

BRITISH MICROLIGHT AIRCRAFT ASSOCIATION
MICROLIGHT TYPE ACCEPTANCE DATA SHEET (TADS)

NO: BM08 ISSUE: 8

TYPE: PATHFINDER 1 / PATHFINDER Mk 1

- (1) MANUFACTURER: Huntair Ltd, Poynings, Brighton. (No longer trading).
 BMAA is responsible for continued airworthiness.
- (2) UK IMPORTER: n/a.
- (3) CERTIFICATION: BCAR Section S requirements listed in CAA document 9/30/UL18 dated 17 Jan 86.
- (4) DEFINITION OF BASIC STANDARD: See Annex C
- (5) COMPLIANCE WITH THE MICROLIGHT DEFINITION

- (a) MTOW 270 kg
 (b) Wing Area 14.87m²
 (c) No. Seats 1
 (d) Maximum Wing Loading 18.2 kg/m²
 (e) V_{so} n/a
 (f) Permitted range of pilot weights 45-91 kg.
 (g) Typical Empty Weight (ZFW) 155 kg
 (h) ZFW + Max.crew + full fuel (251) 264

(6) POWER PLANTS

Designation	Pathfinder 1 (a)	Pathfinder 1 (b)	Pathfinder 1 (c)	Pathfinder 1 (d)
Engine Type	Fuji Robin EC44PM inverted		Fuji Robin EC34PM inverted	
Reduction Gear	V or toothed belt .2.1:1		V or toothed belt 2.3:1	
Exhaust System	Nicklow or Aerotech		Rotaflow	
Intake System	Air filter fitted to carburettor.			
Propeller Type	Laminated wood			Laminated wood - Ritz square tip
Propeller Pitch	54" x 30"	54" x 32"	54" x 32"	54" x 32"
Noise Type Cert No.	78M issue 3		78M issue 1	78M issue 3
MAAN approving configuration	AAN 19926		AAN 19926 Addendum 1	

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(I) Power Plant See Table

Engine	EC34PM	EC44PM	EC44-2PM	Rotax 447
Max RPM*	7,500	7,800	7,000	6,800
Max CHT*	218°C			250°C
Max EGT*	n/a			650°C
Gearbox oil spec	n/a (belt reduction)			See gearbox manual
Fuel/Oil Mix	40:1 2-stroke oil			50:1 2-stroke oil

* if indicated.

(8) INSTRUMENTS REQUIRED FOR TYPE ACCEPTANCE:

ASI	Altimeter	RPM	EGT	Compass
Required min. 0-70kn	Required <i>(may be wrist mounted)</i>	optional	optional	optional

A stall warning system is also to be fitted and operable.

(9) CONTROL DEFLECTIONS:

Elevator UP:	15" / 30°	Rudder LEFT:	15"
Elevator DOWN:	8.25" / 15°	Rudder RIGHT:	15"
Ailerons UP	4"	Steering LEFT:	40°
Ailerons DOWN	15"	Steering RIGHT:	40°

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

10.1 Manuals approved for use with this aircraft.

- (a) "Pathfinder Manual"
- (b) Microlight Maintenance Schedule MMS-1.
- (c) This TADS.

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10.2 The following placards are to be fitted:-

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

The Following limitations are to be placarded in view of the pilot:-

- MTOW
- CG limits.
- Cockpit loading limits.
- Vne (in the same units as the ASI)
- Va (in the same units as the ASI)
- Manoeuvre limitations.

(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)

A placard is to be fitted showing fuel capacity, fuel type(s), and fuel:oil ratio.

(f) Switches


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

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

See Annex B to this TADS.

(12) MINIMUM PERFORMANCE AT MAX TAKE-OFF WEIGHT

Rate of Climb: 430 fpm
Stall or Minimum Flying Speed: 22 kn (25 mph) IAS

BMAA Approval:		G B Gratton Chief Technical Officer	10 August 2000
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Issue History

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| Issues 1, 2 | AAN 19926 |
| Issue 3 | AAN 19926 addendum 1, introduction of 2.3:1 and 2.86:1 reduction drives. |
| Issue 4 | Editorial changes only. 18 / 12 / 1989. |
| Issue 5 | 2.6:1 reduction added (MAAN 1065). 8 / 5 / 1991 |
| Issue 6 | Introduction of W&CG information, increase of MTOW from 250kg to 270 kg. (MAAN 1130 issue 1). 5 / 1 / 1995. |
| Issue 7 | Clarification of W&CG information, editorial changes, introduction of Rotax 447 engined variant. (MAAN 1130 issue 2). 4 / 8 / 1999, deletion of non-existent configurations for which no supporting approval could be found. |
| Issue 8 | Modified W&CG information to reflect variation between aircraft. |

Illustration of Aircraft

(illustration omitted from electronic version of TADS)

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ANNEX A
WEIGHING INFORMATION

1. Weighing attitude: Mainwheels 75mm above nosewheel
2. CG Datum: Front of lower wing keel tube (1200mm fwd of wing leading edge).
3. Mainwheel moment arm: 1710 - 1740 mm aft of datum
4. Nosewheel moment arm: 0 - 50mm aft of datum
5. Fuel moment arm: 1180 - 1200mm aft of datum
6. Fuel load: Variable, not exceeding 25 litres
7. Pilot moment arm: 750 - 810mm aft of datum
8. Minimum cockpit weight: 45kg
9. Maximum cockpit weight: 91kg
10. Aft CG Limit: 1562mm aft of datum
11. Fwd CG Limit: 1422mm aft of datum

Notes:

1. Individual aircraft have been found to vary; if not recorded in the aircraft logbook, it is vital that inspectors physically check the moment arm on an aircraft being weighed.
2. Minimum seat weight may be increased, not above 55kg, to remain within CG limits for an individual aircraft.
3. Maximum total seat weight may be reduced, not below 86kg, to remain within W&CG limits for an individual aircraft.
4. If seat weights are changed, this must be clearly indicated by a logbook entry and changing the cockpit placards.

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ANNEX B
MANDATORY MODIFICATIONS AND INSPECTION

<u>Reference</u>	<u>Modifications Required</u>
S605	The front upright main fuselage tube (that is the forward tube of the two which connect between the base keel and the upper boom) is to be replaced with a new tube of similar specification but with a full length sleeve added (Questair mod QP1-1 also refers).
S901	The reduction drive output shaft for Fuji engined variants must be replaced with material to EN15T or satisfactory equivalent. The transverse hole is to be round. In addition, the light alloy bearing spacer tube must be replaced with a commercial mild steel tube of at least 16 gauge (or 17 gauge to BS3T53 or 4T45).
S993	fire resistant fuel line(s) must be fitted for a distance of at least 45cm (18 inches) from the engine and routed as far as possible on the opposite side of the engine to the exhaust.
S995	A fuel cock is to be installed within easy reach of the pilot and clearly marked with ON and OFF positions, with positive stops or detents to ensure correct selection.
S1141	The wiring for the ignition switch must be fire resistant adjacent to the engine or located so that in the event of an engine fire the engine can be stopped. NOTE: Ignition wiring located forwards of fuel carrying components is considered to satisfy this requirement.
S1303	Where an altimeter is not permanently installed, a wrist mounted altimeter is acceptable; in such cases a placard must be installed stating clearly that a wrist mounted altimeter is required.

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Inspection

Particular attention should be paid during inspection of the Pathfinder 1 to the following areas:-

1. Fittings and structural interconnection (Examine whilst applying manual loads to the airframe).
 - Attachment of vertical tubes to fuselage main (boom) tube.
 - Flying and landing wire attachments.
 - Lower drag rube to keel attachment.
 - Clevis pin attachment for suspension assembly to undercarriage leg.
2. Check for cracking of front vertical tube at the engine attachment point.
3. Check lower engine mounting for correct location in the tube. The mounting may be modified so that a “shoe” is provided to fit snugly to the base keel with hard rubber or leather packing, or modified in accordance with Questair mod. QP1-12.
4. The lower fuel tank support bracket fitting over the keel tube is to be checked to ensure that the weight of the tank is evenly distributed and that it holds the tank clear of any possible interference with the control cables.

ANNEX C

NOTES ON THE DESIGN STANDARD

A formal design standard has not been established for the Pathfinder 1, however the following information shows minimum dimensions and material specifications which should apply to any example of the type:-

- (a) All light alloy structural tubular components are 6082 T6 or HT30TF seamless drawn alloy.
- (b) The main boom tube is 4” x 18 gauge, 192 inches long with internal spar blocks at: 0”, 5”, 23”, 28” aft of the forward end; also spar blocks at 0”, 27.7” and 41.75” forward of the rear end. The boom tube is wire braced from the rear, from approximately the forward edge of the ventral fin.
- (c) The base keel tube is 2.1/8” x 17 gauge with local re-enforcing sleeves of 2” x 17 gauge.
- (d) The front upright tube is 2.1/8” x 17 gauge and incorporates local polypropylene plugs at the attachment points.
- (e) The front and rear wing spars are 2.1/8” diameter x 17 gauge inboard and 2” x 17 gauge outboard. The inboard section extends to approximately 8” beyond the wire bracing location; the outboard section extends into the inboard section by approximately 16”. The inboard ends of the spar assemblies include a local internal tubular sleeve and solid spar block, providing additional bearing surface and crushing resistance.