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/m²
(d) Vso 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 232.5 kg
(9 litres / 6.5 kg)
(h) ZFW + 86 kg pilot + full fuel 248.7 kg
(31.25 litres / 22.5 kg)
(i) Max ZFW 166 kg
(6) POWER PLANTS

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

(7) MANDATORY LIMITATIONS:

(A) Max Take-Off Weight 275 kg

(B) CG Limits
   Aft limit: 493mm aft of datum
   FWD Limit: 431mm aft of datum

(C) CG datum Wing leading edge
   Note: For fuller W&CG information see Annex C

(D) Cockpit Loadings
<table>
<thead>
<tr>
<th>Front</th>
<th>Rear</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Min</td>
<td>55 kg</td>
<td>-</td>
</tr>
<tr>
<td>Max</td>
<td>100 kg</td>
<td>-</td>
</tr>
</tbody>
</table>

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

(I) Power Plant

<table>
<thead>
<tr>
<th>Engine</th>
<th>See Table</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Fuji Robin EC44 PM</td>
</tr>
</tbody>
</table>

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:

<table>
<thead>
<tr>
<th>ASI Required</th>
<th>Altimeter Required</th>
<th>RPM Required</th>
<th>CHT Optional</th>
<th>EGT Required</th>
<th>Fuel Pressure Optional</th>
<th>Compass Required</th>
<th>VSI Required</th>
<th>Slip ball Optional</th>
</tr>
</thead>
</table>
(9) CONTROL DEFLECTIONS:

<table>
<thead>
<tr>
<th>Control</th>
<th>Deflection</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elevator UP:</td>
<td>$20^\circ \pm 2^\circ$</td>
</tr>
<tr>
<td>Elevator DOWN:</td>
<td>$10^\circ \pm 2^\circ$</td>
</tr>
<tr>
<td>Ailerons* UP:</td>
<td>$18^\circ \pm 2^\circ$</td>
</tr>
<tr>
<td>Ailerons* DOWN:</td>
<td>$18^\circ \pm 2^\circ$</td>
</tr>
<tr>
<td>Rudder LEFT:</td>
<td>$20^\circ \pm 2^\circ$</td>
</tr>
<tr>
<td>Rudder RIGHT:</td>
<td>$20^\circ \pm 2^\circ$</td>
</tr>
</tbody>
</table>

(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.
(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
**Issue History**

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

Signed: A Love
Illustration of Aircraft

(Pod omitted from drawing for clarity.)
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
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:
   Max. Capacity: 730 mm aft of datum
   Max. Useable: 31.25 litres (22.7kg)
   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
(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’
‘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).