

**BRITISH MICROLIGHT AIRCRAFT ASSOCIATION**


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

NO: BMO-22 ISSUE: 1

**TYPE** Demon/Skytrike

- (1) **MANUFACTURER:** Wing and trike unit: Hiway Hang Gliders Ltd (no longer trading refer to Hiway Hang Gliders (1983) Ltd.
- (2) **UK IMPORTER:** N/A
- (3) **CERTIFICATION BASIS:** BCAR Section S requirements listed in CAA document dated 17th January 1986, ref: 9/30/UL18
- (4) **DEFINITION OF BASIC DESIGN STANDARD:** Not available (but see BMAA documents WS.005 and TS.006).
- (5) **DIMENSIONS/WEIGHTS FOR COMPLIANCE WITH MICROLIGHT DEFINITION**
  - (a) Wing area (inc canard area, excluding winglets): 16.26m<sup>2</sup> (+1.86m<sup>2</sup>/-1.40m<sup>2</sup>)
  - (b) Span: 10.05m (+0.62m/-0.29m)
  - (c) Standard Mean Chord: 1.62m (+0.08m/-0.10m)
  - (d) Dry Empty Weight: 79 kg - 109 kg
  - (e) Max Take-Off Weight: 195 kg (233 kg if modified as Appendix 2)
  - (f) Wing Loading (Weight Empty/Wing Area): 4.36 kg/m<sup>2</sup> to 7.34 kg/m<sup>2</sup>
  - (g) Wing Loading (Max Take-Off Weight/Wing Area): 10.77 kg/m<sup>2</sup> 13.12 kg/m<sup>2</sup> (up to 15.68 kg/m<sup>2</sup> if modified as Appendix 2)
  - (h) Fuel Capacity: 25 litres

**DOCUMENT ISSUE STATUS**

Issue Number	Revision Reference	Date	Authorisation	Pages affected	Valid pages at this Issue number 1	
					Page No.	Page Issue
1	New MAYEN 1052	11/2/93	BMAA 	All new		
					1	1
					2	1
					3	1
					4	1
					5	1
					6	1
					7	1
					8	1

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

**NO: BMO-22 ISSUE:1**

**(6) POWER PLANTS**

Designation	Demon/ Skytrike <sub>1</sub>	Demon/ Skytrike <sub>2</sub>	Demon/ Skytrike <sub>3</sub>	Demon/ Skytrike <sub>4</sub>	Demon/ Skytrike <sub>5</sub>
Engine Type	AirDelta Hiro 125 Upr't	Fuji Robin EC25PS Inv't	Fuji Robin EC25PS Inv't	Fuji Robin EC25PS Inv't	Fuji Robin EC34PM Inv't
Reduction Gear/ratio	3.6:1	2.5:1	2.13:1	2:1	2.1:1
Exhaust System	Hiro	Hiway	Rotaflow	Nicklow	Rotaflow
Intake System	-	-	-	-	-
Propeller Type	Hiway wood	Laminated wood sq tip	Laminated wood	Laminated wood	Farr wood
Propeller Dia x Pitch	52" x 30"	54" x 27"	54" x 30"	52" x 27" "	54" x 27"
Noise Type Cert. No.	94 M Issue 2	94 M Issue 2	94 M Issue 3	94 M Issue 3	84 M Issue 1

Designation	Demon/ Skytrike <sub>6</sub>	Demon/ Skytrike <sub>7</sub>	Demon/ Skytrike <sub>8</sub>	Demon/ Skytrike <sub>9</sub>	Demon/ Skytrike <sub>10</sub>
Engine Type	Fuji Robin EC34PM Inv'td	Fuji Robin EC34PM Inv'td	Fuji Robin EC34PM Inv'td	Fuji Robin EC25PS Inv'td	Fuji Robin EC34PM Inv'td
Reduction Gear/ratio	2.4:1	2:1	2.8:1	2.86:1	2.8:1
Exhaust System	Nicklow	Hiway	Nicklow	Hiway	Hiway + after muff'lr
Intake System	-	-	-	-	-
Propeller Type	Ritz wood	Hiway sq tip wood	Romain sq tip wood	Laminated wood	Romain
Propeller Dia x Pitch	54" x 30"	54" x 32"	54" x 36"	52" x 27"	54" x 36"
Noise Type Cert. No.	94 M Issue 2	94 M Issue 2	94 M Issue 2	94 M Issue 4	94 M Issue 2

**Noise requirement:**

	1 Seat	2 Seat	BCAR Reference
Registered Pre 1/4/86	80 dBA	84 dBA	N3-6, 3 Iss 4
Registered Post 1/4/86	76 dBA	80 dBA	N3-6, 4 Iss 4

MICROLIGHT TYPE ACCEPTANCE DATA SHEET (TADS)

NO: BMO-22 ISSUE: 1

(7) MANDATORY LIMITATIONS: (\* indicates which are placarded)

- \* (a) Max Take-off Weight: 195 kg (233 kg if modified as stated in Appendix 2)
- \* (b) C G Limits: N/A - weightshift
- (c) C G Datum: -
- \* (d) Cockpit Loadings
 

	<u>Front</u>	<u>Rear</u>	<u>Total</u>
Pilot or Ballast (min)	55kg	- kg	55kg
Pilot or Ballast (max)	90kg	- kg	90kg
- (e) Permanent Ballast, Weight and Position: Not fitted.
- (f) Empty C G: -
- \* (g) Never Exceed Speed: 45 mph (39 knots)
- \* (h) Manoeuvring Speed: 44 mph (38 knots)
- \* (i) Manoeuvre Limitations: Aerobatics prohibited. Roll <60° bank  
Pitch <+/- 30°
- \* (j) Fuel Contents (Max Usable): 25 litres
- (k) Power Plant: See Table below

ENGINE	AirDelta Hiro 125	Fuji Robin EC25PS	Fuji Robin EC34PM	
Max RPM	8500	6500	7500	
Max CHT	N/A	N/A	N/A	
Max EGT	N/A	N/A	N/A	
Fuel Spec	92 Oct (min) Petrol/oil	92 Oct (min) Petrol/oil	92 Oct (min) Petrol/oil	
Engine Oil Spec	Self Mix 2 stroke	Self mix 2 stroke	Self mix 2 stroke	
Gearbox Oil Spec	20/50 motor oil	N/A	N/A	
Fuel/Oil Mix	50:1	40:1	40:1	
Oil Pressure	N/A	N/A	N/A	
Oil Temp	N/A	N/A	N/A	
Coolant Temp	N/A	N/A	N/A	

MICROLIGHT TYPE ACCEPTANCE DATA SHEET (TADS)

NO: BMO-22 ISSUE: 1

(8) INSTRUMENTS REQUIRED FOR TYPE ACCEPTANCE:

<u>ASI</u>	<u>Altimeter</u>	<u>RPM</u>	<u>CHT</u>	<u>Compass</u>	<u>EGT</u>	<u>Coolant Temp</u>
Required 0 to 55 mph or equivalent	Required Wrist type acceptable	N/A	N/A	N/A	N/A	N/A

(9) CONTROL DEFLECTIONS (3-AXIS SYSTEMS): N/A - weighshift

<u>Pitch Control</u>	Up:	Down:
<u>Tailplane Trim</u>	Up:	Down:
<u>Ailerons</u>	Up:	Down:
<u>Rudder</u>	Left:	Right:
<u>Steering</u>	Left:	Right:
<u>Spoilers</u>		

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

MAAN 1052.  
BMAA documents WS.005 and TS.006.  
Hiway Demon Ownwer's Handbook.

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

See Appendix 1

(12) APPROVED OPTIONAL MODIFICATIONS

See Appendix 2

(13) MINIMUM PERFORMANCE AT 191 kg T/O WEIGHT:

Rate of Climb: 428 ft/minute (with AirDelta Hiro 125 cc engine)

Climb Speed: 29 mph IAS

Stall or Minimum Flying Speed: 25 mph (Max power), 22 mph (Idle)

MICROLIGHT TYPE ACCEPTANCE DATA SHEET (TADS)

NO: BMO-22 ISSUE: 1

Note: 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.

Issue

Date

BMAA Authorisation

1

19 February 1993

*P. J. Owen*

MICROLIGHT TYPE ACCEPTANCE DATA SHEET (TADS)

NO: BMO-22 ISSUE: 1

APPENDIX 1.

ADDITIONAL DOCUMENTATION

The Demon/Skytrike must satisfy the modification and inspection provisions set out in BMAA documents WS.005 and TS.006 (latest issue). The areas affected are as follows:

a) Modifications:

- S 605 E i) Wing attachment bracket. ii) Front strut.
- S 626 Rigging cables.
- S 627 Non flexible coating.
- S 786 Safety helmet placard.
- S 901 Power plant installation.
- S 967 b) Fuel tank (if installed above engine).
- S 993 d) Fuel lines.
- S 995 Fuel cock.
- S 1141 E Ignition switch wiring.
- S 1303 1) Airspeed indicator.
- S 1303 2) Altimeter placard (where applicable).
- S 1541 Other placards.

b) Inspection:

- S 603 Basic structure of trike.
- S 605 E Welds on engine supports, seat frame, and front wheel assembly.
- S 607 (Wing): Self locking nuts. Retention of battens.  
(Trike): Propeller shaft self locking nut (if fitted).
- S 609 (Wing): Keel. Sail fabric. Negative load bracing wires.
- S 623 Attachment of wing to trike.
- 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).
- S 775 Windshield (if fitted).
- S 785 Safety harness/seat belt and attachments.
- S 901 b) 1) Power plant installation.
- S 925 b) Clearance between propeller and aircraft structure.
- S 951 Fuel system - vapour locks.
- S 959 Unusable fuel.
- S 967 Fuel tank installation.
- S 975 c) Fuel tank vents.
- S 977 b) Fuel filter.
- S 993 e) Fuel lines.
- S 1145 Ignition switch.
- S 1301 Installed equipment.

In addition, Inspectors must pay attention to the relevant "Spotlight" and Defect Warning reports in the BMAA Inspectors' Manual.

MICROLIGHT TYPE ACCEPTANCE DATA SHEET (TADS)

NO: BMO-22 ISSUE: 1

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 233 kg.

These modifications must initially be inspected and signed off, in an appropriate individual log book entry, by the Type Specialist: Mr. John Ievers of Hiway Hang Gliders (1983) Ltd., Longtown, Hereford, HR2 0LE, 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 3mm 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.

MICROLIGHT TYPE ACCEPTANCE DATA SHEET (TADS)

NO: BMO-22 ISSUE: 1

APPENDIX 3.

DEMON wing with typical trike.

