

CIVIL AVIATION AUTHORITY – SAFETY REGULATION GROUP

MICROLIGHT TYPE APPROVAL DATA SHEET (TADS)

NO: BM 45 ISSUE: 4

TYPE: Cyclone AX3/503

(1) MANUFACTURER: Cyclone Airsports Ltd, now supported by P & M Aviation Ltd., Unit B, Crawford St, Rochdale, Lancashire OL16 5NU.

(2) UK IMPORTER: N/A

(3) CERTIFICATION: BCAR Section S

(4) DEFINITION OF BASIC STANDARD: Drawing No AX3-001 Issue 1

(5) COMPLIANCE WITH THE MICROLIGHT DEFINITION

(a) MTOW	390 kg
(b) No. Seats	2
(c) Maximum Wing Loading	23.58 kg/m ²
(d) V _{so}	31mph CAS
(e) Permitted range of pilot weights	55 – 97.5 kg per seat.
(f) Typical Empty Weight (ZFW)	205kg
(g) ZFW + 172 kg crew + 1 hr fuel (17 litres / 12kg)	389kg
(h) ZFW + 86 kg pilot + full fuel (28 litres /20 kg)	311kg
(i) Max ZFW at initial permit issue	206kg

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(I) Power Plant See Table

Engine	Rotax 503-2V			
Max RPM	6800			
MAX CHT	250°C 480°F			
MAX EGT	650°C 1200°F			
Fuel Spec	83 MON or 90 RON minimum unleaded to BS(EN)228 or 97+ octane 4-star /MOGAS leaded fuel to BS 4040, or AVGAS 100LL.			
Engine Oil Spec	Super 2 Stroke Oil to TSCT (min)			
Gearbox oil spec	EP 90 or EP 80/140 or EP 140			
Fuel/Oil Mix	50:1			
Coolant Temperature	N/A			
Oil Pressure	N/A			
Oil Temperature	N/A			
Fuel Pressure	0.2-0.4 bar			

(8) INSTRUMENTS REQUIRED:

ASI	Altimeter	RPM	CHT / EGT	Compass	Coolant temp	Fuel Pressure	VSI	Slip ball
Required (0 to 100 mph)	REQUIRED	REQUIRED	OPTIONAL	OPTIONAL	OPTIONAL	OPTIONAL	OPTIONAL	RECOMMENDED

(9) CONTROL DEFLECTIONS: (3-AXIS SYSTEMS):

Elevator UP:	±18	Tailplane trim UP:	±20
Elevator DOWN:	±23	Tailplane trim DOWN:	±40
Ailerons* UP:	±24	Rudder LEFT:	±35
Ailerons* Down:	±24	Rudder RIGHT:	±35
Trim tab up	20	Trim tab down	40

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(10) PILOT'S NOTES, MAINTENANCE MANUALS REFERENCES:

10.1 Manuals approved for use with this aircraft.

(a) CYCLONE AX3/503 Owner Manual Issue 1

10.2 The following placards are to be fitted:-

(a) Flight Limitations Placard (to be visible to pilot)

See Annex D.

(b) Engine Limitations Placard (to be located near to engine instruments)

See Annex D.

(c) Fuel Limitations Placard (to be located near to filler cap)

A placard is to be fitted showing fuel capacity (27 litres), fuel type(s), fuel:oil ratio (if relevant) and the fuel loads at MTOW for cockpit weights of 180kg / 170kg / 160kg etc. at 10kg intervals down to the maximum fuel load. An example is shown at Annex D.

(d) Switches

See Annex D.

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- (11) MANDATORY MODIFICATIONS / SERVICE BULLETINS / AIRWORTHINESS DIRECTIVES ETC:

Service Bulletin	Description	Notes	Issued
AX1	Fuel tank drain		25/1/93
AX3	Fuel pump drain		30/1/93
AX4	Magneto switches		20/4/93
AX5	Saddle spacers	Defective material	20/4/93
AX6	Throttle cable icing		1/12/93
AX7 issue 3	Main beam fatigue – redesigned cable braced beam introduced	MANDATORY	6/6/96
AX2010	Aileron control return pulley	MANDATORY	21/9/97
AX2016	Rudder bolt lifing	MANDATORY	18/8/98
AX2018	Wing tip inspection		27/1/99
AX2021	Throttle torque tube		18/11/99

NONE See Annex A for required modifications.

Annual Bettsometer test is to be carried out to 1060 grammes with wing sails fitted and tensioned to flight. Test must be to both upper and lower surfaces.

- (12) MINIMUM PERFORMANCE AT MAX TAKE-OFF WEIGHT

Rate of Climb: 400 fpm at 44MPH IAS.

Stall or Minimum Flying Speed: 31MPH IAS at MTOW / idle.

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Issue History

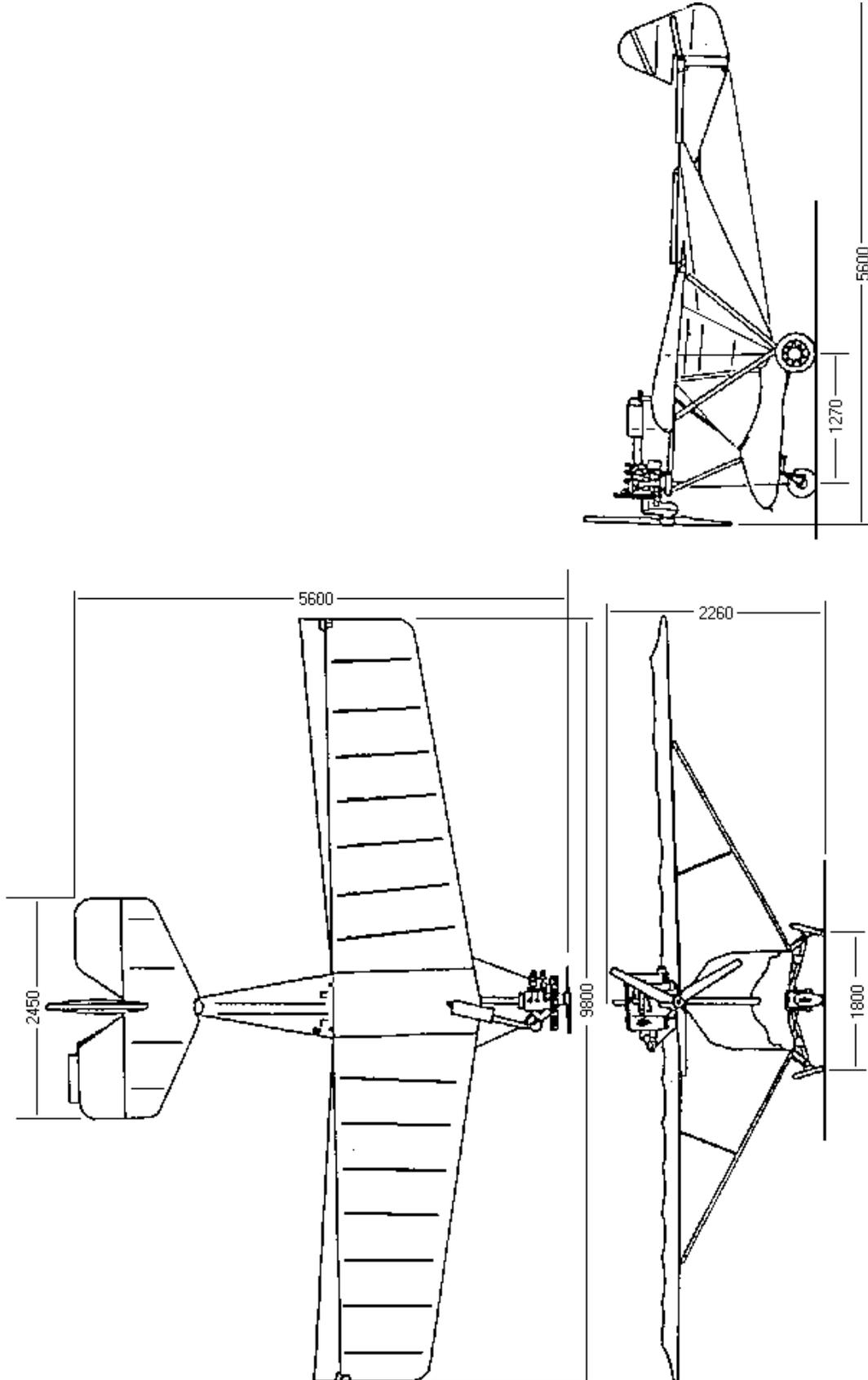
<u>Issue No.</u>	<u>Reason and signatory</u>
1	09/09/92 Initial issue A M CARTER
2	26/10/95 Amendment of text K D RUSSELL
3	31/03/03 New format J BARRATT
4	06/07/05 New company name

J Barratt

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ANNEX A – MANDATORY MODIFICATIONS

Mod ref.	Description	Notes	Issued
AX74	Redesign main beam with cable bracing	All A/C should now be modified	6/6/96
PG/AX279	NON PVC FUEL HOSES		3.3.99

ANNEX B - APPROVED OPTIONAL MODIFICATIONS

The installation of all optional modifications is to be inspected by a BMAA inspector and an entry made in the appropriate logbook(s). Note that other approved modifications may exist which are not listed here.

AX8	EXTRA WING BATTEN - 5 AIRCRAFT	2.10.92	MINOR
AX11	FUEL DRAIN OUTLET	25.1.93	MINOR
AX12	FUEL PUMP DRAIN	1.2.93	MINOR
AX13	TRIM CABLE ADJUSTER	24.2.93	MINOR
AX24	SINGLE PIECE DASHBOARD	19.10.94	MINOR
AX27	NOSE WHEEL BEARINGS	17.11.94	MINOR
AX32	AILERON BRACKET MATERIAL CHANGE	2.3.95	MINOR
AX62	THROTTLE LEVER CHANGE	19.12.95	MINOR
AX74	REDESIGN OF MAIN BEAM	6.6.96	MAJOR MAND.
AX75	SEAT/FUEL TANK CHANGE	6.7.96	MINOR
AX108	2 5/8" KEEL TUBE CHANGE	21.2.97	MINOR
AX113	AILERON TRIM TAB	7.4.97	MINOR

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AX114	ENGINE STUDS ⇒ LOCTITED M10 BOLTS	7.4.97	MINOR
AX/PG126	ALL 12V AIRCRAFT BSM INDICATOR	28.5.97	MINOR
AX135	AX3/AX2000 1 PIECE FILLER TUBE	18.8.97	MINOR
AX200	AX2000/AX3 RUDDER BOLT	18.8.98	MINOR
PG/AX209	BRAKE RETURN SPRING	3.9.98	MINOR
AX237	STITCHING TAPE PROTECTION – issue 2, use no more than 1m tape lengths	21/3/03	MINOR
AX243	TURNBUCKLES IN AILERON CABLES	11.12.98	MINOR
AX245	ELEVATOR COVER DRAIN HOLES	11.12.98	MINOR
PG/AX252	LYNX KIT FITTING	22.12.98	MINOR
AX311	RUDDER HORN BENDING	7.10.99	MINOR
AX315	AX3 THROTTLE TORQUE TUBE	8.10.99	MINOR
AX322	LOWER WING STRUT TANG BOLT AX2000/AX3	10.12.99	MINOR

ANNEX C

WEIGHING INFORMATION

1. CG Datum: Leading edge wing root bolt
2. Weighing attitude: Ground attitude (keel level)
3. Mainwheel moment arm: 1035mm aft of datum
4. Nosewheel moment arm: 265mm fwd of datum
5. Fuel moment arm: 1385mm aft of datum
6. Crew moment arm: 974mm aft of datum
7. Crew weights: Minimum 55 kg / maximum 97.5 kg
8. Aft CG Limit: 966 mm aft of datum
9. Fwd CG Limit: 845 mm aft of datum

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ANNEX D

EXAMPLE PLACARDS

(a) Flight Limitations Placard (to be visible to pilot)

<u>[Type] [Engine] [Registration]</u>	
Never Exceed Speed:	90 mph
Manoeuvring Speed :	60 mph
Stall Speed:	31 mph
Best climb speed:	45 mph
Best glide speed:	45 mph
Non Aerobatic, Max bank	60°
Pitch limits	45° Nose up / 45° nose down
Normal Acceleration Limits:	+4 / -2g
Empty Weight:	_____ kg *
Max Take-Off Weight:	390 kg
Minimum Cockpit Weight:	55kg
Maximum Cockpit Weight:	97.5 kg in each seat.*
Aerobatics and deliberate spinning prohibited.	

* This must match the most recent W&CG report for the aircraft.

(b) Engine Limitations Placard (to be located near to engine instruments)

A placard showing the limitations for all indicated engine parameters is to be mounted close to the engine instruments. This requirement need not be complied with for limitations shown as coloured markers (red for danger, amber for caution) on the instrument displays.

(c) Fuel Limitations Placard (to be located near to filler cap)

<u>FUEL</u>	
Capacity 27.5 Litres (50:1 2 Stroke oil)	
<u>Cockpit Weight (kg)</u>	<u>Max. Fuel Load (litres)</u>
180	5.5
170	21
Below 165	Full fuel
83 MON or 90 RON minimum unleaded to BS(EN)228 or 97+ octane 4-star / MOGAS leaded fuel to BS 4040, or AVGAS 100LL	

(d) Switches

All switches are to be marked with function and sense (up=on, down=off).