

**BRITISH MICROLIGHT AIRCRAFT ASSOCIATION**

**HOMEBUILT AIRCRAFT DATA SHEET (HADS)**

**NO: HM2 ISSUE: 8**

TYPE: HUNTWING AVON\*

(1) MANUFACTURER: Various

Designer is J A Hunt, Old Railway Inn, Clydach South,  
Abergavenny, Gwent, NP7 0RD

(2) UK IMPORTER: N/A

(3) CERTIFICATION: BCAR SECTION S, (in the modification state at the date of  
manufacture or modification of any example)

(4) DEFINITION OF BASIC STANDARD: MAAN for individual aircraft.

(5) COMPLIANCE WITH THE MICROLIGHT DEFINITION

(a) MTOW	372 kg
(b) No. Seats	2
(c) Maximum Wing Loading	24.57 kg/m <sup>2</sup>
(d) V <sub>so</sub>	(NK, NR)
(e) Permitted range of pilot weights	55 – 90 kg per seat.
(f) Typical Empty Weight (ZFW)	180 kg
(g) ZFW + 172 kg crew + 1 hr fuel (28 litres / 20kg)*	372 Kg
(h) ZFW + 86 kg pilot + full fuel (50 litres / 36 kg)**	302 kg
(i) Max allowed ZFW at initial permit issue <sup>#</sup>	Depends upon engine and fuel capacity.

\*Based upon Rotax 582, worst-case engine fuel consumption.

\*\* based upon 50 litre tank, largest known.

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\* Note: During aircraft construction, this HADS is to be used with the Huntwing stage inspection sheets, form BMAA/AW/022 (Huntwing Avon). If there is a conflict between the two, the latest HADS will always take precedence.

<sup>#</sup> The maximum ZFW is the lower of (a)-(g) or (a)-(h).  
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### NO: HM2 ISSUE: 8

#### (6) POWER PLANTS

Designation	Huntwing Avon 440	Huntwing Avon 440 (2)	Huntwing Avon 462 (1)	Huntwing Avon 462 (2) <sup>1</sup>	Huntwing Avon 462(3) <sup>1</sup>
Engine Type	Fuji Robin EC44PM inverted		Rotax 462-1V inverted		
Reduction Gear	2.77:1 toothed belt		2.58:1 Rotax A-type gearbox		
Exhaust System	Fuji / Nicklow		Rotax side mounted.		Rotax 2 x 90°
Intake System	K&N intake filter (s).			Rotax intake muffler	
Propeller Type	Nicklow	Ivoprop 2 blade GA	Newton	Ivoprop 3 blade VP <sup>2</sup>	Ivoprop 3-blade
Propeller Dia x Pitch	60" x 36"	60" x 14° at tip	62" x 44"	64" , flt. adj.	64", 11° at tip
Noise Type Cert No.	92M issue 1	146M issue 7	92M issue 2	146M issue 1	146M issue 6
MAAN Approving	1085	1625	1085	1124	1514

Designation	Huntwing Avon 503 (2)	Huntwing Avon 503 (3)	Huntwing Avon 582 (1)	Huntwing Avon 582 (2)	Huntwing Avon 582(3)
Engine Type	Rotax 503-2V inverted	Rotax 503-1V inverted	Rotax 582/48 – 2v upright		Rotax 582/40 – 2v upright
Reduction Gear	2.58:1 Rotax B-type gearbox			Rotax E-type 3.47:1	
Exhaust System	Rotax side mounted with after muffler				
Intake System	Rotax intake muffler		K&N intake filters.		
Propeller Type	Ivoprop 3 blade ground adjustable			Arplast Ecoprop 3 blade GA	
Propeller Dia x Pitch	64”, 11° at tip		64”, 14° at tip	1.7m, 23°@ 60% Radius	1.66m, 19°@ 53.5cm Radius
Noise Type Cert No.	152M issue 1		146M issue 2	146M issue 7	146M issue 7
MAAN Approving	1224, 1283, 1326	1375	1322	1622	1933

<sup>1</sup> 462 / Ivoprop configurations must have had the gearbox retrofitted with the B-type gearbox 12 spring shock absorber.

<sup>2</sup> Variable pitch propellers require a separate CAA CAP400 logbook.

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Designation	Huntwing Avon 503 (1)	<i>Intentionally blank</i>	<i>Intentionally blank</i>	<i>Intentionally blank</i>	Huntwing Avon BMW(1)
Engine Type	Rotax 503-2V inverted				BMW R100RS upright
Reduction Gear	2.62:1 Rotax E-type				3.47:1 Rotax C-type
Exhaust System	Rotax side mounted with after muffler				JH6 exhaust,
Intake System	Rotax intake muffler				K&N intake filters.
Propeller Type	Warp Drive 3 blade GA				Arplast Ecoprop 3 blade GA
Propeller Dia x Pitch	62", 8° at tip				65", 23° @ 75% radius
Noise Type Cert No.	146M issue 3				146M issue 6
MAAN Approving	1321				1428

### (7) MANDATORY LIMITATIONS:

(A) Max Take-Off Weight	372 kg			
(B) Permitted Hangpoint Range	1570 to 1600mm aft of datum			
(C) Hangpoint Datum	Front of wing main keel			
(D) Cockpit Loadings	Front	Rear	Total	
	Min	55 kg	-	55 kg
	Max	90kg	90 kg	180 kg
(E) Never Exceed Speed	75 knots / 86mph IAS			
(F) Manoeuvring Speed	45 knots / 52 mph IAS			

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(G) Permitted Manoeuvres

30° Nose up / 30° nose down  
Non Aerobatic  
Normal acceleration limits, +4 / -2g

(H) Fuel Contents (Max Useable)

Varies between aircraft.

(I) Power Plant

See Table

Engine	Fuji Robin EC44PM	Rotax 462	Rotax 503 All variants	Rotax 582/40	Rotax 582/48-2V	BMW R100RS
Max RPM	6,750	6,500	6,500	6,000 cont. 6,400 5-mins	6,800 cont. 6,500 5-mins	6,000 cont. 6,500 5-mins
Max CHT	218°C if indicated	250°C	250°C	150°C	150°C	490 °F
Max EGT	815°C if indicated	650°C if indicated	650°C if indicated	650°C if indicated	650°C if indicated	n/a
Fuel Spec	2 star or greater octane rated fuel	83 MON or 90 RON minimum unleaded to BS(EN)228 or 97+ octane 4-star or MOGAS leaded fuel to BS 4040				
Engine Oil Spec	non-detergent 2-stroke self mix					See engine manual
Gearbox Oil Spec	n/a	See gearbox manual.				
Fuel/Oil Mix	40:1	50:1	50:1	50:1	50:1	n/a
Oil Press	n/a	n/a	n/a	n/a	n/a	58 - 72.5psi @ 4,000 RPM / 80°
Oil Temp	n/a	n/a	n/a	n/a	n/a	130°C
Coolant temp	n/a	95°C	n/a	80°C	80°C	n/a

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**(8) INSTRUMENTS REQUIRED:**

ASI	Altimeter	RPM	CHT / EGT	Compass	Coolant temp	Fuel Pressure	VSI	Slip ball
Required (to 84 kn / 96 mph min.)	Required	Optional	Optional	Optional	Optional	Optional	Optional	Optional

**(9) CONTROL DEFLECTIONS:**

Conventional weight shift controls

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

10.1 Manuals approved for use with this aircraft.

- (a) Huntwing Operators Manual
- (b) Manufacturer's engine manual
- (c) Propeller manual
- (d) Maintain to BMAA schedule MMS issue 1 (TIL 020) and engine manufacturers guidelines.

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.

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.


Also see BMAA Inspectors handbook.

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

Rate of Climb: 350 ft/min (Huntwing Avon 440)  
450 ft/min (Huntwing Avon 462(1) and (2))  
500 ft/min (Huntwing 462(3))  
300 ft/min (Huntwing Avon 503(1))  
500 ft/min (Huntwing Avon 503(2))  
800 ft/min (582 and BMW variants)

Climb Speed: 39kn / 45 mph (582 & BMW variants)  
40 kn / 46 mph (Huntwing 462(3))  
35 kn / 40 mph IAS all other variants

Stall or Minimum Flying Speed: 28 kn / 32 mph IAS, except for:-  
23 kn / 27 mph IAS (Huntwing Avon 503(1) & 582(1))

BMAA Approval:		Chief Technical Officer	02 June 2006
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##### Issue History

BM017 Issue 1	Issued by CAA, 31 Jan 1991
BM017 Issue 2	Issue by BMAA, 24 Nov 1993. MAAN 1124. Signatory P Owen, CTO
BM017 Issue 3	Issue by BMAA, 4 Mar 1996, MAAN 1085 raising MTOW from 363 kg to 372 kg for all aircraft. Signatory W G Brooks, CTO.
BM017 Issue 4	Issue by BMAA, 22 Apr 1998, MAAN 1321, introducing Huntwing Avon 503 variant. Signatory G B Gratton, CTO.
BM017 Issue 5	Issue by BMAA, July 1998, MAAN's 1224, 1283, 1326, 1375 and 1322 introduced; 503 variants and a 582 introduced. Standardised name used. Signatory G B Gratton, CTO
BM017 Issue 6	Issue by BMAA, March 1999. Correcting an error in configuration Huntwing Avon 462(2). Signatory G B Gratton, CTO.
BM017 Issue 7	Issue by BMAA, September 1999. MAAN 1428 introducing BMW R100RS engine. Signatory G B Gratton, CTO.
HM2 Issue 1	Issue by BMAA, 2 Nov 99, correction of minor typographic errors, compliance with new Homebuilt Aircraft Data Sheet format. Signatory G B Gratton, CTO.
HM2 Issue 2	Issue by BMAA, 14 August 2000, addition of configuration 462(3). Signatory G B Gratton CTO.
HM2 Issue 3	Issue by BMAA, 12 Sept 2000, corrections due to errors in MAAN 1514 issue 1, and re-issue at issue 2. Signatory G B Gratton, CTO.
HM2 Issue 4	Issue by BMAA, 5 April 2001. Addition of permitted fuel tank combinations at Annex B, addition of fuel tap location requirements in mandatory inspection. Signatory G B Gratton, CTO.
HM2 Issue 5	Issue by BMAA, 15 Nov 2001. Addition of mandatory rear seat upper torso restraint (S1307). Signatory G B Gratton, CTO. Authorised by MAAN 1579.
HM2 Issue 6	Issue by BMAA, 19 Sept 2002. Additional configuration 582(2). Signatory G B Gratton, CTO. Authorised by MAAN 1622.
HM2 Issue 7	Issue by BMAA, 31 August 2005. Addition of configuration 582(3): approval of configuration Avon 440(2) – authorised by MAAN 1625.
HM2 Issue 8	Issue by BMAA, 2 June 2006. Approval of configuration 582(3) – authorised by MAAN 1933.

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Figure 1 - Illustration of Aircraft (Huntwing Avon 440 Variant)

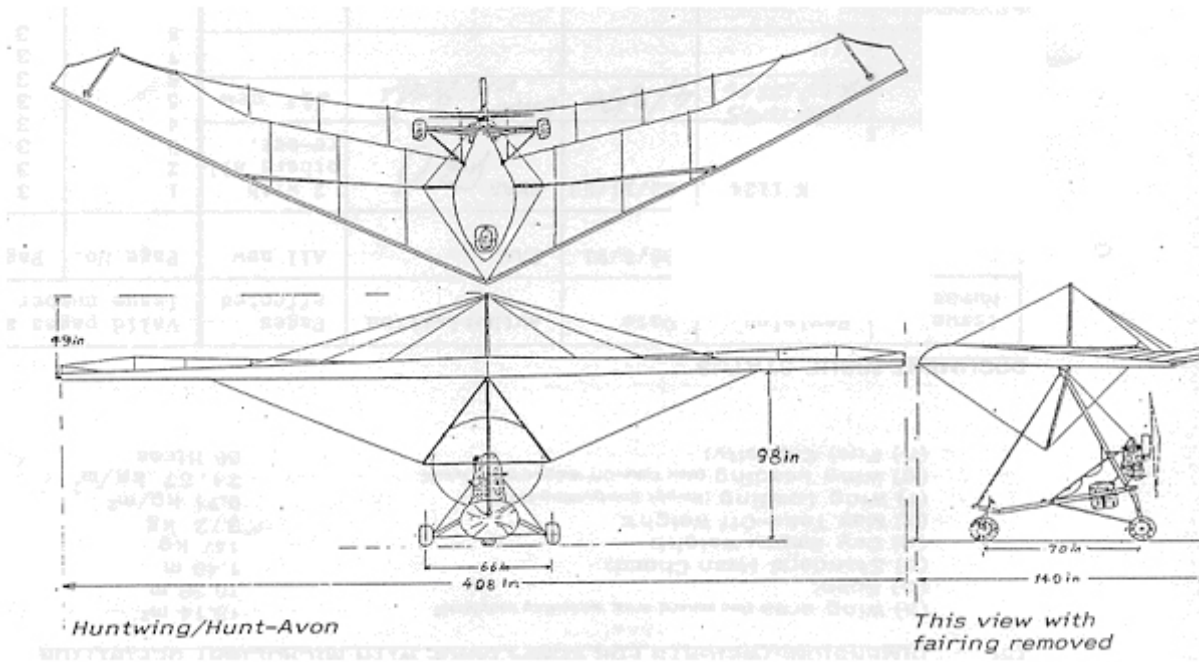


Figure 2 – Photograph of the Aircraft



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ANNEX A – MANDATORY MODIFICATIONS

Modifications

- |        |  |
|--------|--|
| S 786  | A placard must be installed requiring occupants to wear a safety helmet.   |
| S 967  | A fire resistant drip tray must be fitted below the upper fuel tank and arranged so that fuel spillage is drained clear of the engine. |
| S 995  | The fuel cock ON and OFF positions and fuel management operations must be placarded.   |
| S 1125 | For Rotax engine installations a double (90°) Rotax ball jointed exhaust pipe component must be fitted.                                |
| S 1141 | The wiring for the ignition switch must be fire resistant adjacent to the engine.  |
| S1307  | Fitment of rear seat upper shoulder harness. (Mandatory from 31 December 2001).  |
| S 1541 | Limitations must be placarded as shown in section 7 of these TADS.   |

Inspection

Special attention to the following areas should be given during inspections:-

- |       |  |
|-------|--|
| S 603 | The structure is to be in general conformance with the description in this TADS. Fittings and components within the wing sailcloth covering must be inspected for proper condition, in particular at the joints of the centre of the cross tube and at the connection of the cross tube to the leading edge tubes. |
| S 901 | Condition of engine flexible mounts and satisfactory spark plug retention.   |
| S 951 | Layout of fuel lines must not be such as to give rise to vapour locks.   |
| S 967 | Fuel tank retention straps are clean of oil contamination. Fuel tank installation is stable and cannot chafe.  |
| S995  | The fuel tank changeover or fuel cut-off control is to be demonstrated reachable by a small adult strapped into the front seat with a large adult strapped into the rear seat. This need be checked at first build or modification only.   |

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- S 1125 Free movement of exhaust system articulation joints and condition of retention springs; exhaust spring wire locking to be such that in the event of a spring failure, no spring can fall into the propeller or away from the aircraft.
- S 1145 Ignition switches must be positioned so that they can be easily located and operated by an occupant strapped into the front seat.

### ANNEX B - APPROVED OPTIONAL MODIFICATIONS

- 1 Permitted Fuel Tank Options
  - 1.1 Medway Raven-X 27 litre top-tank.with Medway supporting structure and drip tray.
  - 1.2 22 Litre motorboat tank below seat, subject to 56kg side-load test, 1.5psi pressure test and use of either Medway or Mainair twin-tank plumbing. [Combined with 1.1]
  - 1.3 49 Litre Pegasus Quantum single main tank (requires modification of drag-link geometry, consult aircraft designer).
  - 1.4 44 Litre Mainair Gemini trike double tank system (combined with upright engine).
  - 1.5 22 Litre Mainair Gemini trike front tank only.
- 2 Fitment of Pegasus nosewheel rubbing brake (as fitted to Pegasus trike)

### ANNEX C - WEIGHING INFORMATION

1. CG Datum: Not relevant (weight shift aircraft).
2. Weighing attitude: Unimportant (weight shift aircraft)
3. Mainwheel moment arm: Not relevant (weight shift aircraft).
4. Crew weights: Minimum 55 per seat (allow minimum 70 kg for solo flight)  
Maximum 90 kg per seat, 180kg total  
(maximum reducible, not below 86 kg per seat, if required).
5. Fuel Capacity: Varies, see individual aircraft MAAN.

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#### ANNEX D - EXAMPLE PLACARDS

(Precise placard format and layout is unimportant so long as all information is represented).

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

<u>Huntwing Avon [Engine] [Registration]</u>	
Never Exceed Speed:	75 kn / 86 mph IAS
Manoeuvring Speed :	45 kn / 45 mph IAS
Pitch Limits:	30° nose down, 30° nose up.
Bank angle limits:	+/- 60°
Empty Weight:	___ kg *
Max Take-Off Weight:	372 kg
Minimum Cockpit Weight:	70 kg
Maximum Cockpit Weight:	90 kg in each seat.*
Aerobatics prohibited.	

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

##### (b) 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. 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)

<u>FUEL</u>	
Capacity ___ Litres	
(40:1 2-stroke oil / 50:1 2 Stroke oil / do not add Oil)	
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).



**UNITED KINGDOM  
CIVIL AVIATION AUTHORITY**

**MPD No: 2001-010**

Issue Date: 21 November 2001

# **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: 2001-010 J A HUNT**

**Subject:** Upper torso restraint for passengers.

**Applicability:** J A Hunt Huntwing Avon and Hunt-Avon Blade 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 British Microlight Aircraft Association (BMAA) Microlight Airworthiness Approval Note (MAAN) 1579.

A copy of BMAA MAAN 1579 and further information can be obtained from:

British Microlight Aircraft Association  
Bullring  
Deddington  
Banbury  
Oxon  
OX15 0TT

Tel: 01869 338888  
Fax: 01869 337116  
Email: [cto@bmaa.org](mailto:cto@bmaa.org)

Record compliance with this MPD in the aircraft log book.

This MPD becomes effective on 23 November 2001.

Enquiries regarding this MPD should be made to the United Kingdom Civil Aviation Authority, Applications and Certification Section, Safety Regulation Group, Aviation House, Gatwick Airport South, West Sussex, RH6 0YR Telephone: +44(0)1293 573149 Telefax: +44(0)1293 573993.