CIVIL AVIATION AUTHORITY
SAFETY REGULATION GROUP

MICROLIGHT TYPE APPROVAL DATA SHEET (TADS)

NO: BMO-16  ISSUE: 1

TYPE
Demon/Tripacer

(1) MANUFACTURER:
Wing: Hiway Hang Gliders Ltd - (No longer trading, refer to Hiway Hang Gliders 1983 Ltd)
Trike: Ultrasports Ltd (UK) - (No longer trading)

(2) UK IMPORTER:
N/A

(3) CERTIFICATION BASIS:
Reduced BCAR Section S as per CAA letter of 17 January 1986, ref: 9/30/UL18

(4) DEFINITION OF BASIC STANDARD:
Not Available (but see BMAA Documents WS 005 and TS 002)

(5) DIMENSIONS/WEIGHTS FOR COMPLIANCE WITH MICROLIGHT DEFINITION

(a) Wing area (inc canard area, excluding winglets): 14.86 m² 16.26 m² 18.1 m²
(b) Span:
9.76 m 10.5 m 10.67 m
(c) Standard Mean Chord:
1.52 m 1.62 m 1.70 m
(d) Dry Empty Weight:
87 kg
(e) Max Take-Off Weight:
195 kg (235 kg if as Appendix 2 mods)
(f) Wing Loading (Weight Empty/Wing Area):
4.81 kg/m² to 5.85 kg/m²
(g) Wing Loading (Max Take-Off Weight/Wing Area):
4.81 kg/m² to 13.12 kg/m²
(15.81 Kg/m² if as Appendix 2 mods)
(h) Fuel Capacity
25 litres

(6) POWER PLANTS

<table>
<thead>
<tr>
<th>Designation</th>
<th>Demon/ Tripacer</th>
<th>Demon/ Tripacer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engine Type</td>
<td>Fuji Robin EC25PS, Inv</td>
<td>Fuji Robin EC25PS, Inv</td>
</tr>
</tbody>
</table>

| Reduction Gear | 2.4:1 | 2.66:1 |
| Exhaust System | Ultrasports | Rotaflow |
| Intake System | N/A | N/A |
| Propeller Type | Romain Laminated Wood | Hornet Sq Tip Laminated Wood |
| Propeller Dia x Pitch | 54" x 24" | 54" x 27" |
| Noise Type Cert No. | 55M Iss 3 | 55M Iss 3 |

Noise requirement
Registered Pre 1/4/86 80 dbA (SEL) 84 dbA (SEL) N3-6 3 Iss 4
Registered Post 1/4/86 76 dbA (SEL) 80 dbA (SEL) N3-6 4 Iss 4
(7) **MANDATORY LIMITATIONS:** *To be placarded*

*(a) Max Take-off Weight: 195 kg (235 if modified as per Appendix 2)*

*(b) C G Limits: N/A*

*(c) C G Datum:*

*(d) Cockpit Loadings:*

<table>
<thead>
<tr>
<th>Pilot or Ballast (min)</th>
<th>Front</th>
<th>Rear</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>55 kg</td>
<td>-</td>
<td></td>
<td>55 kg</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Pilot or Ballast (max)</th>
<th>Front</th>
<th>Rear</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>90 kg</td>
<td>-</td>
<td></td>
<td>90 kg</td>
</tr>
</tbody>
</table>

*(e) Permanent Ballast, Weight and Position:*

*(f) Empty C G:*

*(g) Never Exceed Speed: 39 knots (45 mph)*

*(h) Manoeuvring Speed:*

*(i) Manoeuvre Limitations: Non-Aerobatic Pitch ≤ 30° Roll ≤ 60°*

*(j) Fuel Contents (Max Usable): 25 litres*

*(k) Power Plant: See Table*

<table>
<thead>
<tr>
<th>Engine</th>
<th>Fuji Robin EC25PS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max RPM</td>
<td>6500</td>
</tr>
<tr>
<td>Max CHT</td>
<td></td>
</tr>
<tr>
<td>Max EGT</td>
<td></td>
</tr>
<tr>
<td>Fuel Spec</td>
<td>2 Star (Min) Petrol/Oil</td>
</tr>
<tr>
<td>Engine Oil Spec</td>
<td>Self Mix</td>
</tr>
<tr>
<td>Oil Spec</td>
<td>2 Stroke</td>
</tr>
<tr>
<td>Gearbox Oil Spec</td>
<td></td>
</tr>
<tr>
<td>Fuel/Oil Mix</td>
<td>40:1</td>
</tr>
<tr>
<td>Oil Press</td>
<td></td>
</tr>
<tr>
<td>Oil Temp</td>
<td></td>
</tr>
<tr>
<td>Coolant Temp</td>
<td></td>
</tr>
</tbody>
</table>
(8) **INSTRUMENTS REQUIRED FOR TYPE APPROVAL:**

<table>
<thead>
<tr>
<th>Instrument</th>
<th>ASI</th>
<th>Altimeter</th>
<th>RPM</th>
<th>CHT</th>
<th>Compass</th>
<th>EGT</th>
<th>Coolant Temp</th>
</tr>
</thead>
<tbody>
<tr>
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<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>0-55 mph</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Required</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wrist type acceptable</td>
<td>Required</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

(9) **CONTROL DEFLections (3-AXIS SYSTEMS):**

<table>
<thead>
<tr>
<th>Control</th>
<th>Pitch Control</th>
<th>Tailplane Trim</th>
<th>Ailerons</th>
<th>Rudder</th>
<th>Steering</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Up: -</td>
<td>Up: -</td>
<td>Up: -</td>
<td>Left: -</td>
<td>Left: -</td>
</tr>
<tr>
<td></td>
<td>Down: -</td>
<td>Down: -</td>
<td>Down: -</td>
<td>Right: -</td>
<td>Right: -</td>
</tr>
</tbody>
</table>

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

Hiway Demon Owner's Handbook

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

BMAA Inspector's Manual; BMAA Documents WS 005 and TS 0002

(12) **APPROVED OPTIONAL MODIFICATIONS**

(13) **MINIMUM PERFORMANCE AT MAX T/O WT**

Rate of Climb: 428 ft/min
Climb Speed: 26 mph

Stall or Minimum Flying Speed: 22 mph (idle power) 25 mph (max power)
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Notes:

1. G A Drawings and/or colour photographs illustrating the principal features of the aircraft (described herein) shall be attached to, and form part of, this Data Sheet.

<table>
<thead>
<tr>
<th>Issue</th>
<th>Date</th>
<th>CAA Approval</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>31 January 1991</td>
<td></td>
</tr>
</tbody>
</table>
Additional Documentation

The Demon/Tripacer must satisfy the modification and inspection provisions set out in BMAA documents WS 005 and TS 002 (latest issue). The areas affected are as follows:

a) Modifications

- S 626  Rigging Cables
- S 627  Non-Flexible Coating
- S786  Safety Helmet Placard
- S 901  Powerplant Installation
- S 967 b) Fuel tank (if installed above engine)
- S 993 d) Fuel lines
- S995  Fuel cock
- S 1141 E Ignition Switch Wiring
- S 1303 1) Air Speed Indicator
- S 1303 2) Altimeter Placard (where applicable)
- S 1541  Other placards

b) Inspection

- S 605 E Welds on: Engine supports, seat frame and front wheel assembly. Also to be inspected: axle bushes, keel plate - axle wire clearance, axle drag strut reinforcement. Front strut.
- S 607  (Wing): Self locking nuts, retention of battens. (Trike): Propeller shaft self locking nut
- S 612  Cable Thimbles
- S 623  Attachment of trike to wing
- S 626  Cables and swages
- S 627  (Wing): Areas for inspection as WS 005 paragraphs 1 & 6. Also cross boom tensioning arrangement, as WS 005 paragraph 2 (see also Defect Warning Report No 142). (Trike): Top of seat frame.
- S 775  Windshield (if fitted)
- S 785  Safety Harness/Seat Belt and Attachments.
- S 901 b) 1) Powerplant Installation
- S 925 b) Clearance between Propeller and Aircraft Structure
- S 951  Fuel System - Vapour Locks
- S 959  Unusable fuel quantity
- S 967  Fuel Tank Installation
- S 975  Fuel Tank Vents
- S 1301 1) Installed Equipment

In addition, Inspectors must pay attention to the relevant 'Spotlight' and Defect Warning Reports in the BMAA Inspectors' Manual.
Appendix 2

Modifications Required for Increase in Maximum All Up Weight

If the modifications summarised below are incorporated on a Demon wing, the maximum all up weight may be raised to 235 kg.

These modifications MUST initially be inspected and signed off, in an appropriate individual log book entry, either by the Type Specialist: Mr John Ievers or Hiway Hang Gliders (1983) Ltd., Longtown, Hereford, HR2 OLE, or by another person so authorised by the BMAA.

i) Cross tubes of at least 2.125" outside diameter to be installed.

ii) Flying wires (all under side wires) of at least 3 mm diameter to be fitted.

iii) Keel tube of 1.75" outside diameter, together with local reinforcements of 1.875" outside diameter to be used.

iv) Steel 'wrap-round' hang point on nylon bush to be used (of similar design to that used on Pegasus XL).

Further information on these modifications should be obtained from Mr John Ievers at the above address.