

CIVIL AVIATION AUTHORITY – SAFETY REGULATION GROUP

MICROLIGHT TYPE APPROVAL DATA SHEET (TADS)

NO: BM 21 ISSUE: 3

TYPE: MW5B Sorcerer

- (1) MANUFACTURER: Aerotech International Limited
(ceased trading)

BMAA, Bullring, Deddington, Banbury, Oxon OX15 0TT
has responsibility for continued airworthiness
- (2) UK IMPORTER: N/A
- (3) CERTIFICATION: BCAR Section S, Advance Issue – March 1983
- (4) DEFINITION OF BASIC STANDARD: AI Master General Assembly (G1000 / Issue 1)
- (5) COMPLIANCE WITH THE MICROLIGHT DEFINITION:
- | | |
|---|------------------------|
| (a) MTOW | 275 kg |
| (b) No. Seats | 1 |
| (c) Maximum Wing Loading | 19.5 kg/m ² |
| (d) V _{so} | 32 kn IAS |
| (e) Permitted range of pilot weights | 55 – 100 kg |
| (f) Typical Empty Weight (ZFW) | 140 kg |
| (g) ZFW + 86 kg crew + 1 hr fuel
(9 litres / 6.5 kg) | 232.5 kg |
| (h) ZFW + 86 kg pilot + full fuel
(31.25 litres / 22.5 kg) | 248.7 kg |
| (i) Max ZFW | 166 kg |

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(6) POWER PLANTS

Designation	MW5B Sorcerer
Engine Type	Fuji Robin EC44PM, Upright
Reduction Gear	Aerotech toothed belt, 2.86:1
Exhaust System	Aerotech E3-1300-L01
Intake System	Conical Sponge silencer
Propeller Type	Aerotech
Propeller Dia. x Pitch	62" x 36" Laminated wood
Noise Type Cert No.	37M issue 1
AAN approving configuration	19505

(7) MANDATORY LIMITATIONS:

(A) Max Take-Off Weight	275 kg			
(B) CG Limits	<i>Aft limit:</i> 493mm aft of datum <i>FWD Limit:</i> 431mm aft of datum			
(C) CG datum	Wing leading edge			
	Note: For fuller W&CG information see Annex C			
(D) Cockpit Loadings	Front	Rear	Total	
	Min	55 kg	-	55 kg
	Max	100 kg	-	100 kg
(E) Never Exceed Speed	82 kn IAS			
(F) Manoeuvring Speed	57 kn IAS			
(G) Permitted Manoeuvres	Maximum bank angle 60° Normal acceleration limits, +4 / -2g Aerobatics and Spinning prohibited			

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(H) Fuel Contents (Max Useable)	30 litres
(Max Capacity)	31.25 litres

(I) Power Plant See Table

Engine	Fuji Robin EC44 PM
Max RPM	7000
Max CHT	200°C (390°F)
Max EGT	800°C (1470°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	Non-Detergent 2-stroke self mix
Gearbox Oil Spec	As recommended by manufacturer
Fuel/Oil Mix	40:1
Coolant Temperature	N/A
Oil Pressure	N/A
Oil Temperature	N/A

(8) INSTRUMENTS REQUIRED:

ASI	Altimeter	RPM	CHT	EGT	Fuel Pressure	Compass	VSI	Slip ball
Required (to 90 kn min.)	Required	Required	Optional	Required	Optional	Required	Required	Optional

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(9) CONTROL DEFLECTIONS:

Elevator UP:	$20^{\circ} \pm 2^{\circ}$	Rudder LEFT:	$20^{\circ} \pm 2^{\circ}$
Elevator DOWN:	$10^{\circ} \pm 2^{\circ}$	Rudder RIGHT:	$20^{\circ} \pm 2^{\circ}$
Ailerons* UP:	$18^{\circ} \pm 2^{\circ}$		
Ailerons* DOWN:	$18^{\circ} \pm 2^{\circ}$		

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

10.1 Manuals approved for use with this aircraft: -

(a) Flight Manual FLTM/008/MJM	23.9.86
(b) Maintenance Manual MANU/0007/MJM	Issue 1
(c) Parts Manual PART/0006/MJM	17.9.86

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)
See Annex D.
- (d) Switches
See Annex D.

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

See Annex A for required modifications.

MPD 1995-009	Drawshaft Screw Replacement
MPD 1998-019	Flexible Fuel Hose - (it should be confirmed that the hose underneath the sheathing complies with this MPD).

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

Rate of Climb: 540 fpm at 45 kn IAS.

Stall or Minimum Flying Speed: 32 kn IAS

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Issue History

<u>Issue No.</u>	<u>Reason and signatory</u>
1. 30/01/1987	Initial Issue W A Bevan
2. 03/11/1999	Increase in MTOW from 260 kg to 270 kg C J Whittaker
3. 18/08/05	Revised TADS format and general update.

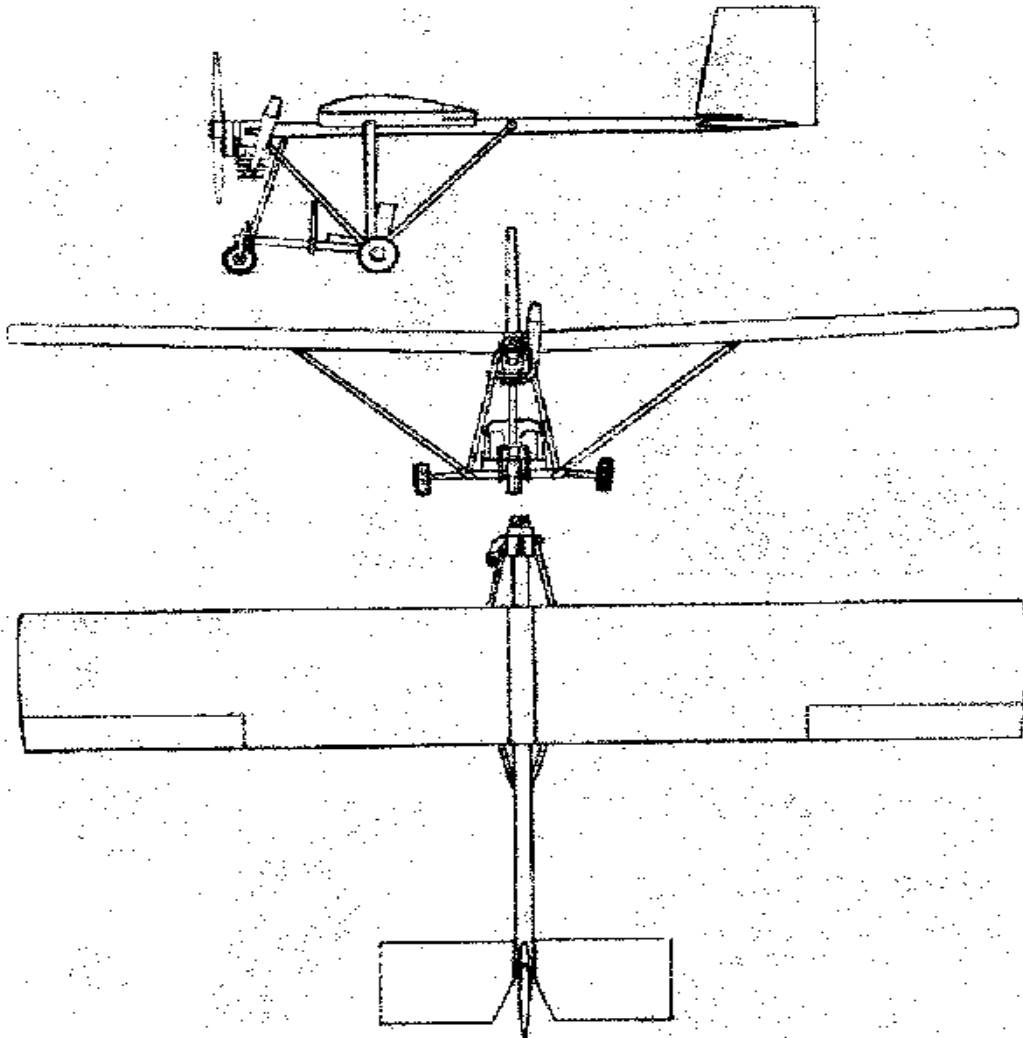
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Illustration of Aircraft



(Pod omitted from drawing for clarity.)

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ANNEX A – MANDATORY MODIFICATIONS

Aerotech International SB 001 Replacement of Drawshaft screw with Bolt

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.

NONE

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ANNEX C

WEIGHING INFORMATION

- | | |
|--------------------------|---|
| 1. CG Datum: | Wing leading edge |
| 2. Weighing attitude: | All three wheels on a level surface (fuse tube/pylon level) |
| 3. Mainwheel moment arm: | 660 mm aft of datum |
| 4. Nosewheel moment arm: | 600 mm forward of datum |
| 5. Fuel moment arm: | 730 mm aft of datum |
| Max. Capacity: | 31.25 litres (22.7kg) |
| Max. Useable: | 30 litres (21.8kg) |
| 6. Crew moment arm: | 400 mm aft of datum |
| 7. Crew weights: | Minimum 55kg / maximum 100kg
(maximum reducible, not below 86kg, if required). |
| 8. Aft CG Limit: | 493 mm aft of datum |
| 9. Fwd CG Limit: | 431 mm aft of datum |

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ANNEX D

EXAMPLE PLACARDS

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

‘EMPTY WEIGHT = 140kg’*

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

‘MIN COCKPIT WEIGHT = 55kg

MAX COCKPIT WEIGHT = 100kg (in each seat)’

‘MAX AUW = 275kg’

(V_{NE}) ‘NEVER EXCEED SPEED = 82 Kn IAS’

(V_A) ‘MANOEUVRING SPEED = 57 Kn IAS’

(V_S) ‘STALL SPEED = 32 Kn IAS’

‘SPINNING PROHIBITED’

‘MANUFACTURER’S IDENTITY PLATE (STEEL)’

‘DO NOT GET OUT WHEN ENGINE IS RUNNING’

(c) 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.

ASI and engine dials are to be colour marked in accordance with normal aviation practice.

Examples are given below:

‘MAX CHT = 200°C (390°F)’

‘MAX EGT = 800°C (1470°F)’

‘MAX RPM = 7000’

‘THROTTLE - INCREASE
DECREASE’

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‘IGNITION - ON
- OFF’

‘CHOKE ON’
‘CHOKE OFF’

‘EMERGENCY FUEL CUT OFF – UP FOR OFF’

‘USABLE FUEL CAPACITY 30 LTRS’

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

FUEL TANK

MAX CAPACITY 31.25 LTRS

OIL Non-detergent 2 STROKE MIX 40:1

FUEL GRADE PREMIUM

(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).