LAA TYPE ACCEPTANCE DATA SHEET TADS 317

AEROPRAKT A22 'FOXBAT' AND A22-L 'FOXBAT'

Issue 3	Max continuous rpm limitation added with Kiev 263/1700 propeller fitted	dated 25.4.07

1. UK Agent

Ray Everitt, Dragon Aviation, Chirk Airfield, Wrexham, tel 07974 952118 (kit previously supplied by The Small Light Aeroplane Co Ltd based at Otherton Airfield)

2. Description

The Aeroprakt A22 Foxbat is a high-wing two seat microlight aircraft of 450 Kg max gross weight, with a tricycle undercarriage, only available in the UK in the form of a quick-built kit which is manufactured in the Ukraine.

The Foxbat is of riveted aluminium construction, the flying surfaces being fabric covered. The aircraft features a cockpit with an unusually large area of glazing, including transparent panels in the rear fuselage surfaces. The wings are strut braced and swept forward. Only engine type approved is the Rotax 912-ULS.

A new variant of the A-22, the A22-L has been introduced into the UK which has reduced wing span and smaller tail surfaces, restricted flap travel and a rudder anti-balance tab.

3. Fast Build Kit 51% Compliance

The technical leaflet TL.11 shows the contents of the accepted fast build kit.

4. Build Manual

A-22 and A22-L Foxbat Build Manual specific to the UK model available from the UK agent.

5. Build Inspections

Build inspection schedule 41 (A22 Foxbat).
Inspector approval codes A-A or A-M, M or K. Inspector signing off final inspection also requires 'first flight' endorsement

6. Maintenance Manual

Refer to Aeroprakt A-22 Operator's manual, specific to UK model, available from UK agent. See also A22-L supplement for A22-L variant. For engine maintenance refer to Rotax maintenance schedule.

7. Flight Manual

Refer to Aeroprakt A-22and A22-L Operator's Manuals , specific to UK model, available from UK agent.

8. Mandatory Permit Directives

None applicable specifically to this aircraft type, but note

MPD: 1998-019-R1 Flexible Fuel Tubing Applies to all permit aircraft

9. LAA Mandatory Modifications

Several modifications were required by the LAA for acceptance of the type in the UK, as follows:

Addition of rudder anti-balance tab (A22-L only)
Restriction of flap travel to first stage only (A22-L only)
Addition of rudder centering bungees to improve directional stability in flight. (A22 only)
Tee piece, restrictor and fuel vapour return line added to fuel system, routing surplus fuel back to starboard wing tank, to comply with Rotax installation recommendations.
Fuel pipes must be protected from chafing wherever they pass through holes in structure, using grommets or polyeurethane adhesive.
Routing of choke cable and any other cables adjacent to base of control column to be secured well clear of all moving parts.
Harness attachment bolts bushed so that harness lugs are free to swivel
Seat structure occupant protection added (2mm thick aluminium seat pans added and foam block fitted inside seat box).
Drain holes added to fuel tank bays of wing.
Drainage holes/ventilation holes added to flying surfaces
Addition of insulating rubber boots to battery terminals.
Addition of 4mm thick plywood cockpit floor panels to protect aluminium floor structure from scuffing damage. Alternatively rubber backed carpet as supplied in kit must be fitted.
Addition of conventional gascolator to fuel system on front face of firewall, near bottom of firewall (gascolator supplied with UK kits).
UK required placards added to cockpit and fuel fillers (placards supplied with UK kits)
ASI markings altered to match UK flight speed limitations (instruments marked as supplied in kit)

Also one bulletin issued by LAA subsequently following severe in-flight buckling damage to wing rear spar on one example. This was considered to have been the result of pre-existing crash damage which had gone unnoticed :

LAA-317-001 Rear Spar Inspection after any heavy landing. Bulletin calls for the fuel tanks to be removed and a close inspection of the check the wing rear spars in the fuel tank bay to check for damage prior to any further flight, and applies following any heavy landing.

10. Service Bulletins

Information Bulletin IB A-22-01	Inspect for fatigue cracks around weld where bracket for nosewheel fork is welded to bottom of noseleg. Replace noseleg at 1000 hrs or 2000 landings, whichever soonest. (Later brackets were reinforced)
Information Bulletin IB A-22-02	Inspect diaphragms in vicinity of wing lift strut attachments to fuselage for fatigue cracking, replace diaphragms if cracked, and whether cracked or not, fit reinforcing doublers to diaphragms.
Information Bulletin IB A-22-03	Substitution of stronger rivets and addition of extra rivets at wing ribs 3 and 4 where ribs are riveted to leading edge .D box skin, for increased strength.
Information Bulletin IB A-22-04	Inspection of Main Landing Gear Beam
Information Bulletin IB A-22-05	Lift strut attachment life at 2000 hours

11. Standard Options

Overhead transparency in cockpit
Installation of electric servo-operated elevator trim system is only UK approved elevator trim option
Wing fold system on A22-L model

12. Special Inspection Points

- On completion of build, inspector to complete 'Aeroprakt A22 Foxbat Final Inspection Checklist'. Copy of checklist to be sent to LAA along with initial Permit to Fly application.
- Rotax 912 series installation checklist to be completed (apart from flight test section) as part of final inspections prior to applying for Permit to Fly.
- The throttle spring on the carburettors must be adjusted so that the system does not have a strong tendency to spring to 'full throttle' when the throttle knob is released, or require a strong pull to keep it in the closed position.
- Ensure that the carburettor vent pipes discharge in the vicinity of the carb intake filters, so that they experience the same static pressure as the engine intake air. Several owners have incorrectly fed these pipes overboard because they don't like the idea of any leaked fuel being discharged within the engine compartment. Feeding these pipes overboard or to any other higher or lower air pressure region may cause the engine to run rough or stop due to the pressure affecting the operation of the carburettor float.
- As described in the service bulletins (Information Bulletins), check carefully for signs of cracking at wing lift strut attachments to fuselage, wing lift strut attachments to wings and bottom end of noseleg.
- On some early examples, wing fabric does not continue around wing leading edge D box in conventional fashion, but only extends over open frame areas of wing (like on a Chipmunk) relying on a bonded joint between fabric and aluminium wing skin along the critical 'into wind' front edges of the fabric

panels, in line with the wing mainspar. Inadequate surface preparation of structure prior to covering or use of contaminated or incorrect type of fabric could cause fabric to peel from aluminimum surface. Following a change in the type of rivet heads used in the wing riveting, builders are now required to fabric cover around the leading edge in conventional manner rather than using the original bonded scheme.

- On older examples using the bonded fabric method (ie no fabric around the leading edge D-box of the wing), inspectors should check carefully that there is no sign of bond failure between the fabric and the metal structure. In particular, check that there are no signs of the fabric having partially detached and re-bonded by the owner, and also check that the edges of the fabric cannot be prized off the aluminium surface by thumbnail pressure. Any signs of problems developing in this area are cause for recovering the aeroplane, using the conventional wrap-around technique.
- Due to the impossibility of removing the finger strainers in the wing tanks for cleaning, in the event of suspected partial finger strainer blockage (eg if tanks become polluted with foreign matter, or fuel flow problems occur) then either the tank should be removed from the wing or the wing removed from the aeroplane to allow the tank and its finger strainer to be thoroughly back-flushed through.

13. Operating Limitations and Placards (A22 version)

Maximum number of occupants authorised to be carried: Two

The aircraft must be operated in compliance with the following operating limitations, which shall be displayed in the cockpit by means of placards or instrument markings:

Aerobatic Limitations

The aeroplane is permitted to fly only for non-aerobatic operation. In this context, non-aerobatic operation includes:

i) any manoeuvre necessary for normal flying.
ii) intentional stalls from level flight.
iii) steep turns in which the angle of bank does not exceed 60 degrees.

Intentional spinning is prohibited.

Loading Limitations

Maximum Total weight Authorised: 450 Kg
CG Range: 1550mm to 1690mm aft of datum.
Datum Point is: Front face of the propeller mounting flange

Engine Limitations

Maximum Engine RPM: 5800
Maximum continuous engine RPM: 5500
With Kiev 263/1700 propeller fitted, maximum continuous RPM: 5300

Airspeed Limitations

Maximum Indicated Airspeed: 120 mph
Maximum Indicated Airspeed, flaps extended: 68 mph

Other Limitations

The aircraft shall be flown by day and under Visual Flight Rules only.
Smoking in the aircraft is prohibited.

Additional Placard

"Occupant Warning - This Aircraft has not been Certificated to an International Requirement"

As a microlight the aircraft must be fitted with mandatory microlight weight placard per TL2.11.

Fireproof identification plate must be fitted to fuselage, engraved or stamped with aircraft's registration letters.

Operating Limitations and Placards (A22-L version)

Maximum number of occupants authorised to be carried: Two
The aircraft must be operated in compliance with the following operating limitations, which shall be displayed in the cockpit by means of placards or instrument markings:
Aerobatic Limitations
The aeroplane is permitted to fly only for non-aerobatic operation. In this context non-aerobatic operation includes:

i) Any manoeuvre necessary for normal flying
ii) Intentional stalls from level flight
iii) Steep turns in which the angle of bank doesn't exceed 60 degrees

Intentional spinning is prohibited

Loading Limitations
Maximum Total weight Authorised: 450 Kg
CG Range: 1550mm to 1690mm aft of datum.
Datum Point is: front face of the propeller mounting flange.
Engine Limitations
Maximum Engine RPM: 5800
Maximum Continuous Engine RPM: 5500
Airspeed Limitations
Maximum Indicated Airspeed: 120 mph
Maximum indicated airspeed, flaps extended: 74 mph
Design Cruise Speed (Vc) 100 mph. This airspeed must not be exceeded in gusty or turbulent conditions.
Design Manoeuvring speed (Va): 85 mph. Full or harsh control movements must not be made at airspeeds above Va.
Other Limitations
The aircraft shall be flown by day and under Visual Flight Rules only.
Smoking in the aircraft is prohibited.

Additional Placard
"Occupant Warning - This Aircraft has not been Certificated to an International Requirement"

As a microlight the aircraft must be fitted with mandatory microlight weight placard per TL2.11.

Fireproof identification plate must be fitted to fuselage, engraved or stamped with aircraft's registration letters.

14. Additional Engine Limitations/Placards

With Rotax 912-ULS engine:Maximum CHT: 135C
Max Coolant Temp: 115C (with 100% Evans coolant)

Oil Temp Limits: 50C to 130C (Normal 90-110C)
Oil Pressure 2-5 Bar
Minimum Fuel Pressure: 0.15 bar

15. Maximum Permitted Empty Weight

Model	Engine	Max empty weight
A22 Foxbat	Rotax 912-ULS	265 Kg
A22-L Foxbat	Rotax 912-ULS	265 Kg

16. Special Test Flying Issues

- Rotax 912 Flight test schedule to be completed.
- It is recommended to take off with both fuel tanks selected which will protect against blockage problems in either tank fuel feed.
- Return fuel feeds to starboard tank, so if both tanks are full, do not feed from port tank only or return fuel flow will over-fill starboard tank, vent overboard and be wasted.

17. Control surface deflections (A22 model – A22-L to follow)

Ailerons	Up:	20 degrees
	Down:	13 degrees
Elevators	Up:	22 degrees
	Down:	12 degrees
Rudder	Left	21 degrees
	Right	21 degrees
Flap	Down	0, 10 and 20 degrees
Elevator tab	Up	20 degrees (ie nose down trim)
	Down	30 degrees (ie nose up trim)

18. Noise Certification

As a microlight aircraft, a noise certificate must be issued by the CAA specific to each individual aircraft built. A new noise certificate must be obtained following any change in noise output, including change to engine type, reduction gear ratio, propeller type, propeller pitch setting, type of exhaust, exhaust after-muffler or intake silencer.

19. Significant Airworthiness Approval Notes

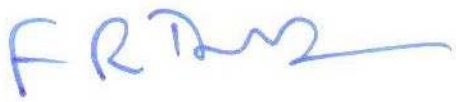
LAA-317-432 Issue 2	A22 model, Rotax 912-ULS engine, GT and Newton propellers
LAA-317-432 Supplement 1	A22-L model

20. Additional Weight and Balance information:

Levelling datum: Door scuttle
Moment arm of crew: 1600mm aft of datum
Moment arm of fuel: 1900mm aft of datum
Moment arm of Baggage: 2200mm aft of datum

Nosewheel centre arm: 480mm aft of datum (measure for individual example)
Mainwheel centre arm: 1800mm aft of datum (measure for individual example)

Approved :



F.R.Donaldson
Chief Engineer

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