**CIVIL AVIATION AUTHORITY – SAFETY REGULATION GROUP**

**MICROLIGHT TYPE APPROVAL DATA SHEET (TADS)**

**NO: BM-57 ISSUE: 4**

<table>
<thead>
<tr>
<th>TYPE:</th>
<th>EclipseR</th>
</tr>
</thead>
<tbody>
<tr>
<td>MANUFACTURER:</td>
<td>Medway Microlights, Burrow Lane, Middle Stoke, Rochester, Kent, ME9 9RN (have responsibility for continued airworthiness)</td>
</tr>
<tr>
<td>UK IMPORTER:</td>
<td>N/A</td>
</tr>
</tbody>
</table>
| CERTIFICATION: | BCAR Section S Advanced Copy March 1983
BCAR Section S Paper 11 October 1988
BCAR Section S Issue 1, 4 April 1995, 
BCAR Section S Issue 2 August 1999 |
| DEFINITION OF BASIC STANDARD: | Drawings List of Hybred 44 XL ‘R’ and EclipseR Incorporating Mods MM1, MM2, M2 and MM16 through to MM20 |
| COMPLIANCE WITH THE MICROLIGHT DEFINITION |
| (a) MTOW | 367 kg Pre Mod MM20
415 kg Post Mod MM20 |
| (b) No. Seats | 2 |
| (c) Maximum Wing Loading | 24.5 kg/m² Pre Mod MM20
27.3 kg/m² Post Mod MM20 |
| (d) Vso | 36 mph IAS |
| (e) Permitted range of pilot weights | 75 - 86 kg per seat. |
| (f) Typical Empty Weight (ZFW) | 165 kg Pre Mod MM20
208 kg Post Mod MM20 |
| (g) ZFW + 172 kg crew + 1 hr fuel (litres12/8.6 kg) | 367 kg Pre Mod MM20
389 kg Post Mod MM20 |
| (h) ZFW + 86 kg pilot + full fuel (litres 42/31 kg) | 312 kg Pre Mod MM20
325 kg Post Mod MM20 |
| (i) Max ZFW at initial permit issue | 186 kg Pre Mod MM20
234 kg Post Mod MM20 |
(6) POWER PLANTS

<table>
<thead>
<tr>
<th>Designation</th>
<th>44 XL 'R' Mod MM16 Part A to F</th>
<th>44 XL 'R'</th>
<th>44 XL 'R' Mod MM18 Part A &amp; B</th>
<th>44 XL 'R' Mod MM20 Part A/B/C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engine Type</td>
<td>Jabiru 2.2L</td>
<td>Jabiru 2.2L</td>
<td>2 SI 690L70</td>
<td>Rotax 912UL</td>
</tr>
<tr>
<td>Reduction Gear</td>
<td>Direct Drive</td>
<td>Direct Drive</td>
<td>Gear Box 2.62:1</td>
<td>Gear Box 2.27:1</td>
</tr>
<tr>
<td>Exhaust System</td>
<td>Jabiru</td>
<td>Jabiru</td>
<td>2 SI</td>
<td>Medway 1845/1846</td>
</tr>
<tr>
<td>Intake System</td>
<td>K&amp;N</td>
<td>K&amp;N</td>
<td>K&amp;N</td>
<td>K&amp;N</td>
</tr>
<tr>
<td>Propeller Type</td>
<td>Medway 1590 Wooden</td>
<td>Medway 1595</td>
<td>Medway Type 1429 3 Blade</td>
<td>Medway Ecoprop 1844 3 Blade</td>
</tr>
<tr>
<td>Propeller Dia x Pitch</td>
<td>60 x 39</td>
<td>62 not less than 18' 5.3 @ tip</td>
<td>62&quot; x 26&quot; @ 13.5&quot;</td>
<td>64&quot; x 22&quot; @ 53.5 cm</td>
</tr>
<tr>
<td>Noise Type Cert No.</td>
<td>163 M Issue 1</td>
<td>163 M Issue 1</td>
<td>166 M Issue 1</td>
<td>163 M Issue 2</td>
</tr>
<tr>
<td>AAN approving configuration</td>
<td>26586 Issue 2</td>
<td>26586 Issue 2</td>
<td>27241</td>
<td>27859</td>
</tr>
</tbody>
</table>

(7) MANDATORY LIMITATIONS:

(A) Max Take-Off Weight 367 kg Pre Mod MM20
415 kg Post Mod MM20

(B) CG Limits N/A

(C) CG datum N/A

(D) Cockpit Loadings Front Rear Total
Min 75 kg - 75 kg
Max 86 kg 86 kg 172 kg

(E) Never Exceed Speed 100 mph IAS

(F) Manoeuvring Speed 68 mph IAS

(G) Permitted Manoeuvres All aerobatic manoeuvres are prohibited.
Normal acceleration limits +4g/0g
Maximum bank angle 60°
30° Nose up / 30° nose down
Whip stalls are prohibited.

(H) Fuel Contents (Max Useable) 42 litres (post mod MM 16)
### Power Plant

<table>
<thead>
<tr>
<th>Engine</th>
<th>Jabiru 2.2L</th>
<th>2 SI 690L70</th>
<th>Rotax 912UL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max RPM</td>
<td>3300</td>
<td>6500</td>
<td>Max RPM 5800rpm (5 Min Limit)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Max Continuous RPM 5500rpm</td>
</tr>
<tr>
<td>MAX CHT</td>
<td>250°C</td>
<td>250°C</td>
<td>150deg C</td>
</tr>
<tr>
<td>MAX EGT</td>
<td>N/A</td>
<td>650°C</td>
<td>880deg C</td>
</tr>
<tr>
<td>Fuel Spec</td>
<td>4 Star 97 Octane Avgas</td>
<td>Unleaded BS7070 Fuel:Oil @ 50:1</td>
<td>4 Star 97 Unleaded Mogas</td>
</tr>
<tr>
<td>Engine Oil Spec</td>
<td>Aeroshell 15W-50</td>
<td>N/A</td>
<td>Castrol S 80 Castrol Aero AD</td>
</tr>
<tr>
<td>Gearbox oil spec</td>
<td>N/A</td>
<td>SAE 80</td>
<td>Castrol Agre 140</td>
</tr>
<tr>
<td>Fuel/Oil Mix</td>
<td>N/A</td>
<td>50:1</td>
<td>N/A</td>
</tr>
<tr>
<td>Coolant Temperature</td>
<td>N/A</td>
<td>88°C</td>
<td>150Deg C</td>
</tr>
<tr>
<td>Oil Pressure</td>
<td>525 kPa (76 psi)</td>
<td>N/A</td>
<td>2-3 bar max 7bar</td>
</tr>
<tr>
<td>Oil Temperature</td>
<td>118°C Max Continuous</td>
<td>N/A</td>
<td>50-140 Deg C</td>
</tr>
<tr>
<td>Fuel Pressure</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### INSTRUMENTS REQUIRED:

<table>
<thead>
<tr>
<th>ASI</th>
<th>Altimeter</th>
<th>RPM</th>
<th>CHT / EGT</th>
<th>Compass</th>
<th>Coolant temp</th>
<th>Fuel Pressure</th>
<th>VSI</th>
<th>Slip ball</th>
<th>Oil Temp</th>
<th>Oil Pressure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Required</td>
<td>Required</td>
<td>Required</td>
<td>Required</td>
<td>Required</td>
<td>Required</td>
<td>0pt</td>
<td>Opt</td>
<td>N/A</td>
<td>Required</td>
<td></td>
</tr>
</tbody>
</table>

### CONTROL DEFLECTIONS: N/A

- Elevator UP: ±
- Elevator DOWN: ±
- Ailerons* UP: ±
- Ailerons* Down: ±

**Tailplane trim UP:**
**Tailplane trim DOWN**
**Rudder LEFT:**
**Rudder RIGHT:**
(10) PILOT'S NOTES, MAINTENANCE MANUALS REFERENCES:

10.1 Manuals approved for use with this aircraft.

(a) EclipseR Manual Issue 1 - pre MM18
(b) Rebel SS Manual Issue - post MM18
(c) EclipseR 912UL Manual Issue 1 - post MM20

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 (litres), fuel type(s), fuel:oil ratio (if relevant) and if MTOW can be exceeded with full fuel and maximum cockpit weight, 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.

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

See Annex A for required modifications.

Annual Bettsometer test is to be carried out to 1360 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: Minimum climb rate of 600 ft/min
Climb speed: 45 mph IAS
Stall or Minimum Flying Speed: 36 mph IAS
CIVIL AVIATION AUTHORITY – SAFETY REGULATION GROUP

MICROLIGHT TYPE APPROVAL DATA SHEET (TADS)

NO: BM-57 ISSUE: 4

### 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>19/02/99</td>
<td>Issue 1 was raised to record the application of the Jabiru 2.2L Four stroke engine &amp; rear suspension in accordance with Mod No. MM16 parts A, B, C, D, E &amp; F. J Barratt</td>
</tr>
<tr>
<td>2</td>
<td>23/03/00</td>
<td>Correct typographical error on page 3, item 13: Rate of Climb. Installation of 2SI 690L70 two stroke engine in accordance with Mod No. MM18 Parts A &amp; B. J Barratt</td>
</tr>
<tr>
<td>3</td>
<td>11/09/01</td>
<td>Installation of Rotax 912UL, Medway Ecoprop 3 Blade propeller and MTOW increase to 415kg in accordance with MM20 parts A,B and C J Barratt</td>
</tr>
<tr>
<td>4</td>
<td>19/06/03</td>
<td>Inclusion of optional major modifications and MPD for upper torso restraint for passengers.</td>
</tr>
</tbody>
</table>

J Barratt
CIVIL AVIATION AUTHORITY – SAFETY REGULATION GROUP
MICROLIGHT TYPE APPROVAL DATA SHEET (TADS)

NO: BM-57  ISSUE: 4

ANNEX A – MANDATORY MODIFICATIONS

1. MPD 2001-006 Upper Torso Restraint for Passengers

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.

<table>
<thead>
<tr>
<th>Mod</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>MM17/A</td>
<td>New Control Bar</td>
</tr>
<tr>
<td>MM17/B</td>
<td>Modification to Parking Restrictor</td>
</tr>
<tr>
<td>MM20</td>
<td>Part A - Engine Rotax 912</td>
</tr>
<tr>
<td></td>
<td>Part B - Propeller</td>
</tr>
<tr>
<td></td>
<td>Part C - Increase MTOW 415 kg</td>
</tr>
</tbody>
</table>

Note: Parts A, B and C must be embodied simultaneously. Individual parts of the modification can not be embodied in isolation.

ANNEX C - WEIGHING INFORMATION

1. CG Datum: N/A
2. Weighing attitude: N/A
3. Mainwheel moment arm: N/A
4. Nosewheel moment arm: N/A (units) (direction) of datum
5. Fuel moment arm: N/A (units) (direction) of datum
6. Crew moment arm: N/A (units) (direction) of datum
7. Crew weights: Minimum 75 kg / maximum 86 kg (maximum reducible, not below 86 kg, if required).
8. Aft CG Limit: N/A (units) (direction) of datum
9. Fwd CG Limit: N/A (units) (direction) of datum
ANNEX D - EXAMPLE PLACARDS

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

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

**G-B******
DO NOT EXCEED MAXIMUM
COCKPIT LOAD OF . 86kg...
DO NOT EXCEED VNE OF
100 mph IAS
Manoeuvring Speed 68 mph IAS
Stall Speed 36 mph IAS
Best Climb Speed 45 mph IAS
Best Glide Speed 42 mph IAS

DO NOT PITCH NOSE UP
OR DOWN MORE THAN
30° HORIZONTAL OR
EXCEED 60° ANGLE OF BANK
FLY SOLO FROM
FRONT SEAT ONLY

Minimum Permitted
Cockpit Load 75 kg

NO NEGATIVE g OR
AEROBATIC MANOEUVRES
NO WHISTALLS
NO LOOPS
NO STALLED SPIRAL
DESCENTS

**AIRCRAFT's WEIGHTS**
DRY EMPTY 208kg
MTOW 415kg

**SERIAL No ..................**

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

Maximum Oil temperature 140degC
Maximum oil Pressure 7 bar
Maximum CHT 150degC
Maximum Water temperature 150degC
Maximum EGT 880degC

MAX RPM
5800 RPM (5 Min Limit)
MAX Continuous
5500 RPM

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)

<table>
<thead>
<tr>
<th>FUEL</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Capacity</td>
<td>Litres</td>
</tr>
<tr>
<td>(50:1 2 Stroke oil / do not add oil)</td>
<td></td>
</tr>
<tr>
<td>Cockpit Weight (kg)</td>
<td>Max. Fuel Load (litres)</td>
</tr>
<tr>
<td>180</td>
<td></td>
</tr>
<tr>
<td>170</td>
<td></td>
</tr>
<tr>
<td>...</td>
<td></td>
</tr>
<tr>
<td>... Or below</td>
<td>Full fuel</td>
</tr>
<tr>
<td>4 Star 97 Octane Avgas or Unleaded BS7070 see 7(I)</td>
<td></td>
</tr>
</tbody>
</table>

(d) Switches

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

The following action required by this Mandatory Permit Directive (MPD) is mandatory for applicable aircraft registered in the United Kingdom operating on a UK CAA Permit to Fly.

MPD : 2001-006 MEDWAY MICROLIGHTS / SOUTHDOWN INTERNATIONAL

Subject: Upper torso restraint for passengers.

Applicability: Medway Microlights and Southdown International two seat microlights.

Reason: As a result of a recent fatal accident, AAIB recommendation 2001-52 has been issued. This recommends that manufacturers of UK registered microlight aircraft provide upper body restraint to the rear seats where forward movement of the passenger could cause injury to the pilot. This recommendation was accepted by the CAA.

Compliance: Before 31 December 2001 install shoulder straps for use by passenger, in accordance with Medway Microlights Service Bulletin No 0015.

A copy of the Service Bulletin and further information can be obtained from:

Medway Microlights
Burrows Lane
Middle Stoke
Rochester
Kent
ME3 9RN

Tel: 01634 270780
Fax: 01634 270648
Email: medway@ravenmad.co.uk

Record compliance with this MPD in the aircraft log book.

This MPD becomes effective on 1 November 2001.