

**BRITISH MICROLIGHT AIRCRAFT ASSOCIATION**

**TYPE ACCEPTANCE DATA SHEET (TADS)**

**NO: BMO10 ISSUE: 4**

TYPE: SKYRIDERS PHANTOM

- (1) MANUFACTURER: Phantom Aircraft Co., 6154 West "G" Ave, MI 49009 Kalamazoo, USA.
- (2) UK IMPORTER: No longer trading. BMAA is responsible for continued airworthiness.
- (3) CERTIFICATION: BCAR SECTION S, (in the modification state at the date of manufacture or modification of any example), as amended by established type acceptance practice.
- (4) DEFINITION OF BASIC STANDARD: Not available.
- (5) COMPLIANCE WITH THE MICROLIGHT DEFINITION

- (a) MTOW 260 Kg
- (b) No. Seats 1
- (c) Maximum Wing Loading 19.4 kg/m<sup>2</sup>
- (d) V<sub>so</sub> NK, NR
- (e) Permitted range of pilot weights 55 - 95 kg
- (f) Typical Empty Weight (ZFW) 150 Kg
- (g) ZFW + 86 kg pilot + full fuel (litres / kg) 254 Kg
- (h) Max ZFW at initial permit issue 159 kg

(6) POWER PLANTS

Designation	Phantom	Phantom	Phantom	
Engine Type	Fuji Robin EC44PM upright	Fuji Robin EC34PL upright	Fuji Robin EC40PL upright	
Reduction Gear	2.5:1 belt	3.3:1 belt	3.0:1 belt	
Exhaust System	Nicklow / aerotech exhaust and after muffler			
Intake System	K&N filters			
Propeller Type	Davis square tip wood	Aerotech square tip wood	Newton round top wood	
Propeller Dia x Pitch	60"x30"	62"x36"	62" x 42"	
Noise Type Cert No.	64M issue 2	64M issue 2	144M issue 1	
MAAN approving configuration	NK	NK	1154	

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(7) MANDATORY LIMITATIONS:

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|---------------------------------|--|
| (A) Max Take-Off Weight         | 260 kg   |
| (B) CG Limits                   | Aft limit      21.2" Aft of datum<br>Fwd Limit      18.1" Aft of datum |
| (C) CG datum                    | (see Annex D)  |
| (D) Cockpit Loadings            | Min                      55 kg<br>Max                      95 kg       |
| (E) Never Exceed Speed          | 86 kn / 100 mph IAS  |
| (F) Manoeuvring Speed           | 52 kn / 60 mph IAS   |
| (G) Permitted Manoeuvres        | Non Aerobatic<br>Normal acceleration limits, +4 / -2g                  |
| (H) Fuel Contents (Max Useable) | Varies between aircraft.   |

(I) Power Plant

Engine	EC44PM	EC34PL	EC40PL	
Max RPM	7,500	6,500	7,500	
MAX CHT				
MAX EGT				
Fuel Spec	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.			
Engine Oil Spec	Non-detergent 2-stroke oil			
Gearbox oil spec	N/A (belt reduction)			
Fuel/Oil Mix	40:1			

(8) INSTRUMENTS REQUIRED:

ASI	Altimeter	RPM	CHT / EGT	Compass	Fuel Pressure	VSI	Slip ball
Required (to 86 kn / 100 mph min.)	Required	All optional.					

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**(9) CONTROL DEFLECTIONS:**

Elevator UP:	230 ± 20mm at max chord	Nosewheel steering LEFT:	20 ± 2°
Elevator DOWN:	170 ± 20mm at max chord	Nosewheel steering RIGHT:	20 ± 2°
Ailerons* UP:	180 ± 20mm at root	Rudder LEFT:	260 ± 20mm at max chord
Ailerons* Down:	180 ± 20mm at root	Rudder RIGHT:	260 ± 20mm at max chord

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

**10.1 Manuals approved for use with this aircraft**

- (a) No operators manual available.
- (b) Maintain to schedule MMS-1 (contained in BMAA TIL 020)

**10.2 The following placards are to be fitted:**

- (a) Flight Limitations Placard (to be visible to pilot)  
See Annex E.
- (b) Engine Limitations Placard (to be located near to engine instruments)  
See Annex E.
- (c) Fuel Limitations Placard (to be located near to filler cap)
- (d) Switches  
See Annex E.


**(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: 500 fpm at 45 mph (39kn) IAS.  
Stall or Minimum Flying Speed: 30 mph (26kn) IAS at MTOW / idle.

BMAA Approval:		J A F Viner Chief Technical Officer	16 January 2008
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Issue History

Issue No.	Reason and signatory
1	Initial issue, F J Tucker (CAA), 2 Dec 1988
2	Added configuration, F J Tucker (CAA), 27 Feb 1989
3	Added configuration (MAAN 1154), W&CG data, G B Gratton (BMAA), 26 Sept 2002
4	Correction of cg limits (erroneously reversed), J A F Viner (BMAA), 16 Jan 2008

Illustration of Aircraft - Drawing

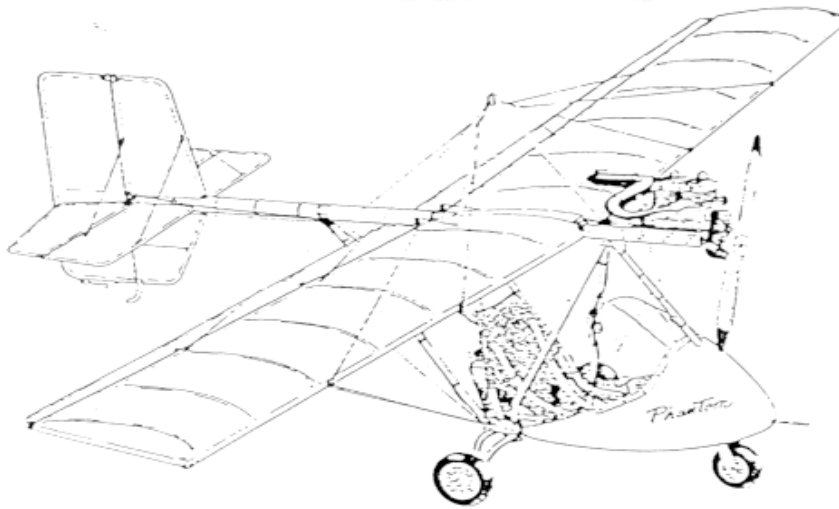
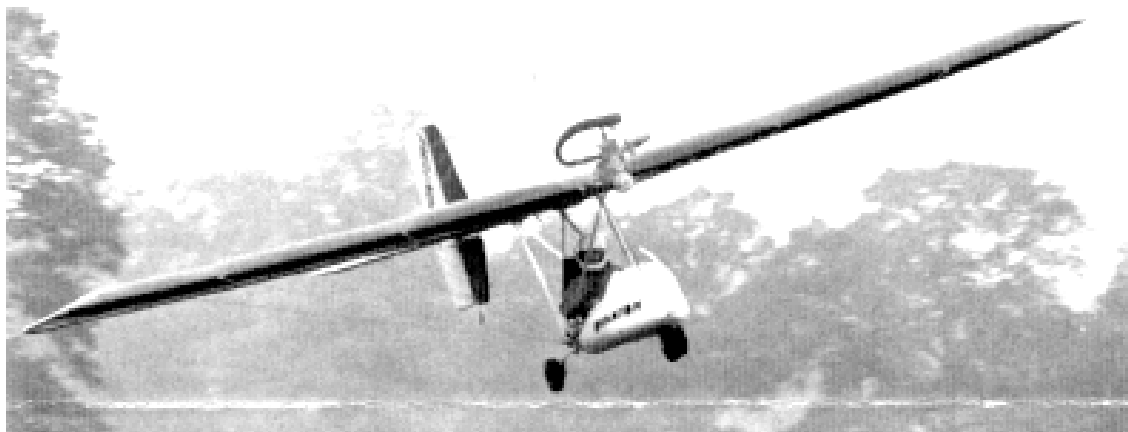


Illustration of Aircraft - Photograph



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ANNEX A – MANDATORY MODIFICATIONS

(Note: References given below are changed from issue 2 of HM10 and preceding FS004)

1. Use of fire-resistant fuel line and ignition lines near engine i.a.w. BMAA TIL 007.

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.

1. Installation of secondary elevator control (originally available as manufacturers option).
2. Installation of return springs or bungees to maintain rudder pedals in normal operating position when foot pressure is released.

ANNEX C – POINTS FOR SPECIAL ATTENTION

In service, the following points have been found to be commonly recurring problems, and Inspectors must give special attention to the following both during initial type-acceptance, and during later inspections.

1. Cracks in welding on Teleflex cable bracket at tail main fuselage tube attachment.
2. Loosening of self locking nuts on control hinges.
3. Condition of nosewheel bearing
4. Condition of control surface attachment bolts
5. Contamination and subsequent deterioration of fuel tank webbing straps
6. Wear in elevator joint inside tailboom
7. Freeplay in pinch bolt retaining elevator Teleflex cable in aileron torque tube.
8. Distortion of kingpost top wire attachment bolt
9. Minimum 25mm clearance between rudder and elevator surfaces.
10. Adequate clearance between exhaust and wing upper surface

ANNEX D - WEIGHING INFORMATION

1. CG Datum: Wing leading edge at root
2. Weighing attitude: 3 wheels on horizontal surface
3. Mainwheel moment arm: 32" AoD
4. Nosewheel moment arm: 27" FoD
5. Fuel moment arm: 33" AoD
6. Crew moment arm: 16.5" AoD
7. Crew weights: Minimum 55 kg / maximum 95 kg  
(maximum reducible, not below 86 kg, if required).
8. Aft CG Limit: 21.2" AoD
9. Fwd CG Limit: 18.1" AoD

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ANNEX E

EXAMPLE PLACARDS

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

Exact placard is not mandatory, so long as all information shown is clearly displayed to the pilot.

Phantom	
Never Exceed Speed:	100 mph IAS
Manoeuvring Speed :	60 mph IAS
Stall Speed:	30 mph IAS
Best climb speed:	45 mph IAS
<b>Non aerobatic</b>	
Normal Acceleration Limits:	+4 / -2g
Empty Weight:	_____ kg *
Max Take-Off Weight:	260 kg
Minimum Cockpit Weight:	55 kg
Maximum Cockpit Weight:	95 kg in each seat.*
Aerobatics and deliberate spinning 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)

FUEL
Capacity 25 Litres*
40:1 2-stroke 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

\* Or otherwise as per individual aircraft.

(d) Switches

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