LAA TYPE ACCEPTANCE DATA SHEET
TADS 317/317A
AEROPRAKT A22 FOXBAT AND A22-L FOXBAT

Issue 6			
Revision A	New format, additional manufacturers service bulletins. Control deflections for A22-L. Note on tyres.	Dated 07/11/11	JV

These TADS are intended as a summary of available information about the type and should be used during the build, operation and permit revalidation phases to help owners and inspectors. Although it is hoped that this document is as complete as possible, other sources may contain more up to date information, e.g. the manufacturer's website.

Section 1 contains general information about the type.
Section 2 contains information about the type that the LAA considers mandatory and must be complied with.
Section 3 contains advisory information that owners should be aware of to help them maintain their aircraft in an airworthy condition.

Section 1 - Introduction

1.1 UK contact

Ray Everitt, Dragon Aviation, Chirk Airfield, Wrexham.

Tel: 07974 952118
Email: [not available]
Website: www.foxbat.co.uk
www.aeroprakt.kiev.ua

Note that kits were previously supplied by The Small Light Aeroplane Co, based at Otherton airfield.

1.2 Description

The Aeroprakt A22 Foxbat is a high-wing, strut-braced, two-seat microlight aircraft of 450 kg maximum gross weight, with a tricycle undercarriage. It is 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. The 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. This is accepted either as a microlight or an SEP aeroplane with a 475 kg max gross weight. The SEP version has an improved firewall.

Note that the only propeller(s) approved for an individual aircraft are those listed on the individual aircraft's Operating Limitations document or in the PTL/1 (Propeller Type List) for the type.

Section 2 – Mandatory information for owners, operators and inspectors

2.1 Fast Build Kit 51% Compliance

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

2.2 Build Manual

A-22 and A22-L Foxbat Build Manuals specific to the UK models are available from the UK agent.

2.3 Build Inspections

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

2.4 Flight Manual

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

2.5 Mandatory Permit Directives

None applicable specifically to this aircraft type:

Also check the LAA website for MPDs that are non-type specific (TL2.22).

2.6 LAA Required Modifications (including LAA issued AILs, SBs, etc)

	Description	*Applicability*
1	Stainless steel firewall.	SEP version of A22-L only
2	Addition of rudder anti-balance tab.	A22-L only
3	Restriction of flap travel to first stage only.	A22-L only
4	Addition of rudder centering bungees to improve directional stability in flight.	A22 only
5	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.	All variants
6	Fuel pipes must be protected from chafing wherever they pass through holes in structure, using grommets or polyeurethane adhesive.	All variants
7	Routing of choke cable and any other cables adjacent to base of control column to be secured well clear of all moving parts.	All variants
8	Harness attachment bolts bushed so that harness lugs are free to swivel.	A22 only
9	Seat structure occupant protection added (2mm thick aluminium seat pans added and foam block fitted inside seat box).	A22 only

10	Drain holes added to fuel tank bays of wing (now as supplied).	All variants
11	Drainage holes/ventilation holes added to flying surfaces.	All variants
12	Addition of insulating rubber boots to battery terminals.	All variants
13	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.	All variants
14	Addition of conventional gascolator to fuel system on front face of firewall, near bottom of firewall (gascolator supplied with UK kits).	A22 only
15	UK required placards added to cockpit and fuel fillers (placards supplied with UK kits)	All variants
16	ASI markings altered to match UK flight speed limitations (instruments marked as supplied in kit).	All variants
17	Rudder hinge washer changed for 25 mm diameter washer.	All variants

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.

2.7 Additional engine operating limitations to be placarded
(or shown by instrument markings)

Refer to the engine manufacturer's latest documentation for the definitive parameter values.)

With Rotax 912-ULS engine:

Maximum CHT: 135°C
Max Coolant Temp: 120°C (with 50/50 Glycol/water coolant)
Oil Temp Limits: 50°C to 130°C (Normal 90-110°C)
Oil Pressure: 2-5 bar
Minimum Fuel Pressure: 0.15 bar

2.8 Control surface deflections

	A22	A22-L
Ailerons	Up: 20° ±1°	20° ±1°
	Down: 13° ±1°	13° ±1°
Elevators	Up: 22° ±1°	25° ±1°
	Down: 12° ±1°	20° ±1°
Elevator tab	Up: 20° ±1°	21° ±1°
	Down: 30° ±1°	22° ±1°
Rudder	Left 21° ±1°	22° ±1°
	Right 21° ±1°	28° ±1°
Flap	Down 0° - 10° ±1° - 20° ±1°	Down 0° - 10° ±1°

2.9 Operating Limitations and Placards

(Note that the wording on an individual aircraft's Operating Limitations document takes precedence, if different.)

A22 variant

1. Maximum number of occupants authorised to be carried: Two

2. 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:

   2.1 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.

   2.2 Loading Limitations
   Maximum Total Weight Authorised: 450 kg
   CG Range: 1550 mm to 1690 mm aft of datum
   Datum Point is: front face of the propeller mounting flange

   2.3 Engine Limitations
   Maximum Engine RPM: 5800
   Maximum continuous engine RPM: 5500

   2.4 Airspeed Limitations
   Maximum Indicated Airspeed (V_{NE}): 120 mph IAS
   Max Indicated Airspeed Flaps Extended: 68 mph IAS

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

Additional Placards:

"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.

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

A22-L microlight variant

1. Maximum number of occupants authorised to be carried: Two

2. 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:

2.1 Aerobatic Limitations
The aeroplane is permitted to fly only for non-aerobatic operation. In this context, non-aerobatic operation includes:
iv) any manoeuvre necessary for normal flying
v) intentional stalls from level flight
vi) steep turns in which the angle of bank does not exceed 60 degrees.
Intentional spinning is prohibited.

2.2 Loading Limitations
Maximum Total Weight Authorised: 450 kg
CG Range: 1550 mm to 1690 mm aft of datum
Datum Point is: front face of the propeller mounting flange

2.4 Engine Limitations
Maximum Engine RPM: 5800
Maximum continuous engine RPM: 5500

2.4 Airspeed Limitations
Maximum Indicated Airspeed (V_{NE}): 120 mph IAS
Max Indicated Airspeed Flaps Extended: 74 mph IAS
Design Cruise Speed (Vc) 100 mph IAS. This airspeed must not be exceeded in gusty or turbulent conditions.
Design Manoeuvring speed (Va): 85 mph IAS. Full or harsh control movements must not be made at airspeeds above Va.

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

Additional Placards:

“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.

A fireproof identification plate must be fitted to fuselage, engraved or stamped with aircraft’s registration letters.

<u>A22-L SEP variant</u>

1. Maximum number of occupants authorised to be carried: Two

2. 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:

2.1 Aerobatic Limitations
Aerobatic manoeuvres are prohibited.

Intentional spinning is prohibited.

2.2 Loading Limitations
Maximum Total Weight Authorised: 475 kg
CG Range: 1550 mm to 1690 mm aft of datum
Datum Point is: front face of the propeller mounting flange

2.5 Engine Limitations
Maximum Engine RPM: 5800
Maximum continuous engine RPM: 5500

2.4 Airspeed Limitations
Maximum Indicated Airspeed (V_{NE}): 120 mph IAS
Max Indicated Airspeed Flaps Extended: 74 mph IAS
Design Cruise Speed (Vc) 100 mph IAS. This airspeed must not be exceeded in gusty or turbulent conditions.
Design Manoeuvring speed (Va): 85 mph IAS. Full or harsh control movements must not be made at airspeeds above Va.

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

Additional Placards:

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

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

2.10 Maximum permitted empty weight

Model	*Engine*	*Maximum empty weight*
A22 Foxbat	Rotax 912-ULS	265 kg
A22-L Foxbat	Rotax 912-ULS	265 kg
A22-L Foxbat (SEP)	Rotax 912-ULS	290 kg

2.11 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.

SEP variants do not need a noise certificate.

Section 3 – Advice to owners, operators and inspectors

3.1 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.

3.2 Standard Options

- Overhead transparency in cockpit.
- Installation of electric servo-operated elevator trim system is the only UK approved elevator trim option.
- Wing fold system on A22-L model.
- 6.00x6 tyre is optional on A22 model (A22 normally fitted with 5.00x6 tyre; A22-L must be fitted with 6.00x6 tyre).

3.3 Manufacturer's Information (including Service Bulletins, Service Letters, etc)

In the absence of any over-riding LAA classification, inspections and modifications published by the manufacturer should be satisfied according to the recommendation of the manufacturer. It is the owner's responsibility to be aware of and supply such information to their Inspector.

Ref	*Description*	*Applicability*
IB A-22-01	Inspection of nose landing gear leg stem.	All variants, s/n 5 to 50
IB A-22-02	Inspection and reinforcement of fuselage.	All variants, s/n 1 to 70
IB A-22-03	Inspection and reinforcement of the rivet joints of ribs 3 & 4.	A22 only, s/n 60 to 103, & 106
IB A-22-04	Inspection of main landing gear beam.	All variants, s/n 1 to 130
IB A-22-05	Lift strut attachment life at 2,000 hours.	All variants
IB A-22-06	Replacement of the nose landing gear leg spring – revised by IB A-22-11.	All variants
IB A-22-07	Replacement of door air scoops.	All variants, s/n 1 to 263
IB A-22-10	Inspection and reinforcement of stabilizer skin.	A22-L, s/n 95 to 282
IB A-22-11	Replacement of the nose landing gear leg spring.	All variants
IB A-22-12	Inspection and replacement of main landing gear pads, brackets and springs.	All variants

3.4 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.
- Carefully visually check the quality of welding of welded parts, in particular the engine mount.
- Before finally installing the noseleg, check noseleg is free to turn in noseleg bushing, otherwise this can cause undesirable friction in rudder circuit.
- Routing and tie-wrapping of Bowden cables and wiring adjacent to the base of the control column must avoid any possibility of a conflict with moving parts, causing a control restriction.
- Latest position of coolant filter neck as supplied fitted to Rotax engine conflicts with Foxbat components in this area; position must be relocated slightly to suit by alteration of pipe lengths.
- Fuel pipes should be protected from chafing where passing through holes in the structure.
- As with most microlight aircraft, empty weight is critical, therefore weight growth through modifications and optional extras must be avoided at all costs.
- 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 aluminium 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 (e.g. 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.

3.5 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.

3.6 Additional weight and balance information

Levelling datum:	Door scuttle
Moment arm of crew:	1600 mm aft of datum
Moment arm of fuel:	1900 mm aft of datum
Moment arm of baggage:	2200 mm aft of datum
Nosewheel centre arm:	480 mm aft of datum (measure for individual example)
Mainwheel centre arm:	1800 mm aft of datum (measure for individual example)

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Please report any errors or omissions to LAA Engineering: engineering@laa.uk.com