B.G.A. TECHNICAL NEWSHEET 10/11/12/78

PART 1. Airworthiness 'Aggro' (Gliders and Motor-Gliders)
(Please add to the Pink Compendium)

1.1 DG.100/DG.100G. Technical Note 301/6 (enclosed) refers to elevator control bearing assy. (A/D 78-164 and BGA TNS 8/9/78 refer). The A/D was mailed to owners direct.

1.2 Pirat Elevator Cables. Failed strands have been discovered during C of A Renewal Inspection (R. Parker - Dishforth). Rudder cable failures were again reported in TNS 8/9/78. Recommend original cables be replaced Ref CAIP Leaflet. BL/6-24.

1.3 ASW 15 and other GRP Structures - Venting. A further case of the 'exploding' of sealed GRP structures, in this case a rudder, has been reported from a wave soaring pilot at Portmoak. Drill vent/drain holes in all GRP structures as required.

1.4 Oly 2 (and other types). Bungee Hook fouls cable parachute. Bungee hooks should be deleted wherever possible to eliminate this possibility of catastrophe!

1.5 Twin Astir. Gear retraction malfunction. The drive pin between the pilot's operating lever and the small gear-wheel fell out. Re-secure with loctite. Drill and tap four additional 4.BA bolts if required. (Albert-Johnston Syerston).

1.6 Bocian IE. Front rudder pedal assy. floor attachment bracket. Removal of the floor panel, and application of full left rudder, disclosed weld failure sufficient to allow pedal assembly to move. (Woodspring G.C.).

1.7 Foreign A/D received by the BGA from the CAA.

a) (German) 78-256 - effects MINSTRAL C air-brake control lever.

b) (French) 78-142-A WASSMER WA26 and WA28 - elevator rod-end.

Copies of the above filed at the B.G.A. Office.

1.8 Cockpit camera mounts - Kestrel 19. Camera mounts on cockpit coamings had been screwed into cable sleeve and cable of the rudder controls! (Southern Sailplanes Report).

1.9 I.S. 28 B2. Undercarriage mounting modifications. Manufacturer's working party have been at Vickers-Slingsby incorporating strengthening modifications. (Details from Vickers-Slingsby Ltd.).

1.10 Stamo Crankcase Cracks. LBA AD/78-269 issued 20/10/78 applies to MS 1500, 1500/1 and 1500/2 engines, and requires inspection 'within 10 hrs and thereafter every 50 hrs' for cracks between upper and lower righthand engine mounting. Technical Modification No.4, from Pieper Motorenbau GmbH, Viktoriastr. 50, D-4950 Minden, W.Germany, should be embodied. (BGA Note: These cracks are almost certainly those which have been experienced in the UK since 1971. T.M. 4 has not yet been received by the BGA).

PART 2. General Matters

2.1 PLEASE NOTE THAT THE FEE FOR ISSUE OR RENEWAL OF A B.G.A. GLIDER C. OF A. WILL BE INCREASED TO £10.80 (inc. VAT) on 1ST JANUARY, 1979. WE HAVE HELD THE PRICE NOW FOR THREE YEARS AND REGRET THAT THIS INCREASE IS NECESSARY BECAUSE OF STEADILY INFLATING COSTS.

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d) The Design Requirements for such installations (BCAR Section K4-10) were quoted in TNS 6/7/78.

e) In recent fatal towing accidents, the probability must be considered that access to the release under negative 'g' conditions, (with or without upper body restraint) may have become difficult.

f) The responsibility for initiating action to eliminate this probability lies with with owner/operator of the aircraft concerned.

If you have difficulties, contact: Mr. Eric Neidermeyer, CAA, Redhill 65966.

3.4 A.I.B. Bulletins. Attached extracts cover:

a) Auster - cylinder head gasket failure/forces landing

b) Winter operating problems

c) Bocian towing incident - fatal

d) Long grass, too long for take-off!

3.5 Repairs/Modifications to Geriatric Engines. (Gypsy/Cirrus etc). Whereas previously repairs or modifications could only be submitted by Engine Design Approved Organisations the CAA have now agreed to accept Minor Mod Form AD 261, from Non Approved sources. Submissions may be channelled through the B.G.A.

3.6 Tug Maintenance Review (BCAR A8-15 Approval).

a) NOT ALL CLUBS have yet returned the Tug Maintenance Review Pro Forma sent to them. This information is essential to our continuing negotiations with the C.A.A.

b) Potential Tug Inspectors are being listed from the information contained on your BGA Inspector Renewal Pro Forma.

c) CAA Notices. The latest amendments were issued August, 1978, and in particular Notice No. 35 (Engine TBO Extension) in Issue 9 dated May, 1978. Please check that you are receiving these latest amendments.

d) BCAR A8-15 Approval Requirements. If you wish to be considered, in due course, for such approval, please check that you meet satisfactory standards in all respects. Ref TNS 6/7/78, particularly in respect of HANGAR working facilities, publications, tech records, storeage facilities etc.

e) Worksheets. A suitable pro forma for recording work done on both Tugs and Motor-Gliders, is attached herewith (BGA Form T/1).

f) LAMS Maintenance Record Form (BGA T/2) is in course of preparation. (For tugs and motor-gliders).

g) BGA Technical Procedure Manual (T) Tugs is also in course of preparation and approval.

3.7 LATE NIGHT EXTRA - MOTOR-GLIDERS

a) SF 25B Falke, can be converted to SF 25D model (with Limbach engine) for DM. 15,000 at the factory. (Scheibe TM 653-31 refers).

b) SF 25B (with Stamo engine) weight increase to 555 kp is authorised by 'Anerung NR. 125'. (Copy in German at the BGA).

For further details Scheibe - Flugzeugbau GMBH, Dachau. Aug. Pfaltz. Str. 23.

PART 4. New Products

a) BOSTIK M.890 is tolerant to oily surfaces, and may prove useful in bunging-up OIL LEAKS. (Available from Brown Brothers etc).

b) AVDELBOND adhesives (Avdel Adhesives Ltd., Woodside Road, Eastleigh, Hants, SO5 4EX) also market a wide range of products. ESP 105 is a paste material which may also seal cracks.

HAPPY X-MAS TO ALL OUR READERS.

R. B. STRATTON
CHIEF TECHNICAL OFFICER

TMS 10/11/18 - also to owners

	Technical note Nr. 3o1/6	DG - 1oo DG - 1oo G

Subject: elevator control (bearing stand RU 19)

Effectivity: DG-1oo and DG-1oo G W.-Nr. 5, 21 - 1o3

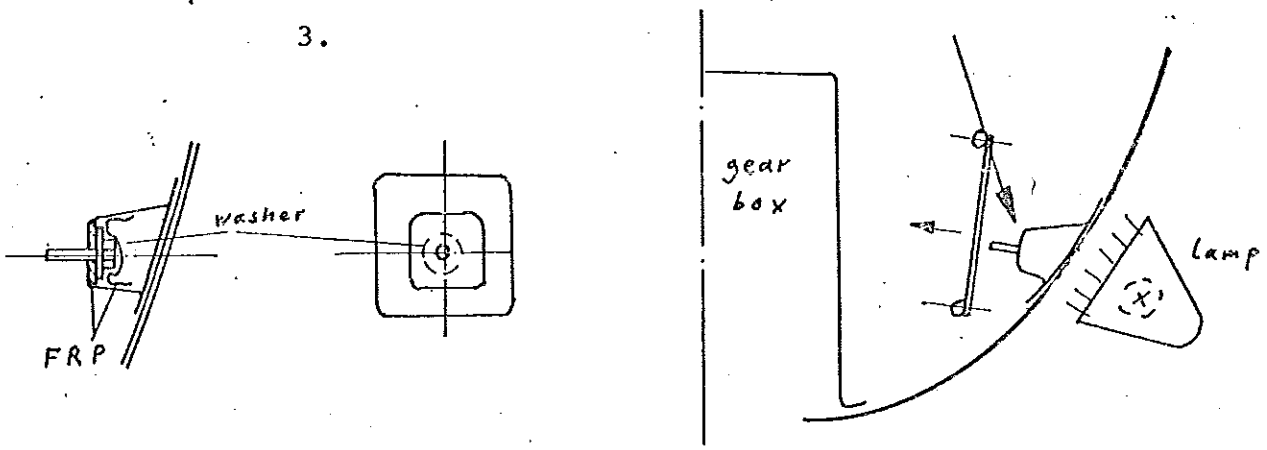
Accomplishment: Before the next flight

Reason: If a washer 6,4 DIN 9o21 is not installed in the bearing stand RU 19 it is possible that the elevator control lever might loosen.

Instructions: Check if a washer 6,4 DIN 9o21 (outside diameter 18 mm) is installed in the bearing stand.

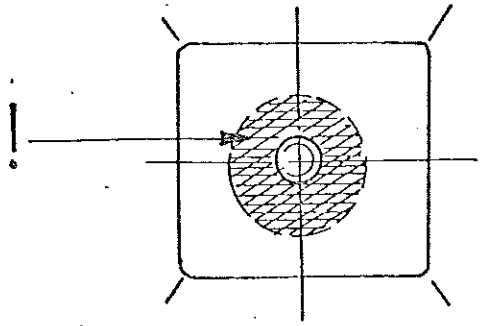
If no washer is visible you have to exchange the bearing stand according to repair instruction 11/5/78.

Test and exchangeworks

1. To carry out the works the fuselage must be accessible from the bagage compartment and from the left side.
2. Remove the left baggage compartment bottom.
3. 

Remove the self locking nut M 6 DIN 985 from the bearing stand and draw off the control lever.

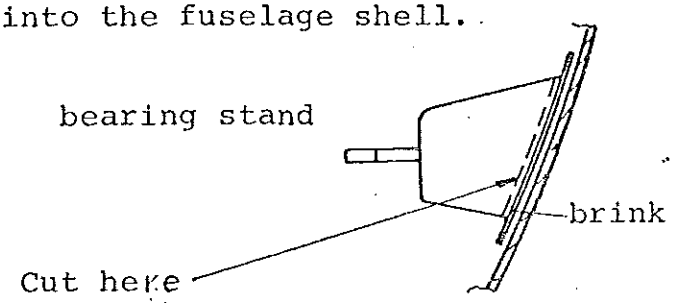
4. Take a powerful lamp (5oo - 1ooow), hold it against the fuselage from the outside and shine through the bearing stand. To prevent heating of the fuselage shell lighten only for short times. Make this work in a darkened room.
5. Look at the bearing stand from the baggage compartment.
6. a)



If the washer with 18 mm outside diameter is visible you can reassemble the control lever. Use a new self locking nut M 6 DIN 985.

Exchange of the elevator control bearing stand

1. Disassemble the elevator control lever from the bearing stand.
2. Cut away the bearingstand from the fuselage with a flexdisc.
   Don't flex into the fuselage shell.



3. Abrade the brink of the bearingstand until the fiberglass of the brink is completely removed.
   Don't abrade the fuselage shell.
4. Sand the new bearingstand.
   For gluing coat the bearing stand and the fuselage with resin. Then put resin filled with chopped cottonfibers approximate 5 mm thick on the bearing stand.
   Push the bearing stand against he fuselage shell. Wipe away the surplus filled resin.
   Beware the stand slipping out of place.
5. Let the resin cure min. 12 hours at min 2o° C roomtemperature.
6. Reassemble the elevator control lever. Use a new self locking nut M 6 DIN 985.
7. Check the elevator displacements and readjust the elevator control if necessary (see service manual page 22).

Material: resin: Glycidäther (Epikote) 162
Hardener: Laromin C 26o
mixing ratio 1oo : 38
filler: chopped cotton fibers
selflocking nut M 6 DIN 985

TN3/10/C/78

The British Gliding Association Ltd.
Registered No. 422605 England
Registered Office as address

General Secretary: Barry Rolfe

Kimberley House, Vaughan Way, Leicester
Telephone 0533 51051/2

British Gliding Association

3rd November, 1978.

TO:		
	Jack Little	Northumbria G.C.
	Harry Middleton	Coventry G.C.
	Roger Crouch	RAFGSA - Dishforth.
	Wrekin G.C.	Cosford.
	London G.C.	Dunstable.
	RAFGSA	Bicester.
	R.Dixon-Bate	Shropshire (Sleap) 'Fairfield' Skipps Lane, Christleton, Chester.
	Naval G.C.	Culdrose, Helston, Cornwall.

CHIPMUNK 'MANDATORY' TNS 165 ISSUE 2.

X-Ray of Undercarriage Castings

The B.G.A. have successfully appealed to the Airworthiness Requirements Board against the decision of British Aerospace/C.A.A. to up-grade the above to 'Mandatory' Status.

An amendment will be issued to C.A.A. 'Mandatory Aircraft Modification and Inspection Summary' (the only authoritative source of such mandatory data), making TNS 165/2 'Mandatory' only in respect of Chipmunks used for Public Transport, Hire and Reward.

This excludes club operated Chipmunks from the requirement to implement periodic radiographic examination on a 'Mandatory' basis, regardless of whether the aircraft is currently certificated in 'general purpose' or 'private' category.

R. B. STRATTON.
CHIEF TECHNICAL OFFICER

VINTAGE GLIDER CLUB OF GREAT BRITAIN

TECHNICAL ARTICLES

The following technical articles are available: (dates are those of publication with the Newsletter)

September 1973	MINIMOA	4 pages	45p inc. postage
October 1973	WREN SERIES	2 pages	25p "
February 1974	KRANICH	5 pages	55p "
April 1974	BOWLUS BABY ALBATROSS	3 pages	40p "
September 1974	WEIHE	5 pages	55p "
January 1975	MU 13	5 pages	55p "
May 1975	S.18 SPALINGER	4 pages	45p "
August 1975	RHÖNBUSSARD	4 pages	45p "
November 1975	MORE WEIHE	2 pages	25p "
February 1976	OLYMPIA	3 pages	40p "
November 1976	GRUNAU BABY	7 pages	75p "
March 1977	FVA RHEINLAND	5 pages	55p "
February 1978	SLINGSBY TYPE CADET	3 pages	40p "
June 1978	DFS REIHER (Heron)	4 pages	45p "
To help with RESTORATION WORK plus KAURITE GLUE		4 pages	45p "
Colour Schemes and Registration of German Gliders 1935-1945		2 pages	25p "
Storing Vintage Gliders during the Winter		2 pages	FREE s.a.e. please

Additional postage for overseas AIRMAIL please

From the Secretary: Mrs. Frances Furlong
60 Well Road
Otford, Kent
Tel: Otford 3277

Accidents Investigation Branch
Department of Trade
Kingsgate House, 66-74 Victoria Street, London SW1E 6SJ
Telephone 01 212 5852 (Direct dialling)

AIB Bulletin

No: 9/78
26 September 1978 Ref: EW/G78/05/17

Aircraft:	Auster 5J/1 (Autocrat) G-AJIU
Date and time:	21 May 1978 at 1445 hrs GMT
Location:	Farm field at Tewin, Nr Welwyn Garden City, Herts
Type of flight:	Private
Persons on board:	Crew - 2 Passengers - nil
Injuries:	Crew - nil Passengers - n/a
Nature of damage:	Damage to rudder, cabin roof and windscreen. Propeller destroyed, wing fabric damaged
Commander's Licence:	Private Pilot's Licence
Commander's total flying experience:	205 hours (of which 1 hour 40 minutes were on type)

The two pilots on board had owned the aircraft for one week and were unfamilar with the type. They had flown it for 25 minutes earlier in the day and found everything normal apart from a drop in oil pressure that they attributed to a rise in oil temperature.

On the flight on which the accident occurred the aircraft took-off and made a normal circuit and touch and go landing, but then, at a height of about 50 feet AGL, as it climbed away, smoke and a smell of burning was noticed in the cockpit and there was a loss of power. Suspecting an engine fire and since the aircraft would not maintain height, the pilot switched off the magnetos and fuel and made a forced landing. The landing was made across the furrows of a ploughfield, and as the aircraft slowed down towards the end of the landing roll it tipped over onto its back.

ISSN 0309 - 4278

WINTER PROBLEMS

Now that winter is nearly upon us a selection of winter problems are included below. Many of them apply to most aircraft types.

Windscreen Obscured by Ice

Aircraft : Rockwell 500S Shrike Commander
Date : January 1978

The aircraft was on an IFR flight plan and was flying in IMC and airframe icing. Owing to failure of the cabin heater, and hence windscreen de-froster, ice could not be removed from the windshield. A diversion was made to Gatwick airport where the ground level temperature was given as +1°C. Ice completely obscured vision until the aircraft was at about 400 ft on the approach, when it cleared sufficiently for landing.

CAA Comment:
This is one result of flying in winter with an unserviceable cabin heater system. De-icing on this aircraft utilizes alcohol spray and windscreen wiper externally, and cabin heater/demister system internally. It was fortunate that there was a convenient diversion where the temperature was above freezing. In GASIL 5/77, page 4, we reported another case of cabin heater failure in which a pilot suffered from exposure and frostbite after flying for about 45 minutes at an altitude where the OAT was -10°C. Pilots should ensure that the equipment specified in the Flight Manual (or Supplements) for flight into known icing conditions, is fitted and serviceable.

Snow and Ice on Wings and Tail Caused Crash

Aircraft : Cessna F150M
Date : February 1978

The aircraft took off with ice and snow on the upper surfaces of its wings, tailplane and elevators. When it reached a height of 30 ft it became unmanageable, stalled and struck the ground in a level attitude on three wheels. The initial impact was on the grass about 15 metres to the left of the runway, and the nosewheel ran into a rut and collapsed. The pilot, who had 6000 hours on the type, and his student were unhurt.

CAA Comment:
Aeronautical Information Circular 126/1977 Frost, Ice and Snow on Aircraft, and other documents have emphasised the need for the clearance of snow and ice from an aircraft before take-off, yet this kind of accident still happens - cold hands are better than a broken neck.

Both ASI Readings Fell to Zero in Heavy Rain

Aircraft : Beech D55 Baron
Date : July 1978

While flying at FL80 in very heavy rain both ASI readings slowly reduced to zero, where they remained for approximately 10 minutes. The OAT was -3°C, but there was no airframe icing. When the aircraft flew out of the rain the ASI readings slowly returned to an apparently normal indication. A slow speed/stall check was satisfactory. The pitot heater had been ON since take-off and was checked and found to be serviceable. Subsequently the ASI system was checked and no fault found.

CAA Comment:
From time to time we have published ASI and altimeter faults due to a variety of causes. It is possible that in this case the pitot-static system was temporarily blocked by frozen moisture. In GASIL 9/77 page 2 we advised pilots confronted with this problem to "fly attitude and use standard power setting".

Ref: EW/C 630

Aircraft:	SZD Bocian 1E glider BGA No. 2215
Date and time:	28 June 1978 at 15.45 hrs GMT
Location:	¼ mile west of North Kilworth, Leicestershire
Type of flight:	Private
Persons on board:	Crew - 1 Passengers - nil
Injuries:	Crew - 1 (fatal) Passengers - nil
Nature of damage:	Destroyed
Commander's Licence:	Not required
Commander's total flying experience:	43 hours 16 minutes (of which 9 hours were solo)

The glider was towed by a Chipmunk aircraft from Husbands Bosworth to an altitude of 2000 feet. Whilst awaiting the glider pilot to release, the tug pilot felt the tail of his aircraft gently lifted upwards and noticed the glider was in a slightly higher position relative to the tug than was normal for release. Suddenly without warning the glider rose rapidly and disappeared from view in the tug pilot's mirror. With the tow rope attached, the tug was rapidly rotated into a steep nose down attitude before the tug pilot released the rope and recovered from the dive. Levelling out at 1000 feet the tug pilot was unable to locate the glider and returned to the airfield.

After diving still connected to the tug, the glider levelled out then climbed slightly when a sharp crack was heard and pieces of the wing became detached. The glider then dived vertically into a wheat field 2 miles west of the airfield and the pilot was killed.

The fuselage had been compressed lengthwise and shattered but the tail plane and right wing though damaged, appeared complete. Parts of the left wing were found a ¼ mile from the main wreckage. The tow rope was still attached to the glider and the nose tow-hook itself was in the closed position but was free to operate. The tow rope was wrapped around the axle 2 turns on both sides of the single undercarriage unit.

After removal from site further examination indicated the separated pieces were all from the left wing and comprised the outboard half of the outer aileron, wingtip, wing leading edge and a section of the wing root structure. The detached portion of aileron was found to have marks on its underside typical of rope burns. The tow rope had smears of redpaint similar to that on the left outer aileron at a distance which, after allowance for rope stretch, corresponded closely to a length of rope trailing back from the glider's nose hook, wrapped around the undercarriage wheel and out to the left wing tip. This evidence is therefore consistent with the rope being entangled with the wheel before damaging the left wing. The tow rope length was 115 feet.

The tow rope did not contain a weak link and the rope used, a 6 millimetre diameter 3 strand hawser laid nylon rope, is sold as conforming to BS 4928 which specifies a minimum breaking load to 1215 lbs. This figure exceeds the limit of 1000 lbs specified on the BGA certificate of airworthiness of the Bocian 1E, however there is no evidence that excessive rope strength was a factor in the accident. Post mortem examination of the 63 year old pilot indicated that death was due to severe multiple injuries consistent with an aircraft accident. Toxicology excluded alcohol or drugs as factors in the accident.

TNS 10/10/78

Ref: EW/G78/08/14

Aircraft:	Beagle B121 (Pup) G-AZCJ
Date and time:	18 August 1978 at 1845 hrs GMT
Location:	Private strip at Cranleigh, Surrey
Type of flight:	Private
Persons on board:	Crew - 1 Passengers - 1
Injuries:	Crew - nil Passengers - nil
Nature of damage:	Damage to both wings, nose landing gear, and starboard tailplane
Commander's Licence:	Private Pilot's Licence
Commander's total flying experience	287 hours (of which 230 hours were on type)

The aircraft was using a strip 150 feet above mean sea level, 485 yards long with grass two inches high covering about 80 per cent of the surface.

The wind was calm, the temperature +17°C, and the visibility - unlimited.

After starting up the pilot taxied to the extreme western fence, completed his pre-flight checks and prepared the aircraft for a short field take-off. He applied full power then released the brakes and the aircraft began to accelerate. About three-quarters of the way along the strip the aircraft showed no inclination to become airborne so the pilot abandoned the take-off. He closed the throttle, applied the brakes and switched off. When braking proved ineffective he turned the aircraft to starboard but the port wing struck the hedge and swung the aircraft into a ditch.

Ref: EW/G78/08/13

Aircraft:	Auster J5F (Aiglet) G-AMRF
Date and time:	19 August 1978 at 1045 hrs GMT
Location:	Saltby Aerodrome, Leicestershire
Type of flight:	Glider tow
Persons on board:	Crew - 1 Passengers - 1
Injuries:	Crew - nil Passengers - nil
Nature of damage:	Damage to starboard landing gear, starboard wing and propeller
Commander's Licence:	Private Pilot's Licence
Commander's total flying experience:	39 hours (of which 31 hours were on type)

The aircraft bounced several times during a landing in a cross-wind, ground looped, and finally stopped when the starboard landing gear collapsed.

TWO OVERRUN ACCIDENTS ON RELATIVELY SHORT GRASS STRIPS

Aircraft : Beagle Pup Series
Date : August and September 1978

Two cases have occurred recently of inability to take-off from relatively short grass runways.

In the first case the take-off was abandoned after approximately three-quarters of the take-off run, when the pilot "felt that the aircraft was not going to lift off". The grass runway was approximately 450m long with 80% of the surface covered in thin grass 2" high and the remainder short mown. Airfield elevation was 150 feet with negligible slope. At the time the temperature was +17°C, wind calm, take-off weight 1556 lb.

In the second case it was reported that the aircraft achieved take-off speed, but after rotation it failed to climb out. The aircraft crash landed 119 metres beyond the end of the grass runway. The runway was 450 metres long; elevation 250 ft, slope 1°-2°. At the time temperature was +19°C, wind 310 °/5 knots, runway direction 240° (cross-wind 4 knots), take-off weight 1455 lb.

Each pilot had approximately 280 hours, the majority on the type.

Flight Manual graphs for this aircraft type give for a take-off weight of 1600 lb; ISA (+15°C), nil wind and a 1° up slope, a take-off distance of 540m. This distance should be increased by 8% for short mown grass surfaces - giving a TOD to the 50 feet point of 583m. The take-off run is then calculated as 60% of the TOD, namely 350m.

In each case it appears that scheduled performance figures were not being used. Had these been public transport flights, where, in the case of Performance Group D aircraft like the Beagle Pup the take-off distance required must not exceed the emergency distance available, the take-off requirements would not have been met.

Aeronautical Information Circular 110/1976 - "Take-off, Climb and Landing Performance of Light, General Aviation Aeroplanes", gives guidance and warns of the circumstances which can degrade an aeroplane's performance. Among the factors affecting field and climb performance it is stated that long grass can add 25% to the take-off run and in some cases can even prevent lift-off being attained. While it is not suggested that in the two cases under consideration the grass was over-long, estimating the length of grass is subject to error and the difference between a take-off distance factor of 8% and one of 25% is significant and could make a marginal grass runway operation into an unsafe one.

The Beagle Pup Flight Manual gives advice in the introduction to Section 7 - Performance on the advisability of using scheduled data at all times. While the Flight Manual for the Pup as a Performance Group D type contains scheduled performance data to take account of degradation of aircraft performance due to weather, aircraft condition and pilot skill, the majority of light single-engined aircraft are in Performance Group E. In this classification the performance data in the Owner's Manual or Pilot's Operating Handbook will usually be that measured by the aircraft manufacturer's test pilots on a well prepared aircraft in good condition. To allow for the various adverse factors which may in combination result in poorer performance being achieved in everyday operation, the Air Navigation Regulations (AN(G)R 10) require that on public transport flights the scheduled take-off distance multiplied by 1.33 must not exceed the emergency distance available at the take-off airfield. It is a matter of sensible prudence for general aviation pilots to apply this factor of 1.33 to the basic Flight Manual performance data on all flights.

Reductions to the total weight by adjusting fuel load or payload may be necessary, or operations confined to favourable wind conditions. Whenever the take-off run is critical, make sure to use the take-off flap setting giving the shortest ground run.

BGA Rectification Worksheet
and Certificate of Compliance

MOTOR-GLIDER OR
Tug Registration:
Page No:
Form BGA/T/1

I hereby certify that the Inspection/overhaul/repair/replacement/ modification specified below, has been carried out in accordance with the requirements of BCAR Chapter A4-3.

ENTRY NO	DATE	WORK REQUIRED	WORK COMPLETED	INSPECTOR	DAT

NOTE: SIGNIFICANT ENTRIES TO BE ENTERED IN LOG BOOKS
This document to be retained in accordance with ANO Article 55.