BRITISH GLIDING ASSOCIATION

Technical Newsheet TNS/6/7/79

1.0. Airworthiness "Aggro". (Please add to 1979 Yellow Pages)

1.1. Diamant 16.5 and 18.0 m. AD 79-525 (in German) has been mailed to registered owners.

1.2. Kestrel (Glasflugel) Serial No's 25 - 129.
Failure of dive brake control rod end (weld).
Glasflugel Tech Note 401-16 and LBA AD 79-233 requires inspection of welded control rod ends. (Copy attached).

1.3. Twin Astir Serial No's 3000 - 3040. Cracks in air-brake locking levers with lightning holes (Pt. No. 103-4123).
Tech Note 103-5 and AD 79-258 require levers to be replaced. (Copy attached).

1.4. DG 200 Vne restricted and water ballast limitations.
AD 79-232 restricts the T.O. weight to 350 kgs pending modification to spar shear web. Circulated to owners and confirmed by BGA Technical Committee 30/5/79.

1.5. Glider tow rings. Ottfur (large ring) may foul in submerged hook type installations in certain glass ships. Since Ottfur hooks are no longer in production, the trend must inevitably be towards the general introduction of Tost type rings, with elongated large ring, to avoid such fouling. Please check for this problem and resolve accordingly. (Club Technical Officers). (Reported by D. Piggott, Lasham).

1.6. "Vega" airbrake - operating loads.
One case has been reported of excessive loads being required to UNLOCK the brakes, when elbow pressure is accidentally applied to the control rod (Reported to Vickers-Slingsby by T.C. Harrington).

1.7. Jantar (lower rudder hinge). A further case has been reported of failure of the lower (wooden) hinge. Re-inforce as required. (Reported by Don Austin).

1.8. Pirat air-brake rod fork end badly bent in centre section. Check for correct rigging of this control system to avoid failure. (Possibly damaged during de-rigging?).

1.9. Pirat. Loss of rudder deflection. Slack control cables reduce rudder travel by a significant amount. (Essex GC).

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1.10. Pik 20D/24BE. 2 mm drain holes to be drilled in flap hinge covers, at lowest point with flaps neutral. Grease hinge pins. (Tech Bulletin 1979-04-1).

1.11. Pik 20D landing gear. Check for play in rear fork retracting torque tube fitting. Rectify as indicated in Technical Bulletin 1979-04-07 (attached).

1.12. Pik 20 and 20B. Corroded landing gear. (unpainted gear). Check in accordance with Service Bulletin M-22 dated 20/4/79 (attached).

1.13. Pik 20 and 20B. Water ballast tanks too long. Check in accordance with Service Bulletin M-20 (attached).

1.14. Pik 20, 20B and 20D Serial No's 20501 - 20631. Slow draining of water ballast system. Check for restrictions in accordance with Service Bulletin M-21 (attached).

2.0. General Matters.

2.1. Self-igniting Gliders! A case has been reported of upholstery damage, due to concentration of solar energy by the canopy.

2.2. Motor gliders on LAMS (3 year) Maintenance Cycles. BGA Form TMG 50 Tug/Motor Glider 50 hour and TMG 100 hour Annual, Inspection Report Forms, (copies attached) have been produced to assist with 50 hour/100 hour/Annual Inspections. (Please report deficiencies/improvements to CTO). Copies available from the BGA. (These same Reports are, of course, eligible for tugs and similar aircraft).

Rectification Worksheet and Certificate of Compliance. (BGA Form/T/1) attached should be used as part of the documentation required under the ANO.

2.3. New Glider Types Approved by the BGA (Please add to list)

D.77 "Iris"
J.P. 36A

2.4. Skylark 2 and 3. C.G. Hook Installation. Colin Goulding, 15 Whiteacres, Stobhill Grange, Morpeth, Northumbria, has devised MOD/BGA/Skylark/1/79.

3.0. Tugs

3.1. Chipmunk Brake Drive-block failure in wheel. Chipmunk TNS 148 (1964) draws attention to possible failure, resulting in locked wheel(s). Dunlop Mod 4179 apparently fails to fix it! Can result in bent propellers, shock loaded engines, buckled morale etc! Recommend that moderate braking be practiced and inspection every 50 hours. (Northumbria Club - Reported by Jack Little).

3.2. Cracked Cylinders. (How to minimise this problem at £450 per cylinder!). Enclosed extract from Avco Lycoming "Flyer" is very relevant.

3.3. Gypsy Engine Spares. It is believed that Mr. Jack Reed, W & J Reed Garages Limited, Hills Yard, Bacon Lane, Edgeware, Middlesex, (Tel: 01-952-1405), may have bits and pieces, including valve seat insects etc.

3.4. Stolen Engines (Extract from CASI 4/79). Lycoming O-145 B2 Serial No. 4890-2 (gold painted) and Continental O-200A Serial No. 23R 217 have been reported stolen. Please report finding to CAA (Safety Data Unit), on Redhill 65966.

3.5. BGA/CAA Tug Maintenance Approval. Extension of BGA/CAA Approval Ref DAI/8378/73 to include 100 hour/Annual Inspection, at specially approved sites by (T) Rated Inspectors, is expected shortly.

3.6. Condor Tyres. Tyre life on this type is abysmally low! 600 x 6 tyres are cheaper than 700 x 6, and have proved satisfactory.

3.7. General Aviation Training Package (ATTITB). For aspiring tug maintainers, the enclosed "package" may be invaluable whether you ultimately aspire to CAA Licensing or not!

3.8. Auster Tyre Tow Hooks. The attached Note from Ron Neal, (Auster Owner's Club) should be used to periodically check the correct operation of these hooks.

R.B. Stratton
Chief Technical Officer

June, 1979

Encls.

NOTICE BOARD ?

EXTRACT FROM AVCO-LYCOMING "FLYER" (TNS 6/7/79)

Use Of Fuel Boost Pumps With Avco Lycoming Engines

As an engine manufacturer, we are frequently asked about the proper use of the fuel boost pump with our powerplants. Although we can't pretend to be an expert on the fuel boost pump itself, we have some positive recommendations concerning its use with our engines. Where a boost pump is provided by the airframe manufacturer, and the airframe pilot's operating handbook has a limited treatment of the use of the fuel boost pump, perhaps this discussion can provide the necessary fuel boost pump information for the pilot in order to operate his or her engine as safely as possible.

It is necessary to supply the engine with a steady, uninterrupted flow of fuel for all operating conditions. Entrapped air, temperature changes, pressure drops, agitation in the fuel lines and other factors affect the release of air and vapor from the fuel system. Under some circumstances where an engine mounted fuel pump is provided, it may not be able to pump a continuous fuel supply free of excessive vapor.

An effective continuous fuel supply is provided by use of the fuel boost pump. As a general recommendation, the fuel boost pump should be used with Avco Lycoming engines in all conditions where there is any possibility of excessive vapor formation, or when a temporary cessation of fuel flow would introduce undesirable hazards. The conditions under which Avco Lycoming recommend use of the fuel boost pump operation are as follows:

1. Every takeoff.
2. Climb after takeoff — unless Pilot's Operating Handbook says it is not necessary.
3. When switching fuel selectors from one separate fuel tank to another, the fuel boost pump should be "On" in the new tank until the operator is assured there will be no interruption of the fuel flow.
4. Every landing approach.
5. Any time the fuel pressure is fluctuating and the engine is affected by the fluctuation.
6. Hot weather, hot engine ground operation where fuel vapor problems causes erratic engine operation.
7. Some General Aviation Aircraft require the use of the fuel boost pump during high altitude flight. This will be spelled out in the Pilot's Operating Handbook.
8. If the engine mounted fuel pump fails.

If the fuel boost pump is used during ground operation, don't fail to check the condition of the engine mounted fuel pump before takeoff by turning the boost pump off briefly, and then back "on" for takeoff. If the engine mounted pump has failed, it would be safer to know that on the ground rather than in the air when the fuel boost pump was turned "off".

When in doubt, do the safest thing and use the fuel boost pump with Avco Lycoming engines. Don't be "stingy" with the boost pump. In most cases they last the overhaul life of the engine, and are then exchanged or overhauled themselves. AS A REMINDER — The airframe Pilot's Operating Handbook is the authority if boost pump information is spelled out in it.

How To Avoid Broken Piston Rings And Cracked Cylinders

A number of multi-engine pilots have contacted us over their concern for the effect on their powerplants of in-flight instructions by air traffic controllers. These pilots frequently fly in and out of high density airports where they are consistently asked to make fast descents by ATC. Our check of the service records at the factory reveals that there has been a surge in the number of complaints of excessively worn piston ring grooves and accompanied by broken rings, cracked cylinder heads, and warped exhaust valves in both engines of these multi-engine aircraft, particularly those pressurized.

Unless the pilot takes certain precautions, fast descents carrying high cruise RPM and low manifold pressure cause broken piston rings from ring flutter, and also cause cracked cylinders at the spark plug and valve ports, and warped exhaust valves due to sudden cooling.

In order to prevent engine problems of this type, we recommend the pilot maintain at least 15" MP or higher with pressurized aircraft, and set the RPM at the lowest cruise position which should prevent ring flutter. Letdown speed should not exceed high cruise speed or approximately 1000 ft. per minute rate of descent. During close-in letdown, the aircraft can be "dirtied" by dropping the gear and some flaps, or both. This will prevent high airspeed and sudden cooling, and yet provide a good rate of descent. However, any technique that prevents sudden cooling during descent will be helpful.

Those aircraft used to tow gliders and drop parachutists should use similar precautions to prevent sudden cooling.

Tips From The Hangar

These are some of the more common questions asked at our service hangar:

QUESTION — Do your new or remanufactured engines require a "slow" flying or break-in period?

ANSWER — Definitely not. Fly them as you would a high time engine. In fact, so-called "slow" flying may have harmful effects. The rings may not seat properly resulting in higher than normal oil consumption.

QUESTION — At what rate of oil consumption does continued operation of the engine become a hazard?

ANSWER — Generally speaking, when the oil consumption reaches one quart per hour, corrective action should be taken. However, maximum permissible for each particular engine is listed in the engine operator's manual.

QUESTION — What is the chief danger of operating an engine with high oil consumption?

ANSWER — Oil soaked carbon forms at a fast rate. At the same time, the presence of oil in the combustion chamber has the effect of lowering the octane rating of the fuel. Operating temperatures go up. We have now set up conditions inviting detonation and/or pre-ignition.

AIR TRANSPORT AND TRAVEL INDUSTRY TRAINING BOARD

GENERAL AVIATION ENGINEERING TRAINING PACKAGE (ISSUE 2)

The engineering training package has been devised by the ITB to meet the expressed need of the General Aviation Sector of the Industry. It is designed to suit firms which are too small to have training schemes of their own and do not have access to suitable courses at Colleges of Further Education.

AIM

The aim of the package is to meet the standard required for the non type-rated A licence for unpressurised metal airframes and the non type-rated C licence for piston engines. Additional study plans are included to cover pressurisation, turbine and propeller turbine engines

The training package is intended for:-

- young persons entering General Aviation

- engineers with some experience wishing to prepare for the CAA licensed aircraft engineer examination.

Firms are recommended to nominate an experienced engineer to advise and encourage the trainees using the package.

CONTENTS OF PACKAGE

The training package supplied by the ITB consists of:-

Training Material

FAA Airframe & Powerplant Mechanics Handbooks:
AC 65-9A General
AC 65-12A Powerplant
AC 65-15A Airframe

Study Plans

There is a total of 39 study plans each consisting of a study assignment, associated practical activities and a set of self-examination questions.

Logbook

This records the trainees progress with the study plans and the practical activities. It also makes provision for compiling a schedule of work on specific aircraft or equipments.

The training package will be supplied complete or in components, and firms are asked to submit their orders using the tear-off slip provided.

CAA Civil Aircraft Inspection Procedures

Access is required to CAIP Part 1 - Basic and Part II - Aircraft for study purposes. If copies of CAIP are needed, they should be ordered separately direct from:

Civil Aviation Authority, Printing & Publication Services, 37 Gratton Road Cheltenham, Glos GL50 2BN

Details of cost are contained in Airworthiness Notice No. 6.

To: Mr A S Knowles
Air Transport and Travel Industry Training Board
Staines House
158/162 High Street
Staines, Middlesex TW18 4AS

From: _____

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ENGINEERING TRAINING PACKAGE

Revised price list, effective 1 April 79

Please supply:-

Item		
Training Package complete less logbook:		£25.00 ... .
Logbook with stiff cover:		£ 1.00 ... .
Set of 3 FAA handbooks:		£15.50 ... .
FAA handbook	AC 65-9A	£ 5.20 ... .
	AC 65-12A	£ 5.20 ... .
	AC 65-15A	£ 5.20 ... .
Set of study plans with stiff cover:		£12.50 ... .
Air legislation study plan		£ 2.00 ... .
	TOTAL	____

Please find enclosed cheque for £____

Date: _____ Signed: _____