BRITISH GLIDING ASSOCIATION

TECHNICAL COMMITTEE

TNS 3/4/80

1. AIRWORTHINESS "AGGRO"

Please add to the 1980 Green Pages.

1.1. Bocian Air-Brake Cables have been found frayed in the centre-section, at C. of A. renewal. (Bath & Wilts G.C.)

1.2. IS29D - Flap Lever found to be cracked in the area of the locking mechanism. (Jim Hill, N. Yorks).

1.3. Cobra 15 - Wheel-hub Cracked through the bolt holes, and from the valve. Repaired by Argon Welding. (J.A. Mace, Swindon).

1.4. PIK 20E, Engine Down-lock fouled by pylon restraint cable, so that engine could not be raised. (Ian Strachan R.A.E.).

1.5. PIK 20E, Fuel Tank Chafed by tow release cable. Service Bulletin M.20.E.3. (attached) effects serial No's 20215, 20221 - 20233 and 20235, and requires removal of a clip and strapping of the cable, (mailed to owners).

1.6. Astir CS77, Rudder Pedal Adjustment/Tow Release foul. With rudder pedals forward, tow release would not close completely because of a foul between rudder-pedal coilsprings, and nylon sleeve carrying tow release cable. Trim nylon sleeve as required. (Mike Astley, Coventry G.C.).

1.7. T.65A "Vega", Elevator Actuator, pin retention. T.I. No 91 (attached) requires pre-flight inspection and subsequent replacement of pivot pin. Serial Nos. 1885 - 1920 inc. Has been mailed to owners. Compliance by May 1980.

1.8. Slick Magnetos (Certain Tugs & Motor Gliders). FAA (Emergency) A/D (attached) requires inspection for soft pins in impulse couplings.

1.9. KA-7 with Ottfur Tow Hooks. Damage to side plates by the small ring, may impair back release (sketch attached from J.A. Little, Northumbria G.C.).

1.10. Schleicher Series (KA-18), Rudder Hinge Cracked. Top (welded) hinge found cracked on annual inspection. Ref. item 37 on Form 267. (Reported by R.A.F.G.S.A. Bicester).

1.11. BGA List of Mandatory Modifications and Special Inspections
At annual inspection (if not required a more urgent basis) compliance with the above list should be made in accordance with item 53 of Form 267. (Signal radiated from the Radio Tower at Membury) !

2. GENERAL MATTERS

2.1. Bocian Elevator Drive Rod failure - prevention. The Tech. Committee have approved mod. Ref. BGA/Bocian/1/80, originated by Coventry G.C., to statically balance the elevator in the neutral position, by means of a "bungee" discreetly introduced between the elevator lever in the centre-section and adjacent structure.

2.2. Slingsby Engineering T.I. No.89 (Loose Screws), attached to TNS 1/2/80. The torque figures quoted therein were derived from B.S. Specs 2A-125 and 2A-126. The rather low figures are therefore correct.

2.3. "Approval" of Commercial Materials. The B.G.A. Technical Committee will investigate, with a view to "approval", commercial materials of good repute, for which specification/ data sheets are available:-

(a) "Aerelene" and "Aerolene Ultralite". Heat shrink fabrics, as supplied by Southdown Aero Services and applied in accordance with attached instruction leaflet, are approved for use on gliders.

(b) CIBA - Geigy epoxide adhesive AV129/HV997 as per instruction sheet A.57 (G).

(c) CIBA - Geigy XD927 is an acceptable alternative to Shell Epicote 162/113.

(d) Bostik 2001 (epoxy-resin) in accordance with Information Sheet B.87.

(e) Scotchweld Structural Adhesive 2216 B/A in accordance with Product Spec. 2216 B/A.

(The Tech. Committee are most grateful to Peter Wright, Buckminster G.C. and to Doug Jones, Cheltenham & Glos. for these suggestions.)

3. TUGS ETC.

3.1. Radio Station Approval. ASH 720A. 720 Channel transmitter/ receiver (118-135.975 MHZ), has C.A.A. approval Ref. G-38-C-A 1/2/80.

3.2. Slick Magnetos - Ref. para. 1.8.

3.3. Gypsy Major Repairs (Cracked Crankcases). Norvic Racing Engines, Little Stoughton Airfield, Colmworth, Beds. (Colmworth 700) have evolved modifications to repair the cracked bulkheads in the above engines. Cylinder-head repairs may also be possible.

3.4. Tug Manager's Advisory Package (T.M.A.P.) (90p from BGA) includes C.A.A. information leaflet AD/1L/0076/1-4, titled "Maintenance and Certification of Aircraft not exceeding 2730 kg M.T.W.A. - owner/operator responsibilities". This package includes guidelines on operating costs, insurance, spare parts, repair arrangements, management techniques, and incidents/accidents etc. (Why not purchase also "Winch and Auto-Tow Equipment" (90p))

3.5. C.A.A. Accident/Incident Reports. Attached herewith reports concerning :-

(a) SF 25E - carb heat/overshoot

(b) PIK 20D - Elevator not connected

(c) Contaminated fuel.

3.6. Revised Glider Towing Weights (see attached list). Registered owner/operators must apply in writing quoting the REGISTRATION for each tug for which revised flight Manual amendments are required.

R.B. STRATTON
CHIEF TECHNICAL OFFICER

3.6. REVISED TUG TOWING WEIGHTS TNS/3/4/80

As agreed between B.G.A. and C.A.A. March 1980. Not effective until promulgated in Flight Manual Ammendments for each Tug. (Apply to C.A.A./A.D. Brabazon House, Redhill, RH1 1SQ, Surrey).

Chipmunk - Gypsy Major.	1700 lbs.
Chipmunk - Super - 180hp	2200 "
Tiger Moth	1000 "
Tiger Moth (1C engine)	1200 "
Auster 5B	1350 "
Auster 6A	1300 "
Auster Terrier	1050 "
Condor (0-240 Engine)	1500 "
Condor (AE)	1800 "
Condor (0-200)	900 "
PA18 - 150 Super Cub	1900 "
PA18 - 90 Cub	700 "
PA18 - 180	2400 "
Citabria	1800 "
Cessna 172	1500 "
PA12 - Super Cruiser	1700 "
PA25-235 Pawnee	2500 "
Rallye Commodore	2200 "
Vilga	2500 "
Robin DR.400	2200 "

(These figures have been agreed on the basis of a minimum rate-of-climb of 300 ft/min in ISA (15° C) ambient conditions)

PIK 20 E To all owners - TNS|3|80

EIRI KY
EIRIAVION
Kisällinkatu 8
SF-15170 LAHTI

SERVICE BULLETIN December 17th 1979 M 20 E-3 page 1 of

PIK 20E

REASON	Chafe of fuel tank
EFFECTIVITY	PIK 20 E s/n 20215, 20221-20233 and 20235.
DESCRIPTION	The clip of the tow cable can touch the back side of the fuel tank and possible chafe the fuel tank.
COMPLIANCE	Next 25 hours maintenance.
INSTRUCTIONS	Remove the floor and the fuel tank. Remove the cable clip and screw. Attach the cable to the wheel house with a good (cloth) tape. Install the fuel tank and the floor. Check the controls carefully for free movement in all positions.
WEIGHT AND BALANCE	No effect.

APPROVED BY THE
NATIONAL BOARD OF AVIATION
IN FINLAND February 08th 1980

Issue: 1
19.2.80
TN5/3/80

Slingsby Engineering Limited

Kirkbymoorside

YORK. YO6 6EZ

TECHNICAL INSTRUCTION No. 91

SLINGSBY T65A VEGA

PREFLIGHT INSPECTION AND REPLACEMENT OF ELEVATOR ACTUATOR PIVOT PLATE PIN

Introduction

A case has been recently reported of the circlip that holds the pivot pin in place, being knocked off during rigging. This instruction requires a pre-flight inspection and later replacement of pin and circlip with a new pin to take a split pin and washer.

Applicability

All T65A Vega gliders fitted with circlip retained pin. Works Nos 1885 to 1920 inclusive.

Compliance

This instruction has been made mandatory by the C.A.A. A pre-flight inspection is required until modification action has been embodied. A new pin is to be fitted within three months of receipt of this instruction and log book marked T.I.91 satisfied.

Procedure (Pre-Flight Inspection)

Determine whether the glider has the circlip retained pin fitted. If so please inform Slingsby Engineering Limited who will provide a new pin free of charge. The pin is to be found on top of the fin rear spar and holds the elevator actuator plate onto fin post fitting. Note position of circlip, i.e. port or starboard. Carefully rig tailplane into position, deflect the rudder fully opposite to the side of circlip, with the aid of a torch, look up through a small gap in the elevator actuator plate and check that circlip is in position. If circlip is not in position remove tailplane and replace circlip. Repeat above procedure.

Procedure (Replacement Pin)

Remove circlip and pin. Fit in new pin from stbd side add washer and split pin. Rig tailplane and check for free movement in elevator.

Parts Required (to be supplied, on demand, by Slingsby Engineering Limited)

1 off T65A-45-136 (Iss 2 or subsequent) pin
1 off SP126/E Washer (thin)
1 off SP90/B4 Split pin.

EMERGENCY AIRWORTHINESS DIRECTIVE

TNS 1/4/80

DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

13 FEB 1980

AIRWORTHINESS INFORMATION REGISTER	
TIME & DATE RECEIVED	10-30 13 FEB '80
REGISTERED No. 9/92/AMC	252 .

FLIGHT STANDARDS SERVICE
FLIGHT STANDARDS NATIONAL FIELD OFFICE
P.O. BOX 25082
OKLAHOMA CITY, OKLAHOMA 73125

February 4, 1980

SLICK MAGNETOS

Pursuant to the authority of the Federal Aviation Act of 1958, delegated to me by the Administrator, the following Airworthiness Directive (AD) is issued and applicable to all owners and operators of aircraft with magnetos manufactured by Slick Electro, Inc., Rockford, Illinois with model and serial numbers as follows:

MODEL NO.	RANGE OF APPLICABLE MAGNETO SERIAL NUMBERS*
447	9040001 thru 9040049
447R	"
662	9020462 thru 9070000
662R	"
664	9040001 thru 9040086
664R	"
680	9020462 thru 9070000
680R	"
4151	9020017 thru 9070000
4151R	"
4152	"
4152R	"
4181	"
4181R	"
4201	9020210 thru 9070000
4201R	"
4230	9040001 thru 9040197
4230R	"
4251	9030001 thru 9070000
4251R	"
4281	"
4281R	"
6210	8090073 thru 9070000
6214	8050001 thru 9070000

*Any magneto serial number between and including the lower and upper numbers shown are affected by this AD.

These magnetos are installed on, but not limited to, the following engines:

+ Volkswagen VARIANTS ?

LYCOMING	AEIO-360
	AEIO-320
	IO-320
	O-235
	O-320
	O-360

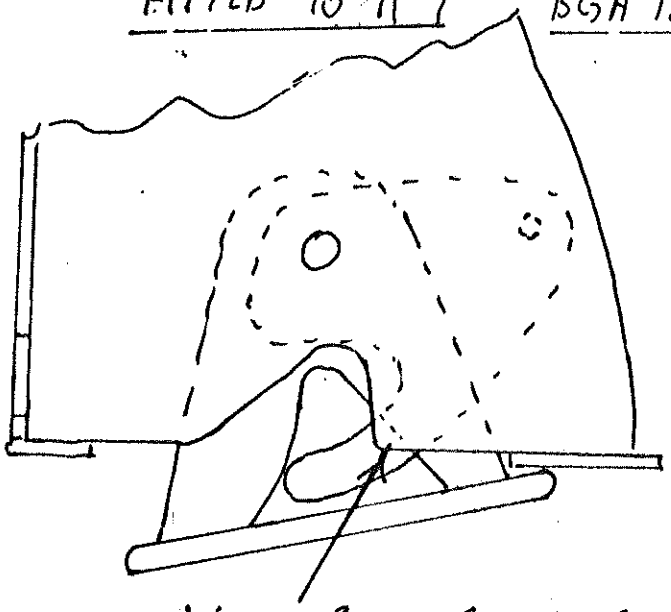
EMERGENCY AIRWORTHINESS DIRECTIVE

TNS | 3 | 80

K-7 File

OTFUR RELEASE

FITTED TO K7 BGA 1349



WINCH CABLE SMALL RING HAD BEEN BEARING ON THIS POINT & DISTORTED METAL TO FORM A LARGE RAG ON THE INSIDE. IF THIS HAD INCREASED IN SIZE SLIGHTLY IT COULD HAVE PREVENTED BACK RELEASE OPERATING

J. A. LITTLE
NORTHUMBRIA R.C.
MARCH 1980

SOUTHDOWN AERO SERVICES LTD.
LASHAM AIRFIELD, ALTON, HANTS

TNS/A/80

Procedure for covering Gliders & Light Aircraft with "Aerolene" Fabric.

1. Until recently, aircraft fabrics were virtually the same type of material as used by the early flying pioneers. Now, with the introduction of "Aerolene" fabrics, Southdown Aero Services Ltd., have made available a material which is superior to all cotton and linen fabrics, having a lighter weight, greater strength and the probability of lifetime durability. Other advantages are that as the material is heat shrunk after covering there is a considerable saving of man hours and doping materials.
2. The material comes in two grades."Aerolene" Super fabric is supplied in a width of approximately 105 cm. Its weight is 126 gms per sq. metre and is used for covering all unsupported surfaces."Aerolene" Ultralite fabric is supplied in a width of 155 cm. Its weight is 49 gms. per sq. metre and is used for covering all supported surfaces such as plywood covered fuselages and wing leading edges. It can also be used in the covering of unsupported surfaces of gliders with a fairly low wing loading of approximately 4lb per sq. ft.
3. It is recommended that before commencing covering a test frame is made and covered with "Aerolene" in order to gain experience with the new material.
4. Before recovering an old aircraft examine all metal fittings, attachment bolts, electrical wiring etc. Any item showing signs of wear or deterioration and considered to be incapable of lasting at least ten years should be changed.
5. It is best to cover all plywood surfaces first and for this operation "Aerolene" Ultralite fabric is recommended. The surface to be covered must be smooth, clean and free from contamination such as oil etc. Four coats of clear dope are applied to the plywood surface. When dry attach the fabric by using "Aerolene" cement in an inch wide strip around the edges. When completely dry shrink the fabric with a household steaming steam iron, or an ordinary iron in direct contact with the surface and the temperature set on "WOOL" setting i.e. 240F. The iron should be moved across the surface at a speed of approximately six inches per second, in a side to side movement then covering the same area with a top to bottom movement to ensure uniformly shrinking all areas. It may be necessary to repeat this operation two or three times, depending on conditions. When the required tautness is achieved brush on two coats of clear dope, thinned with a 30% addition of thinners. This will penetrate the fabric and form a perfect bond with the plywood surface. All joints in the fabric should have approximately a one inch overlap.
6. The next operation will be the covering of all unsupported surfaces. Before covering a wing, the ribs, trailing edges and a 1½ inch wide strip along the leading edle ply covering shouldbe given about four coats of "Aerolene" cement. When completely dry the fabric should be attached to the 1½ inch wide strip after a further coat of "Aerolene" cement has been applied. Allow it to dry completely. The ribs and trailing edges are given a coat of cement and the fabric is laid over the wing. Do not worry about minor fabric wrinkles as these will disappear upon application of heat. After a further coat, where the fabric is in contact with the structure, pad down with cotton rags soaked in cellulose thinners to ensure a good bond. It must be emphasized that the cement is perfectly dry before proceeding to the next stage in order that the fabric does not pull away from the structure when the heat shrinking process is carried out. With the cement perfectly dry carry out the ironing process as described in paragraph 5. Several passes may be required before achieving the required tension, but do not over tension. When the correct tautness is attained apply two coats of clear dope, thinned by 30% of thinners, followed by a further two or three coats of dope at normal viscosity. After stopping up seam joints etc., and rubbing down, the surface is ready for the paint scheme which would be normally employed.
7. When covering steel tube structures the tubes must be given several coats "Aerolene" Tube Cement, and the first panel of "Aerolene" fabric must be wrapped around the tubes and securely bonded throughout its length. The application of the second panel should overlap the first by at least twice the diameter of the tube. Reinforcing tapes over the joints may be of cotton, linen or "Aerolene", although it must be emphasized that cotton or linen tapes will not have the same life expectancy as "Aerolene" fabric.

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TNS 4 80

No: 3/80 Ref: EW/G79/12/06

Aircraft:	Scheibe Super Falk S25E Motor Glider G-BDGX
Date and time (GMT):	28 December 1979 at 1055 hrs
Location:	Husbands Bosworth Aerodrome, Leicestershire
Type of flight:	Training
Persons on board:	Crew - 2 Passengers - nil
Injuries:	Crew - nil Passengers - n/a
Nature of damage:	Port wing and fuselage severely damaged. Canopy and propeller broken
Commander's Licence:	Private Pilot's Licence
Commander's total flying experience:	2,200 hours in gliders. 457 hours in powered aircraft (of which 3 hours were on tpye)

The aircraft was operating with two pilots on board, an instructor in command with a relatively inexperienced pilot.

After two satisfactory touch-and-go landings the trainee pilot established the aircraft in a normal approach at 55 to 60 knots with spoilers extended for a third landing. The instructor then took over control so as to line up on the proposed approach path, and to complete the landing. At a height of about 30 feet the aircraft suddenly veered to the left. The instructor opened the throttle with little apparent increase in power, then retracted the spoilers and attempted to level the wings, however the aircraft continued turning until it was flying at right angles to its previous heading. It then struck the boundary fence and crashed in the field beyond.

Examination revealed the possibility that the instructor's right foot, which was artificial, had jammed against the left pedal of the right hand rudder controls restricting the use of right rudder for recovery from the turn.

It was also found that the carburettor hot air control was selected to fully hot, thus explaining the lack of power when the throttle was opened.

HOT AIR ON

OVERSHOOT?

11

TNS/4/80

7. Water Contamination of Aerodrome Fuel Storage

Aircraft : Gulfstream American AA5 Traveller
Date : January 1980
Notifiable Accident at Elstree

At about 80ft just after take-off the engine failed. The aircraft crashed and was destroyed, without injury to the three occupants. The cause was contamination of the aircraft's fuel, due to failure of the procedures for dealing with water at the aerodrome storage facility.

CAA Comment:
The aircraft had been refuelled just before flight, and would have had to stand for a little while to allow all the water to separate out, before the pilot could make a drains check. The procedures for sampling, and recording tests, at the aerodrome have been reviewed.

8. Water in Fuel

Recently the Australian Aviation Safety Digest described an accident to a turbine powered twin-engined aircraft which was refuelled at a mining strip from 200 litre drums of Jet A1 fuel. The drums were unsealed and the aircraft refuelled. About 20 minutes later the pilot used an opaque plastic coffee cup and drained from each wing tip tank a small sample which he inspected, smelled, identified as the correct fuel and threw away.

Later, while climbing through 12,000 ft, both engines lost power and flamed out. An attempted re-light was unsuccessful. A forced landing in open flat desert was accomplished with only minor damage to the nose wheel doors.

Subsequent checks showed that the aircraft had been refuelled mainly with water. Other drums at the mining strip were inspected and found to contain varying amounts of water up to 100%. Laboratory analysis of the water showed it to be from a ground water bore a short distance from the town served by the airstrip. It was not possible to determine how, why and by whom the water was placed in the 'sealed' drums.

The pilot did not expect to find water in the drums or aircraft's tanks, but no checks for contaminants were carried out before refuelling commenced, no filtration equipment or water-detecting aids were used at any stage, and the checks the pilot made after refuelling were inadequate to detect the presence of water in the fuel.

CAA Comment:
Water detection pastes or paper (equally suitable for kerosene or gasolene) can be used in conjunction with either a bulk sample or a sample drained from the aircraft's fuel tank(s). For advice on availability of paste or paper, contact your fuel supplier.

9. Use of Motor Gasolene in Aircraft

It has been brought to our attention that some pilots are using motor gasolene in their aircraft, because it is cheaper than AVGAS.

It should be noted that the validity of engine certification depends upon the use of approved fuels. Aircraft flight manuals, pilots notes, etc., clearly state the approved fuel. Almost without exception this is AVGAS, although certain home-built aircraft and Volkswagen-engined motor gliders have been cleared for use with motor gasolene. Motor gasolene has not been approved for other aircraft because it has not been adequately tested, and the technical reasons why it must not be used are detailed in CAA Airworthiness Notice No 70, para 3. Further, the FAA do not recognise the use of motor gasolene as an alternative where the manufacturer's manuals require AVGAS. (See FAA Order 8110.18).

Where motor gasolene is used in an aircraft for which it is not approved, the flight is not in accordance with the certificate of airworthiness. In the event of an accident, it is therefore possible the insurance would be invalid. It is not worth taking the risk for the sake of a small saving in fuel cost.

If the results of the comparative hardness test on the rivet(s) are questionable, the coupling assembly must be replaced.

A special flight permit may be issued in accordance with FAR 21.197 to fly the aircraft to a base where the inspection may be performed.

WILLIAM S. DALTON
Acting Director, Great Lakes Region

FOR FURTHER INFORMATION CONTACT:

Cornelius Biemond, Engineering and Manufacturing Branch, AGL-217, Flight Standards Division, FAA, 2300 East Devone Avenue, Des Plaines, Illinois 60018, telephone (312) 694-4500, extension 460.

PIK 20D — ACCIDENT REPORT —

Aircraft:	PIK 20D single seat sailplane BGA No.2536
Date and time (GMT):	19 August 1979 at 1412 hrs
Location:	Booker aerodrome, Buckinghamshire
Type of flight:	Aerotow and local flying
Person on board:	Crew - One Passengers - Nil
Injuries:	Crew - One (serious) Passengers - Nil
Nature of damage:	Fuselage, wing and tail section fractured
Commander's Licence:	None required
Commander's total flying experience:	904 hrs (706 on gliders. 12 hrs on type)

According to the pilot he rigged the glider for the first aerotow launch of the day and completed his pre-flight checks. After rigging he stood by the cockpit and operated the aileron and elevator controls to observe control surface movement because of the difficulty in checking when strapped in; response appeared normal.

After being strapped in, he repeated the control movement checks including the rudder, with control surface movements being checked by an observer at the wing tip to confirm correct movement.

Soon after becoming airborne the glider was seen to ascend steeply in the high tow position and the tow cable released at a height estimated to be between 100 and 150 ft. The glider then descended at a steep angle and struck the ground, bounced and came to rest 60 metres beyond the first point of impact and the pilot was seriously injured. The elevator was found to be disconnected at the vertical connecting rod in the tail assembly with the safety locking pin hanging loose.