B.G.A. TECHNICAL COMMITTEE

TECHNICAL NEWSHEET

TNS 1/2/88

PART 1 AIRWORTHINESS "AGGRO" The 1988 Revised (Red Pages).

Compendium of Airworthiness Directives, Mandatory Modifications and Special Inspections for U.K. and Foreign Gliders & Motor-Gliders, is enclosed herewith.

Please destroy the 1987 Green Pages.

Please read the revised front cover to the 1988 Red Pages. Additional instructions and information have been included.

1.1 Slingsby T.65 "Vega". Tailplanes attachments. Further reports have been received of cracks in the G.R.P. securing the tailplane attachments. Inspect frequently, particularly after any incidents. CHECK ALIGNMENT OF THE ELEVATOR ACTUATOR. as per sketch attached. (Reported by Peter Taylor & J.H. Odell).

1.2 Slingsby T.43 Skylark. Tow Hook hang-up caused by the nose hook being too far recessed into the G.R.P. (Reported by Kent. G.C.).

1.3 Standard Libelle. Broken Trim Springs. Inspect annually for damage, wear or corrosion at attachment hole (lower). (Reported by Ken Blake /TNS 6/84).

1.4 Valentin Tailfin 17E. Inspection of welds in airbrake and wheel brake toque tubes. Tech/Note 11/818 refers, from U.K. agents.

1.5 SZD 45 "OGAR". Lower Speed Brake Paddles, severed at mid-span. Possibly caused by high tension loads induced by wing bending. Inspect/Repair as necessary, and adjust as per maintenance manual. (Aquila G.C.).

1.6 Bendix Magneto's - Multiple Failures. C.T.O. now has personal experience of double magneto failures on C.90 engines, after a period of running sufficient to raise the temperature. Coil failures were diagnosed. In both cases, the magnetos were ancient Black Label Bendix, which may have been stored inactive, for prolonged periods.

1.7 Slick Magneto's - Overhaul Periods. The reliability of these magnetos is very much dependent upon servicing them in accordance with Service Bulletin SB2 - 80A at 500 hour intervals.

1.8 Stromberg - Zenith C.D. Carburettor. (Ref TNS/9/10/87). To avoid flooding leading to power loss and engine malfunction, replace float and valve assemblies at (say) 500 hr intervals. Check also the condition of the rubber diaphram.

1.9 Crankcase Leaks. (Stamo could apply to any engine). A crankcase breather was blocked by the products of contaminated lubricant (water), caused excessive leaks from all joints. (Reported by Yorkshire G.C.).

1.10 Marvel - Schebler Carburettor (fitted to almost all Tugs). Replacement of "composite" floats by metal floats is strongly recommended. (Copy of FACET S.B. A1 - 84. is attached). It should never be necessary for the pilot to lean-off a carburettor in order to achieve acceptable operation on take-off in U.K. conditions, since "over-leaning" can damage cylinders and possibly cause loss of performance.

2.8 Gel - Coats The attached guidelines prepared by Doug Jones, Chairman B.G.A. Technical Committee, supplements guidelines on the inspection of G.R.P. Structures, published with TNS/12/87.

2.9 "Major" Repair Reports. The B.G.A. Technical Committee require reports to be submitted in sufficient detail to place on record the extent and integrity of such repairs.

2.10 "Major" Repair Approval. BGA Technical Procedure Procedure Manual para 6.4, requires "Senior Inspectors, appropriately rated to supervise major repairs to the primary structural elements of gliders and motor-gliders".

Repair reports must, therefore, show compliance with this requirement. If in doubt, contact the C.T.O. in writing. A concession can be issued in specific circumstances.

2.11 The B.G.A. office will be monitoring the relationship between BGA Accident Reports, and BGA Repair Reports. Certification may be delayed (or denied) if acceptable evidence of compliance with proper repair procedures and quality assurance, is not available for the record.

2.12 Standards Of Repair. There is never any excuse for failing to achieve acceptable standards of repair, because the following authenticated repair manuals are available from the B.G.A. office:

Standard Repairs To Gliders	£3.50
(Slingsby) G.R.P. Repair Manual	£21.50
EA-AC 43-13 Aircraft Inspection & Repair	£15.35.

The latter covers wooden, tubular steel, and metal construction, as well as aircraft systems etc etc.

2.13 C.A.A. C of A Renewals, Civil Registered Self-Launching Motor-Gliders. Supplement to TNS/1/88 herewith reminds you of the correct procedures. Why not renew 62 days before expiry - Ref LAMS Section 5(2). The CAA charges (payable to BGA) increase from £30.00 per 500kgs per year of validity (3) to £34.00 per 500kgs (or part thereof) per year, with effect from 1st April 1988.

R.B. STRATTON.
CHIEF TECHNICAL OFFICER.
28th January 1988.

TNS 1/88

CENTRAIR

AERODROME 36300 LE BLANC

BULLETIN de SERVICE

N : 12

ASW 20 F
ASW 20 FL

PREAMBULE :

Ce bulletin de service reprend la note technique Schleicher n° 30 concernant les planeurs ASW 20 et ASW 20 L et est adapté aux planeurs ASW 20 F et ASW 20 FL.

OBJET : Mesure préventive contre des oscillations de tangage provoquées involontairement par le pilote

PLANEURS CONCERNES : Planeurs ASW 20 F et ASW 20 FL, tous numéros de série

DELAI :

Faire ce qui est demandé dans ce bulletin de service avant la prochaine inspection annuelle, et dans tous les cas avant le 1 mai 1988.

RAISON :

Plusieurs vols et rapports d'accidents de pilotes avec peu d'expérience sur les ASW20 indiquent que les pilotes eux-mêmes provoquent (involontairement) des oscillations du manche.

Outre de fortes turbulences et en air agité, les circonstances suivantes (principalement combinées) ont été rencontrées :

1. Harnais de sécurité mal attaché
2. Coussins de sièges mous
3. Attaches du coussin lâches (utilisées dans le siège ou le dossier)
4. Position centre de gravité à l'arrière
5. Compensateur non serré
6. Manche déplacé vers l'arrière et manche qui est trop coudé

Les manches qui sont soit trop coudés ou réglés trop loin en arrière, favorisent ces oscillations car en air agité, le bras et avant-bras étant en arrière du cardan support de manche ; entraîne un déplacement involontaire de la gouverne de profondeur, d'où augmentation du facteur de charge de manoeuvre.

CENTRAIR
tél (54) 37 07 96
telex 750 272

APPROBATION SERVICES OFFICIELS DU

28/12/87

Classification
RECOMMANDE
POUR INFORMATION
IMPERATIVE ☒ ☐

ACTION :

1. Vérifier le type de votre manche qui doit être identique à celui d'origine suivant plan inclus (20 100 261),sinon remonter le manche original.

2. Vérifier la position la plus avant du manche comme indiqué par le plan (20 100 285) et si nécessaire, réajuster. L'ajustage est fait par l'embout de bielle réglable devant manche. A cet effet, la gouverne doit être au maxi de la tolérance à piquer donnée dans le manuel d'entretien page 6/17 (18° +/- 2 correspond à 50 mm +/- 5 en bord de fuite de la gouverne au point de corde maxi).

3. Enlever le carénage siège du poste de pilotage. Comme le mécanisme de vérrouillage du train d'atterrissage n'est plus assuré après le démontage de ce carénage, le fuselage sera mis sur chandelles ou berceau, en toute première opération. Après dépose du carénage, enlever le bouton existant du compensateur.
Le nouveau bouton de compensateur à ressort précomprimé, doit être installé comme indiqué sur le plan 20 70 163. Il faut faire attention à ce que la vis verte (1) soit absolument verrouillée avec son écrou (7). (Bouton disponible à Centrair).
Avec la gouverne au neutre le bouton du compensateur doit être ajusté à environ 10 mm de la butée avant de trim ; l'ajustage est fait à la fixation du ressort de compensateur. Enfin, vérifier que toutes les pièces peuvent bouger librement et remonter le carénage.

4. Remplacer la page 2.5 du manuel de vol par son édition 4 du 2/12/87.

CENTRAIR
tél (54) 37 07 96
telex 750 272

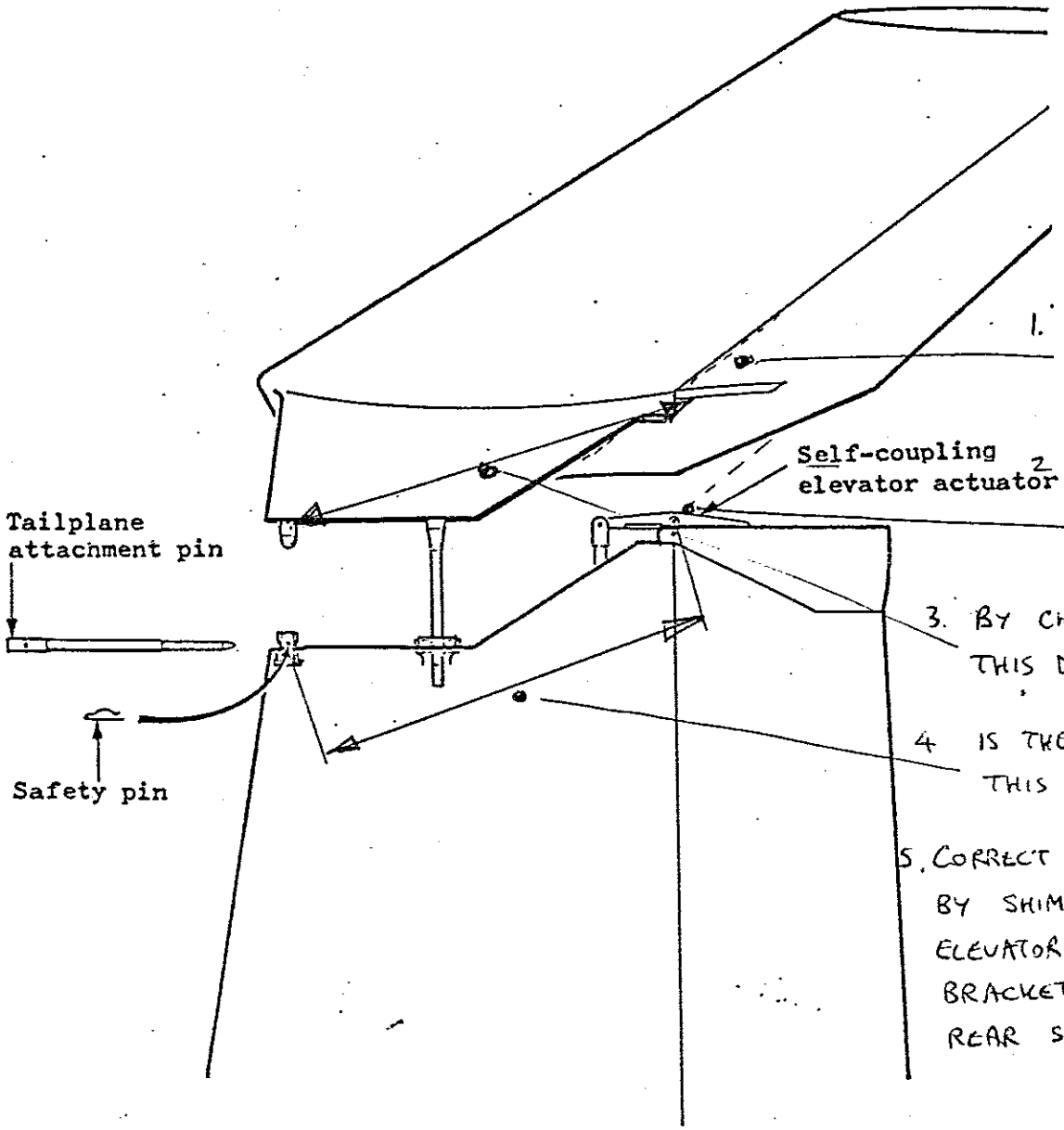
APPROBATION SERVICES OFFICIELS DU

28/12/87

Classification
RECOMMANDE ☐
POUR INFORMATION ☐
IMPERATIF ☒

BGA TNS 1/88.

VEGA ELEVATOR DRIVE ALIGNMENT



VEGA ELEVATOR DRIVE

Jerry Odell

1/c 111ME.

TNS 1/88

Facet

Facet Aerospace Products Co.
Subsidiary of Facet Enterprises, Inc.
1410 Highway 70 Bypass
Jackson, TN 38301
(901) 423-2500

SERVICE BULLETIN

#A1-84

DATE: 4-84

TO: All Outlets

SUBJECT: * Carburetor Floats

Models Affected: All Marvel Schebler Carburetors

Time of Compliance: At next 100 hour inspection or immediately if any of the following symptoms are experienced:

1. Flooding carburetor
2. Rough engine at low throttle settings .
3. Inconsistent engine shutdown .

There have been many reported instances of the molded cellular floats absorbing fluid, possibly 100LL Avgas, auto fuels, fuel additives or carburetor cleaner.

Because we have no control of the chemistry that goes into the aircraft fuel tanks we feel that it is mandatory to change float material. Effective immediately Facet will supply only metal floats.

The metal floats are available from your local distributors in kits:

666-915 for all MA3 and MA 4 Carburetors

666-916 for all MA4-5, MA5 and MA-6 Carburetors

666-917 for all HA-6 Carburetors

Civil Aviation Authority

Airworthiness Division

*To: Applicant
Avionic/Electrical Section (Survey)
Surveyor
Aircraft Projects Department
Flight Manuals Section
Applications & Certification Section

MINOR MODIFICATION

Serial No. .....

Aircraft Type / Regn Marks	Name and Address of Applicant	Applicant's Modification No / Issue No
PA 18 CUB PA 25 PAWNEE CHIPMUNK CITABRIA ETC ETC	R. B. STRATTON BRITISH GLIDING ASSOCIATION KIMBERLEY HOUSE VAUGHAN WAY LEICESTER	BGA/T/1/85 27/2/85

Original Drawings affected/Issue Nos	New Drawings to be raised by	New Drawings introduced/Issue Nos
-	-	SKETCH BGA/T/1/85 ATTACHED

Details of Modification GLIDER TOWING HOOKS

To improve the operation of Schweitzer Type Tow Hooks, (normally used for both Banner and Glider Towing), when used for Glider Towing, by replacing the roller by 1" O.D. sealed ball race.

The pull-off loads to release the tow cable under tension are reduced from 95lbs (approx) to 25lbs (approx).

Ground and Air Tested by BGA Ref DAI/8378/73.

R. B. STRATTON
Chief Technical Officer

(Details to be continued overleaf if necessary)

Suitable for installation in this aircraft *only/*and any other where Schweitzer type ..... aircraft
Banner hooks are installed

Limitations, Conditions, or Exemptions

NIL

Amendments in accordance with BCAR, Section A, Chapter A5-1, A6-1, A6-2, A6-4 or A6-7, as appropriate, are required to the following:*

Weight and C of G Schedule Flight Manual or equivalent Maintenance Manual Overhaul Manual	NIL	Repair Manual Maintenance Schedule Crew Manual Electrical Load Analysis	NIL

The above modification is approved and may be embodied subject to compliance with British Civil Airworthiness Requirements, Chapter A4-1. & Chapter K4-10.

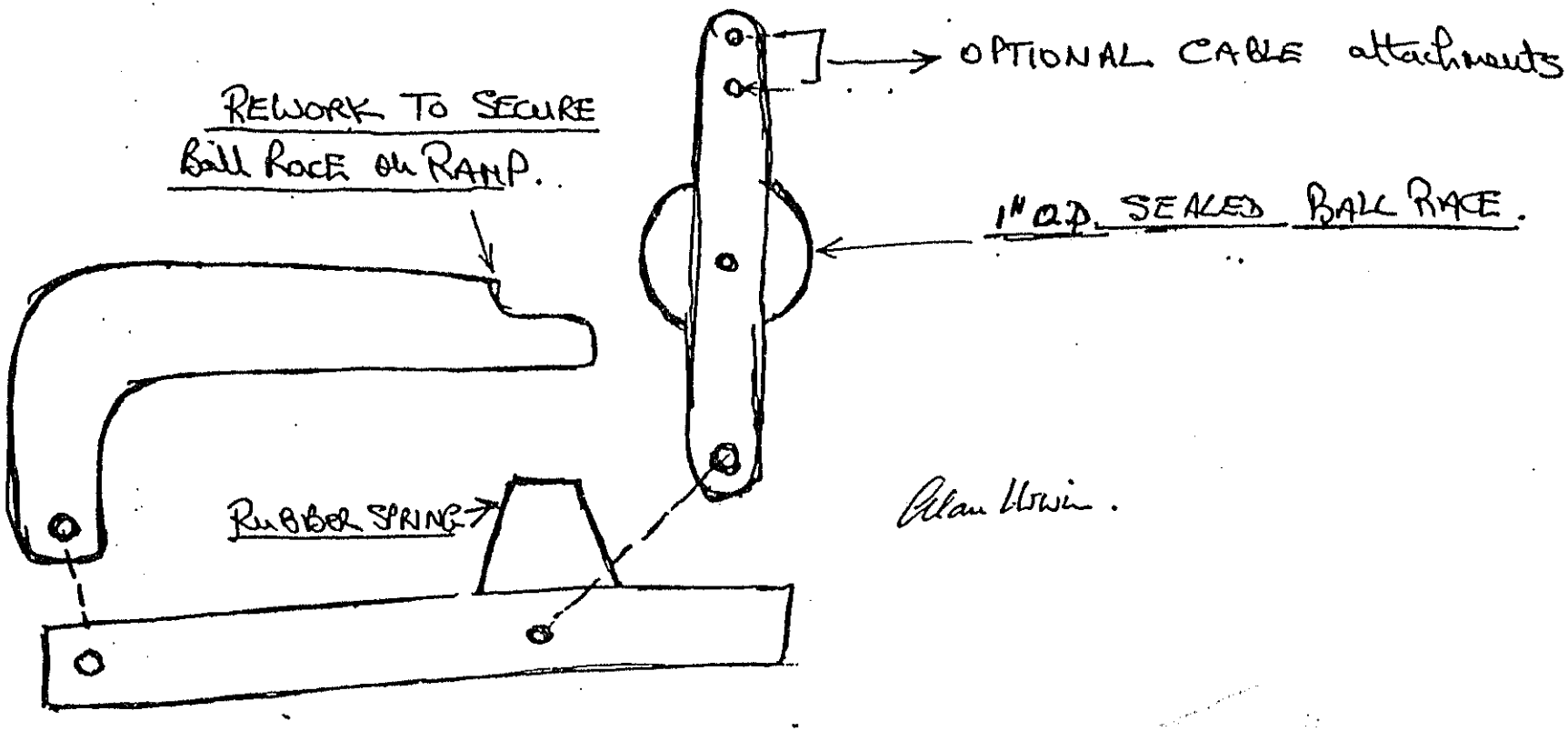
Date .....

.....
For the Civil Aviation Authority

AD 261
080382

*Delete as appropriate

This is a rough sketch to show what it is, if you would like to have detailed drawing or photo let me know.



Schweitzer Type Hook (MODIFIED), BGA MOD/T/1/85.

with 1" O.D. Sealed Ball Race – to reduce the Release I-d. (By 75% under tension approx).

For BGA.

ALAN URWIN 28/2/85.

7. Aircraft Propeller Damaged after Running into Deep Snow [P]

Aircraft : Sheibe SF25 Super Falke
Date : January 1987

After about 30 yards of the landing run, the aircraft ran into a patch of snow deeper than all the others that had been run through previously. The deceleration was sufficient to cause the tail of the aircraft to lift allowing the tip of the propeller to touch the snow. When opening up the engine to taxy back to the hanger, the noise was heard to be different so the engine was switched off. The propeller was found to be damaged.

8. Snow on the Wings [P]

Aircraft : Piper PA25 Pawnee Registration : G-BFEX
Date : February 1987
Reportable Accident near Eastling, Kent.

The Accident occurred on the 24th take off on a series of fertiliser spreading flights. The grass strip was about 500 metres long and the weather at the time was a temperature of -2 deg C with 8 octas at 1000 feet and a 5 knot northerly wind. The aircraft was being re-fuelled when a snow storm passed through, depositing about 1/2" of snow during a 30 minute period. The pilot reported that he spent 20 minutes clearing all the snow off the aircraft surfaces with a brush before re-starting. He also reduced the fertiliser load by 112 lbs to allow for the extra fuel.

About halfway along the take off run, the pilot reported that the aircraft felt heavy so he jettisoned the load but, although the aircraft became airborne shortly afterwards, he was unable to clear the 20 ft high hedge at the bottom of the field.

CAA Comment:
AIC 52/1985 and Safety Sense Leaflet No 7, Aeroplane Performance, both state that a snow covered runway surface can increase the take off distance to a height of 50 feet by 25% or more.

Although not a factor in the above accident, it should also be noted that any snow or ice on aerofoil surfaces can seriously impair the surfaces efficiency.

CAA General Comment:
The above items illustrate some of the problems to be experienced in Winter time. All pilots should remind themselves of the many other problems by reading Safety Sense Leaflet No 3, Winter Flying, CAP 512 Ground De-Icing of Aircraft, AIC 92/1987 (Pink 100) Frost, Ice and Snow on Aircraft, AICs 1 & 10/1985. The effect of Icing on Piston Engined Light Aircraft.

9. SHAGGY DOG STORY [P]

Aircraft : Rockwell Commander 690
Date : July 1987

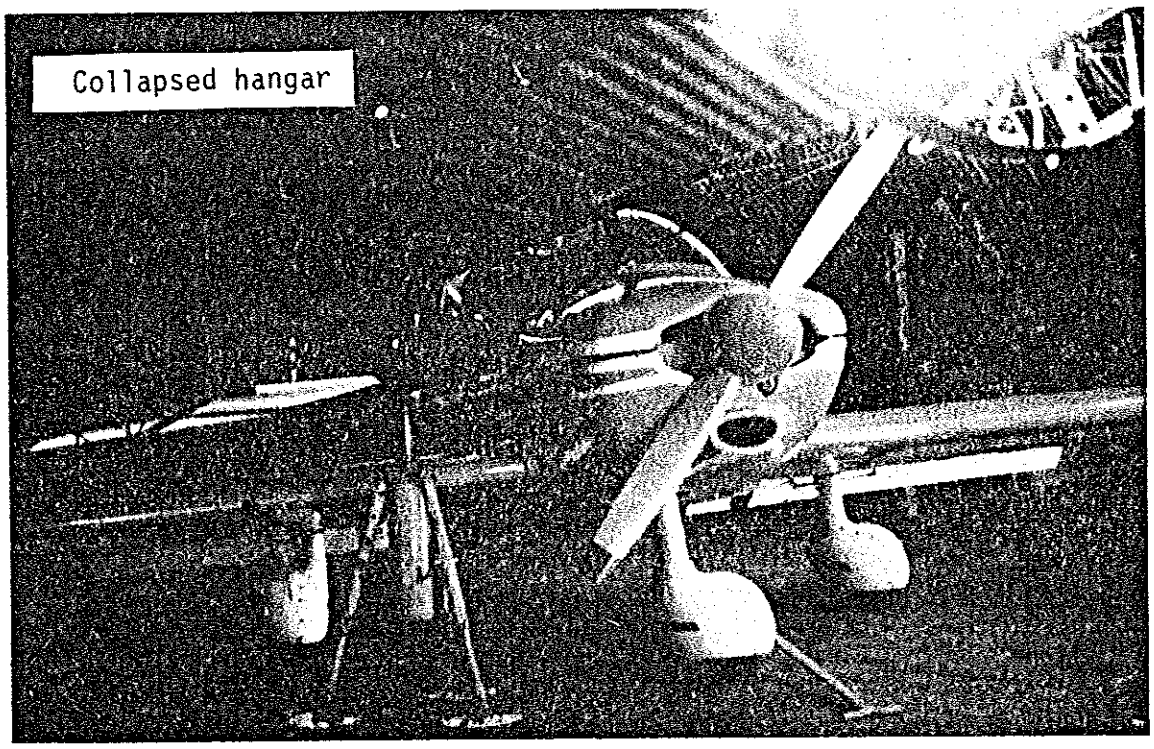
At about 70 knots during the landing roll, at a small German airfield, a sheep broke away from its flock grazing about 30 yards to the right of the runway. It ran into the path of the aircraft where-upon one of the sheep dogs tried to head the sheep away from the aircraft's path. The dog was struck by the right-hand propeller and killed, being hurled 30 yards to the right, damaging one propeller blade. The sheep passed between the rotating props, missing by a fraction, bounced off the fuselage, leaving some small scratches, rolled onto the runway and returned to its flock, shaken but according to the reporter with a large grin on its face!

CAA Comment:
It just shows how it pays to expect the unexpected!

6. WINTER PROBLEMS

P/E

Remember, last Winters heavy snowfall caused several hangars to collapse crushing quite a number of aircraft. So, as part of your Winter Programme, first, have a good look at your hangar!



Nose Wheel Bay Full of Ice and Snow

P

Aircraft : Piper PA23 250 Aztec
Date : January 1987

When the landing gear was selected down on final approach, the nose wheel 'green' failed to illuminate. The filament was changed, but the light still remained off, and a low pass down the runway for ground personnel to observe the aircraft revealed that the nosewheel was trailing behind the normal down position. The landing gear was cycled once again where upon all indications became normal and the landing was uneventful, although the engines had been shut down over the threshold and the passengers fully briefed. When the nose wheel bay was checked, it was found to be full of snow and ice. No other problems were found.

CAA Comment:
A reason for stopping the engine(s) prior to landing after an indication of landing gear malfunction is to reduce the possibility of propeller and engine damage should a landing gear leg subsequently collapse. In this case, after dealing with the emergency - "All indications became normal" - it is not clear why the Captain elected to shut down the engines having resolved the emergency. This action would probably have extended the landing ground roll (loss of drag from de-icing propellers) and limited the useful hydraulic pressure for braking (engine driven hydraulic pump) and possibly unnecessarily hazarded the aircraft and its passengers. Whilst this is a commendable practice in some instances, it should only be adopted after all emergency procedures have been followed and doubt still exists about the safe extension of the landing gear. In addition, all others factors affecting the safe landing performance of the aircraft should first be taken into consideration.

8. PRESSURE TO FLY

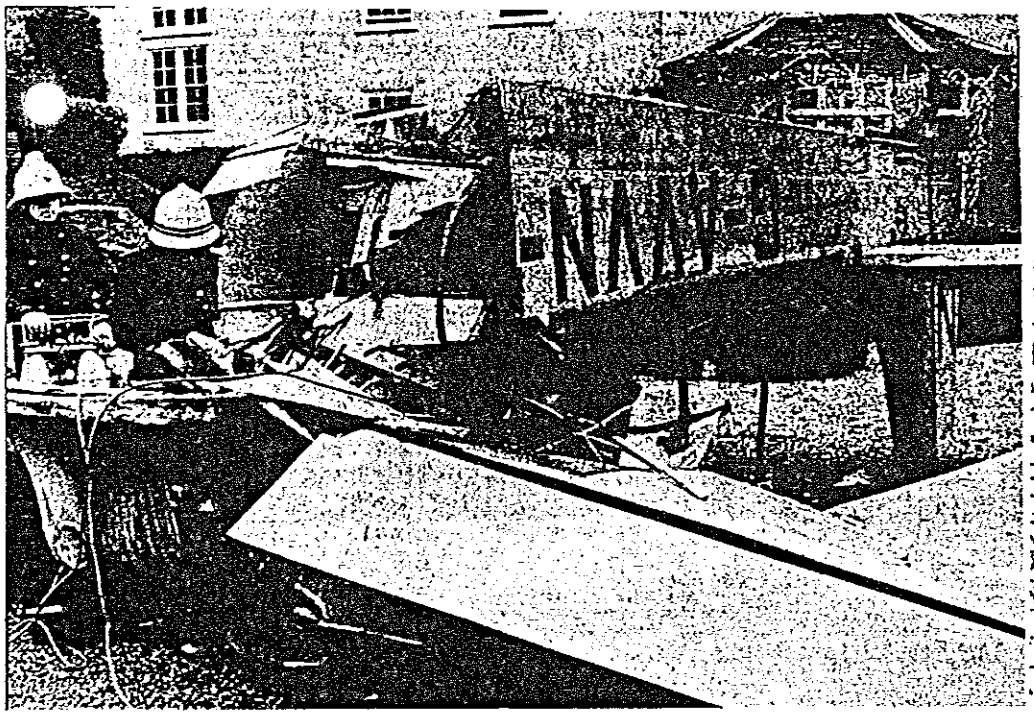
P

Aircraft : Rollason D62 Condor Registration : G-AVVN
Date : July 1987
Reportable Accident near Brome, Suffolk.

On the 28th July, the pilot did six glider tows from Tibenham Airfield, five under the supervision of an experienced tug pilot, and one solo. This was the first time she had towed gliders and the first time she had operated out of Tibenham Airfield. A further eleven tows were made on Thursday the 30th July.

It was the normal practice to refuel the tug aircraft after the last flight of the day. However, on 30th July, the aircraft was flown by another pilot and did three tows after its final refuelling at about 18.45 hours. On the 31st July the pilot took off at 09.55 hours, did five tows and landed at 11.17 hours. It was reported that she stopped the engine and expressed some concern about the amount of fuel remaining, the fuel quantity indicator being near the bottom of its travel. This was checked by a more experienced club pilot who assured her that there was sufficient fuel for a further tow.

At 11.21 hours the aircraft took off, on the westerly runway, towing a glider with two persons on board. Following a left turn, and climb to 2000 feet, the glider was released on an easterly heading about 2.5 nm to the south of the airfield. It was reported that on all previous tows, the pilot had taken the gliders to the north, returning to the airfield on a southerly heading. After release, the aircraft instead of turning north, continued south easterly and was seen orbiting in the vicinity of Thorpe Abbots Airfield which is about five nautical miles to the south south-east of Tibenham. It left the area in a westerly direction and was next seen orbiting Eye Airfield, which is about 7.5 nm south of Tibenham. The aircraft was seen flying down the south westerly runway at such a height that the tow rope touched the ground. It then turned left and climbed out to the north. Shortly before 11.45 hours, the aircraft was seen heading south and descending. At a height of about 50 feet agl, the nose was seen to rise sharply and the aircraft was reported to have turned over, striking the ground seconds later about 25 yards from the main building of an hotel, killing the pilot, the sole occupant.



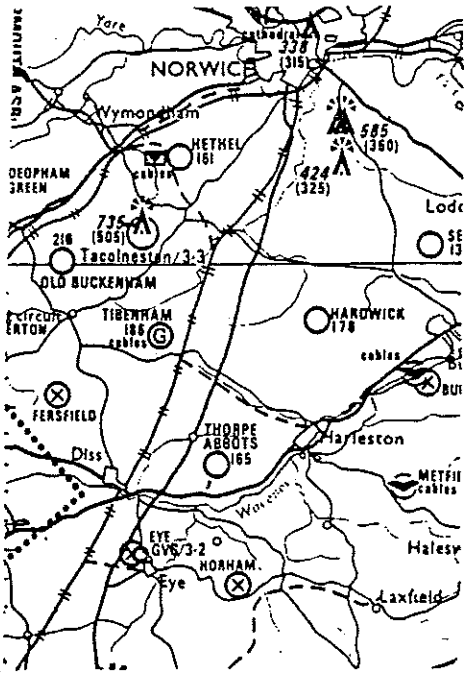


Photo - Eastern Daily Press

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Examination of the wreckage indicated that the aircraft had struck the ground and at an angle of about 70 deg nose down, with the wings almost level at an airspeed of about 80 knots. The heading at impact and the position of the tow rope indicated that the aircraft had rotated about 250 deg to the right during its final descent. This was consistent with a spin entry to the right at low altitude. There was no evidence of a failure of the flight control system before impact. The fuel tank was ruptured but there was evidence of some fuel present at impact. The only fuel found in the remainder of the system was a small amount in the carburettor bowl. The electric fuel pump was found on. The fuel cock was found in the OFF position. It was found to be difficult to move and a test using the Clubs other Condor and a female pilot of similar build, revealed that while strapped in she could with difficulty reach it, but could not move it. This could have been a factor in the pilot losing control.

Measurement of the fuel tank and fuel quantity indicator on a similar aircraft, in the three point attitude, showed that there would be about 3 Imp gallons in the tank when the indicator had reached the bottom of its travel. From this observation, it was estimated there was between 3 1/2 and 4 gallons in the tank prior to the final take-off. Based on the normal consumption of the aircraft, there should have been at least one gallon remaining at the time of the accident. In this aircraft the fuel is drawn from the front of the tank and calculation shows that a pitch attitude of about 12 deg in the climb would have been sufficient to expose the fuel outlet, leading to starvation of the engine. (SDAU Note: This problem is covered in the CAA Video 'Fuel Management')

The AAIB Bulletin stated that there was evidence of several factors which could have affected the pilot's ability to operate efficiently. During the evening of the day prior to the accident, the pilot had mentioned that she had started her period and was in some pain. She also mentioned the difficulty she had experienced in the air of orientating herself in the local area. (There are many disused airfields in the local area). She was aware of criticism, by her more experienced colleagues, of her ability as a tug pilot, in particular of her cautiousness and the time she took over each tow. When she had expressed concern over the fuel remaining, it was reported that she had been treated in an unsympathetic manner and was admonished for wasting time. The pilot had a total of 113 hours with 40 on type.

CAA Comment:
There may often be 'Peer' pressure to fly, either obvious or subtle:-

- you don't feel 100%, not ill, just a bit off colour
- you don't want to disappoint your passengers or others
- the Flying Club attitude is "you booked it"
- others are flying, so can you
- the weather will improve, the forecast may be pessimistic
- get-home-itis

Pilots must resist these pressures and use the authority granted to them by the CAA with their Licence, that of **Pilot in Command.** **You** are in charge. Use your authority and resist these pressures.

9. CONTROL COLUMN FELL INTO PILOTS LAP

P/E

Aircraft : Gardan GY80 Horizon
Date : October 1987

When returning from a flight test back to base, the pilot sitting in the right-hand front seat was flying the aircraft and felt a slight change in the stick force. The pilot's control column yoke then fell out of the control panel onto his lap. The co-pilot made the approach and landing under observation of the owner pilot. The aircraft was manufactured in 1965 and had flown a total of 1324 hours. The cause was failure of the control column universal joint part no. 8027-1140.

.....Contd

TNS 1/1/88.

A.A.I.B. Bulletin

No: 12/87 **Ref: 1c**

Aircraft type and registration:	Scheibe SF-25B Falke G-AYIL (Ref TNS 12/87)
No & Type of engines:	1 Peiper-Stark Stamo M/S 1500/1 piston engine
Year of Manufacture:	1972
Date and time (UTC):	6 September 1987 at 0930 hrs
Location:	Waldershare Park, near Dover, Kent
Type of flight:	Training
Persons on board:	Crew — 2 Passengers — None
Injuries:	Crew — 1 Fatal, 1 Minor Passengers — N/A
Nature of damage:	Aircraft destroyed
Commander's Licence:	Commercial Pilot's Licence
Commander's Age:	49 years
Commander's Total Flying Experience:	5407 hours (of which over 1000 were on type)
Information Source:	AAIB Field Investigation

On the morning of the accident the weather was fine with a 10—15 kt wind from the south west. G-AYIL had been refuelled that morning and had subsequently flown a sortie of 1 hour 15 minutes. The aircraft was serviceable after landing apart from some interference on the radio. It was decided that a more experienced pilot should conduct an airborne check on the radio which was to be combined with a dual instructional sortie. Normal pre-flight checks were carried out including a check of the fuel contents which established that there was adequate fuel for the proposed flight. The engine ran satisfactorily for the 2—3 minutes that it took to complete the required checks and briefing. Having decided that the engine was delivering full power at the start of the take-off run, the student pilot continued the take-off along the strip which was substantially into wind. At a height of about 50 feet, the pilot followed the normal procedure for the site and turned right through approximately 40° to align his climb-out track with a gap in the surrounding trees.

The normal climb-out track however, takes aircraft over the site of a gun club which is active on Sunday mornings. There was an existing agreement between the gun club and the gliding club operating the site that aircraft would not overfly the gun club when it was active. The instructor reminded the student that as it was a Sunday morning he should adjust his track to avoid the gun club. In response, the student entered a fairly steep right turn at a height estimated to be between 100 feet and 150 feet. This turn was entered at about 40 kts, the normal climbing speed, and stabilised at an angle of bank between 30° and 40°. Shortly after this turn was established, the instructor realised that the engine was stopping and immediately took control from the student. He continued the turn and lowered the nose to gain speed in order to

improve the manoeuvrability of the aircraft but was unable to avoid a wood which was downwind from the position where he suffered engine failure. The aircraft struck the trees in a nose down attitude banked 20° to the right. There was no fire but the student died from his injuries before reaching hospital. Both sets of 5 point harnesses had suffered partial failure.

Strip examination of the engine revealed significant quantities of water in the fuel filter bowl and engine driven pump together with large quantities of bacteria which indicated that water had been present for some time.

No evidence of any pre-crash defect in the flying control system or the engine was found.

CONTAMINATED FUEL!!!

TNS 1/88

S/D

Facet

Facet Aerospace Products Co.
Subsidiary of Facet Enterprises, Inc.
1410 Highway 70 Bypass
Jackson, TN 38301
(901) 423-2500

SERVICE BULLETIN

#A1-84

DATE: 4-84

TO: All Outlets

SUBJECT: * Carburetor Floats

Models Affected: All Marvel Schebler Carburetors

Time of Compliance: At next 100 hour inspection or immediately if any of the following symptoms are experienced:

1. Flooding carburetor.
2. Rough engine at low throttle settings.
3. Inconsistent engine shutdown.

There have been many reported instances of the molded cellular floats absorbing fluid, possibly 100LL Avgas, auto fuels, fuel additives or carburetor cleaner.

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* TECHNICAL ASPECTS ARE FAA APPROVED

B.G.A. TECHNICAL COMMITTEE

SUPPLEMENT TO TNS 1/2/88

C of A Renewals Self-Launching Motor Gliders, Ref: CAA Approval of the B.G.A. REF DAI/8378/73.

1) Introduction The CAA (Airworthiness Division) have indicated their intention to survey samples of civil registed aircraft administered by the B.G.A.(and also by the P.F.A., B.M.A.A. etc).

2) Since the location of some 100 such aircraft is so geographically wide-spread, and since clubs, and club members responsible for such aircraft, may not be available other than at weekends, some delays in completing such renewals is likely to arise.

3) To minimise the loss of use of such aircraft, full advantage should be taken of the facility to complete renewals 62 days prior to expiry (Ref LAMS (Blue Book) section 5 Note 2).

4) Having completed the C of A renewal work, the aircraft may continue to operate on the unexpired portion of the current C of A, whilst the C of A renewal submission and/or inspection is processed.

5) Preparation for the C of A Renewal (and/or CAA Inspection).

a) The Working conditions and facilities required to complete such work, must be to a commonsense acceptable standard.

b) Spare parts, whether in stock, or removed from aircraft must be properly identified and stored.

c) Such technical literature as may be essential to the proper maintenance of the aircraft, its engine, propeller, and equipment, must be available.

d) Technical Records such as worksheets, logbooks (Cap 389-Engine, and CAP 399 Airframe), rectification worksheets, and LAMS Proforma maintenance schedules, must be available.

The Green Pages of the airframe & engine log books should be updated, for scheduled servicing.

The Red Pages should record the current status of Mandatory Modifications and Inspections.

(Reference should be made to the B.G.A.'s Annual Compendium of Mandatory Modifications and Inspections, and to subsequent TNS, as well as to C.A.A.'s Airworthiness Notices).

6) The Light Aircraft Maintenance Schedule (lams Blue Book Issue 2. as ammended), is the basis for all Scheduled Maintenance. The third Annual Inspection is referred to as the "STAR" Inspection, at which time the C of A is renewed. The LAMS should be read by all concerned with its implementation. A record of the work carried out to show compliance with LAMS can be made on B.G.A. LAMS Proforma (TNS 10/86). Rectifications should be recorded on a separate Proforma.

7) Aircraft Documentation. The following original copies should be available ON SITE for inspection:

a) Certificate of Registration (CAA Form 71).
b) LAMS Proforma Record BGA LAMS 86.
c) Rectification Worksheets B.G.A. Form/TI.
d) Flight Manual or Operators Manual.
e) Weight & Balance Report.
f) LAMS)Blue Book) Issue 2 + amendments.
g) Certificate of Approval of Aircraft Radio Installation CAA Form 917 AD.
h) Log Books, complete with daily records of flying, schedule maintenance, rectification, repairs and modifications.
j) Daily inspection record (Article 34 of the A.N.O.).

8) The following documentation has to be submitted to the B.G.A. Office prior to its despatch to CAA:-

a) B.G.A. Form 267 (airframe inspection report).
b) B.G.A. Form 267M (Engine inspection report).
c) B.G.A. Form 267FT (Flight Test Report).
d) Certificate of Airworthiness (CAA Form 958).
e) CAA Forms 202L (From CAA or BGA Office). (Sample copy attached herewith).
f) Cheque for CAA fee - (Ref CAA Airworthiness Notice No. 25 currently £29.00 per 500kg or part thereof per year of validity i.e. for a 550kg aircraft the fee Payable to the B.G.A. is £29.00 x 2 x 3years = £174.00 (A 3% increase is expected 1/4/1987.

9) Placards and markings on the aircraft should be renewed as required, to ensure that essential limitations are conveyed to the crew. Fuel markings and accuracy should be checked.

10) The OWNERS Name Plate, (in steel) should be displayed in the cockpit area, to comply with the ANO.

11) Radio Installation Approvals (simple communication systems)

a) There is an ICAO/LAMS requirement for the frequency of transmitters to be checked at 48 month intervals.
b) Proforma BGA/RAD/INST/86 can be used to simplify your application to the CAA, for the issue of a Radio Installation Approval (CAA Form AD971).

12) Airworthiness Guidelines

a) B.G.A.Technical Procedure Manual(Tugs and Gliding Related Powered Aircraft) price £1.50
b) CA 520 " light Aircarft Maintenance" £1.50 from CAA Offices, are useful guides to getting things right!

13) Present Your Aircraft For C of A Renewal free of corrosion, well protected paintwise, clean both inside and out, and properly documented.

R.B.Stratton
Chief Technical Officer
Feb 1988

Civil Aviation Authority

Airworthiness Division

SAMPLE.

REPORT AND RECOMMENDATION FOR RENEWAL OF CERTIFICATE OF AIRWORTHINESS BY AN ORGANISATION APPROVED IN ACCORDANCE WITH BCAR, SECTION A, CHAPTER A8–15

NOTE: Where an item is not applicable or appropriate the letters 'NA' should be entered.

DISTRIBUTION

White	–	CAA Area Office
Pink	–	CAA Area Office
Yellow	–	Aircraft Records
Blue	–	Approved Organisation

1 AIRCRAFT DETAILS

1.1 Registration: _____ Type: _____ Constructor's No: _____

1.2 C of A Category: PRIVATE

1.3 Engine Type(s) _____ Propeller Type(s) _____

2 REPORT

2.1 Total hours flown either since manufacture or since initial issue of UK C of A*: _____

2.2 Hours flown during each calendar year since C of A issue or last renewal:

19 _____ hr/19 _____ hr/19 _____ hr/19 _____ hr/Total _____ hr

2.3 Aircraft tested to Airworthiness Flight Test Schedule No: BCA 26T FT. Issue No: – Date of satisfactory Flight Test: _____

2.4 Radio equipment installed is in accordance with Form AD 917 dated: _____

2.5 Flight Manual/Pilots Operating Handbook/Owners Manual* is in accordance with Flight Manual checklist dated: _____

2.6 Date of Current Weight Schedule: _____

2.7 ~~Aircraft is approved for Glider Towing/Parachuting*~~

2.8 I confirm that all appropriate CAA requirements and Airworthiness Notices – Contents No: _____ have been complied with.

2.9 I confirm that compliance with the following, as appropriate, is recorded in the aircraft records:

(a) FAA Airworthiness Directive Vol 1 at Bi-weekly Listing No: N/A.

(b) CAA Mandatory Modifications and Inspections Summary, Contents and checklist of pages at Issue } BCA dated LIST + TANS dated / / / (latest issue)

(c) Foreign Airworthiness Directives Vol III, Contents and checklist of pages at Issue _____ dated _____

(d) CAA Additional Directives, Contents and checklist of pages at Issue _____ dated _____

2.10 The aircraft complies with Specification/Data Sheet/Fiche No:* – Revision/Issue/Edition No: –

Quote Variations:

3 CERTIFICATION

3.1 STAR INSPECTION †

completed on: _____

Certified by:

Category *Name* *AMEL No.*

BCA INSPECTOR.

3.2 **Certified that** the appropriate requirements of BCAR, Section A Chapter A2–5 have been complied with and that the particulars contained herein are correct. It is recommended that Certificate of Airworthiness No: _____ be renewed for a period of 36 months, in the Private/~~Aerial Work/Transport*~~ Category

Signed: _____ Name: STRATTON.

Organisation: BCA.

Approval Ref. No.: DAT/8378/73 Date: _____

The following documents are attached for CAA records: ~~Flight Test Schedule/Flight Manual Check List/Weight and Centre of Gravity Schedule~~*

BCA FORMS 26T/26TM/26TFT.

*Delete as necessary

†To be in addition to and coincidental with the annual check (CAIP BL/1–15)

AD 202L
010485

TNS/1/88

MARINE BUILDERS' TRAINING TRUST

HAZEL RD.
WOOLSTON.
SOUTHAMPTON. SO2 7GB.
0703/446824.

COURSE PROGRAMME

GRP COURSE DATES

AND

CONDITIONS

COURSE	DATE
~~GRP HAND LAMINATING SKILLS COURSE **~~	~~18TH JANUARY 1988~~
~~GRP HAND LAMINATING SKILLS COURSE **~~	~~8TH FEBRUARY 1988~~
GRP HAND LAMINATING SKILLS COURSE **	14TH MARCH 1988
GRP HAND LAMINATING SKILLS COURSE **	23RD MAY 1988
ADVANCED FRP TECHNIQUES COURSE	6TH JUNE 1988
GRP HAND LAMINATING SKILLS COURSE **	20TH JUNE 1988
ADVANCED FRP TECHNIQUES COURSE	27TH JUNE 1988
GRP HAND LAMINATING SKILLS COURSE **	1ST AUGUST 1988

** INCLUDING CITY & GUILDS SKILL TEST

Whilst every effort will be made to run the courses shown, the Trust reserves the right to cancel any courses that do not attract sufficient bookings.

FEES

GRP HAND LAMINATING SKILLS COURSE (INCLUDING CITY & GUILDS TEST FEE)	£170.00
ADVANCED FRP TECHNIQUES COURSE	£235.00

CONDITIONS

50% of all fees will be charged for bookings cancelled less than two weeks before the course starts. No refund can be made in respect of cancellations received by the Trust after this period.

ACCOMMODATION

Ample accommodation is available in guest houses and hotels in and around Southampton. A list will be sent with the joining instructions.

MARINE BUILDERS' TRAINING TRUST

COURSE PROGRAMME

G.R.P. HAND LAMINATING SKILLS COURSE
INCORPORATING
CITY AND GUILDS TEST

DURATION: 5 DAYS

PARTICIPANTS: This course is intended for members who require not only practical experience but also the technical knowledge for selection of suitable methods of G.R.P. application.

OBJECTIVES: Course members will be able to:-

1. Carry out correct lay-up sequences and repairs.
2. Identify various reinforcements and their correct application.
3. Recognise and diagnose various laminating faults.
4. Select various plug and mould making techniques.
5. Recognise hazards and regulations identified with G.R.P. processes and take action to meet the requirements of the Health and Safety at Work Act 1974.
6. Undertake the City and Guilds Skills test.

COURSE CONTENT

Technical Lectures	Instruction and Practice
a. Resin and catalyst systems.	a. Mould preparation release systems.
b. Reinforcements and construction techniques.	b. Resin mixes.
c. Plug and mould construction.	c. Reinforcements and ratios.
d. G.R.P. safety.	d. Lay-up procedures.
e. Faults analysis.	e. Release and trimming.
f. Moulding methods.	f. Correct repair techniques.

CITY AND GUILDS SKILLS TEST

1. Multiple choice question papers.
2. Practical test.

GEL COAT DURABILITY:- A REVIEW

In June - July '83 issue of S. & G. I wrote a short feature entitled "What is a gel coat". The article which highlighted the importance of polishing with pure wax, and explained the brittle nature of gel coats, concluded by suggesting a survey of gel coat defects. In retrospect this was to some extent prophetic in the light of articles published in the U.S.A., Australia and U.K. particularly during the last threee years.

Articles concerned with Gel Coats, which have been featured in S. & G. are

June - July 1985	Why GRP Gliders must be white - Doug Jones
Oct - Nov 1986	The mortality of Gel Coats - G. Thelen.
	This article first appeared in the April '86 issue of SOARING and followed by "Skin care for your sailplane" in the July '86 issue of SOARING by the same author.
Feb - March '87	Gel Coats - J. Scott
Aug - Sept '87	Cold floppy wings and other things - G. Thelen.

In addition considerable attention has been given to this subject in Australia since the rate and incidence of gel coat deterioration has been more extensive than that experienced in more temperate climates.

Australian Gliding Sept. '86 carries a technical article re the importance of polishing and application procedures.

A technical article by Noel Roediger of "Riverside" Gawler, S.A. 5118 written for the G.F.A. gives a detailed procedure for the re gel coating of a sailplane and pays particular attention to the skill and care essential for ensuring a satisfactory result.

Copies of the above articles from Australia can be obtained from the B.G.A. The technical content of the various articles is a high standard and collectively form a fairly comprehensive compendium of information, coupled with the features published in S. & G. to date.

The evidence to date indicates that the earlier generation of GRP sailplanes which embodied "Schwabalat" gel coat are less susceptable to brittle fracture paths compared with "Vorgalet" get coat which was used more extensively from the mid 70s.

As yet no perfect finish has been developed, and to achieve a compatible finish with sailplane fabrication method is limited in scope. It is likely greater emphasis will be applied to paint type finishes such as Acrylic or Polyeurathane which in recent years have dominated aircraft and car finishes. One of their main advantages is that they have a higher degree of flexibility and are thus able to absorb the strains experienced by the structure. In addition, the higher flexibility enables the paint finish to cater for the effects of varying temperature more readily than traditional polyester gel coats.

The various articles which have been published collectively cover the majority of defects which have arisen to date. Care and maintenance of the finish is essential and regular polishing with bees wax to alleviate the hygroscopic nature of gel coats is commended. This type of treatment will reduce the risk of large numbers of small blisters containing water occurring due to absorption of condensation. Wax polishing is not a panecea however to prevent all types of defect and to date no preventative action has been established which will alter the brittle nature of gel coats used to date. In light of the interest and some cases concern by owners/operators would manufacturers express their views and indicate the options for the future.

DOUG JONES

February 1988