.



TNS (7/8/86)

Alexander Schleicher GmbH & Co. Segelflugzeugbau  
Postfach 3015 3416 Pöckinghausen

Huhnrain 1  
ROPPENHAUSEN AN DER WASSERKUPPE

To all our customers  
owning motorgliders

BANK: BRESDNER BANK AG. FULDA  
KONTO NR. 60 44253 BLZ: 330 500 00  
REISSPARKASSE FULDA  
KONTO NR. 2807 BLZ: 330 501 30  
STSCHECK: FRANKFURT AM MAIN 49 50-801  
TELEFON: ROPPENHAUSEN 03652-225  
ANSTÄTT: FULDA

ws/ba /ck

June 19, 1986

B. R. P Fuel TANKS.

Dear Customers,

Use of MOGAS (car gasoline) in motorgliders

Recently we have heard of customers complaining that the fiber-glass tanks in their motorgliders have turned opaque.

Since these tanks are in part 15 years old and this discoloration occurs quite recently, it is only possible that the fuel is the cause for this discoloration. As we have been reported, this discoloration only occurs with the use of super-quality car gasoline (MOGAS), i.e. with high octane rating gasoline). There is the danger of that the MOGAS deteriorates the tanks in the long run, therefore, we ask you to operate your motorgliders from now on only with AVGAS 100 LL. Of course, for 2-stroke-engines you have to take the prescribed 2-stroke-blend where AVGAS 100 LL must be used instead of the super-quality car gasoline.

If you have had already troubles with your motorglider, we would ask you to inform us. Should you have found out already what kind of change of the car gasoline cause these troubles, this would be a very valuable information.

If you sold your motorglider in the meantime, we would ask you to reforward this letter to the new customer. We thank you for your kind cooperation and remain,

Yours sincerely,

ALEXANDER SCHLEICHER  
GmbH & Co.

*Handwritten notes and stamps:*  
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