

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

NO: BM045 ISSUE: 3

TYPE: "MIRAGE" MK1 AND MK2, "MIRAGE" (Perring Tractor Conversion).

- (1) MANUFACTURER: ULTRALIGHT FLIGHT INC, USA
- (2) UK IMPORTER: None, Type Specialist L. Perring. 56 Green Lane, Radnage, High Wycombe, Bucks, HP14 4DN
- (3) CERTIFICATION: BCAR SECTION S, (in the modification state at the date of manufacture or modification of any example)
- (4) DEFINITION OF BASIC STANDARD: This TADS and MAANS 1217 and 1218.
- (5) DIMENSIONS/WEIGHT FOR COMPLIANCE WITH MICROLIGHT DEFINITION

(a) Wing area (inc canard area, excluding winglets):	10.7 m ²
(b) Span:	10.06 m ²
(c) Standard Mean Chord:	1.36 m
(d) Dry Empty Weight (standard aircraft):	125 kg
(e) Max Take-Off Weight:	235 kg
(f) Wing Loading (Weight Empty/Wing Area):	10.65kg/m ²
(g) Wing Loading (Max Take-Off Weight/Wing Area):	20.7 kg/m ²
(h) Number of seats:	One
(i) Established Maximum power	40 hp

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(6) POWER PLANTS

Designation	Mirage (1)	Mirage (2)	Mirage (3)	
Engine Type	Cuyuna 428	Kawasaki TA440	Rotax 447	
Reduction Gear	2:1 V-belt	2:1 V-belt	Rotax B-type 2.58:1	
Exhaust System	Cuyuna	Ultralight Flight	Rotax	
Intake System	-	-	-	
Propeller Type	Microprop Pusher	Newton Pusher	GSC Tech 2 2-blade tractor	
Propeller Dia x Pitch	58" x 28"	52" x 36"	62" x 35"	
Noise Type Cert No.	105M iss 1	105M iss 2	105M iss 3	

(7) MANDATORY LIMITATIONS: * To be placarded

- (A) Max Take-off Weight: 235 kg *
- (B) CG Limits: 368 to 419mm aft of datum
(27% to 31% MAC)
Optimum 393mm aft of datum (29% MAC)
- (C) CG datum: Wing leading edge
- (D) Cockpit Loadings:
- | | Front | Rear | Total |
|------------------------------------|-------|------|---------|
| Pilot and Baggage or Ballast (Min) | 55kg | - | 55kg * |
| Pilot and Baggage (Max) | 90 kg | - | 90 kg * |
- (E) Permanent Ballast, Weight and Position: none
- (F) Empty CG: Approx. 458mm aft of datum
- (G) Never Exceed Speed: 65 mph (56 kn) *
- (H) Manoeuvring Speed: 55 mph (48 kn) *

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(I) Permitted Manoeuvres: Non Aerobatic. *

(J) Fuel Contents (Max Useable): 25 litres*

(K) Power Plant

Engine	Kawasaki TA440	Rotax 447	Cuyuna 428	
Max RPM	6500	6900	6500	
MAX CHT	-	250 °C	-	
MAX EGT	-	-	-	
Fuel Spec	Petroleum Spirit	Petroleum Spirit	Petroleum Spirit	
Engine Oil Spec	2-stroke oil	2-stroke oil	2-stroke oil	
Gearbox oil spec	-	-	-	
Fuel/Oil Mix	40:1	50:1	40:1	

(8) INSTRUMENTS REQUIRED FOR TYPE ACCEPTANCE:

ASI	Altimeter	RPM	CHT	EGT	Compass
Hall or Dwyer wind-meter	Required (Wrist mounted acceptable)	optional	optional	optional	optional

(9) CONTROL DEFLECTIONS:

Elevator UP	30° (+5° / -3°)	Elevator Trim	none
Elevator DOWN	37° (± 3°)	Steering / Spoilers	none
Ailerons UP	none	Rudder LEFT	37° (± 3°)
Ailerons DOWN	none	Rudder RIGHT	37° (± 3°)

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

Ultralight Flight Owners and Operators Manual.

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

See document FS007 and Annex A to this TADS.

(12) MINIMUM PERFORMANCE AT MAX TAKE-OFF WEIGHT

Rate of Climb: 400 fpm (based upon Kawasaki Engine)
Stall or Minimum Flying Speed: 28 mph (24 kn) IAS

(13) RIGGING DETAILS

Dihedral: Each wing 6° up from the horizontal plane
Washout: 0° to ½°. Washout effect produced by tip design.
Tailplane: Incidence -5° to -8° relative to mainplane.

BMAA Approval:		G B Gratton Chief Technical Officer	6 October 1998
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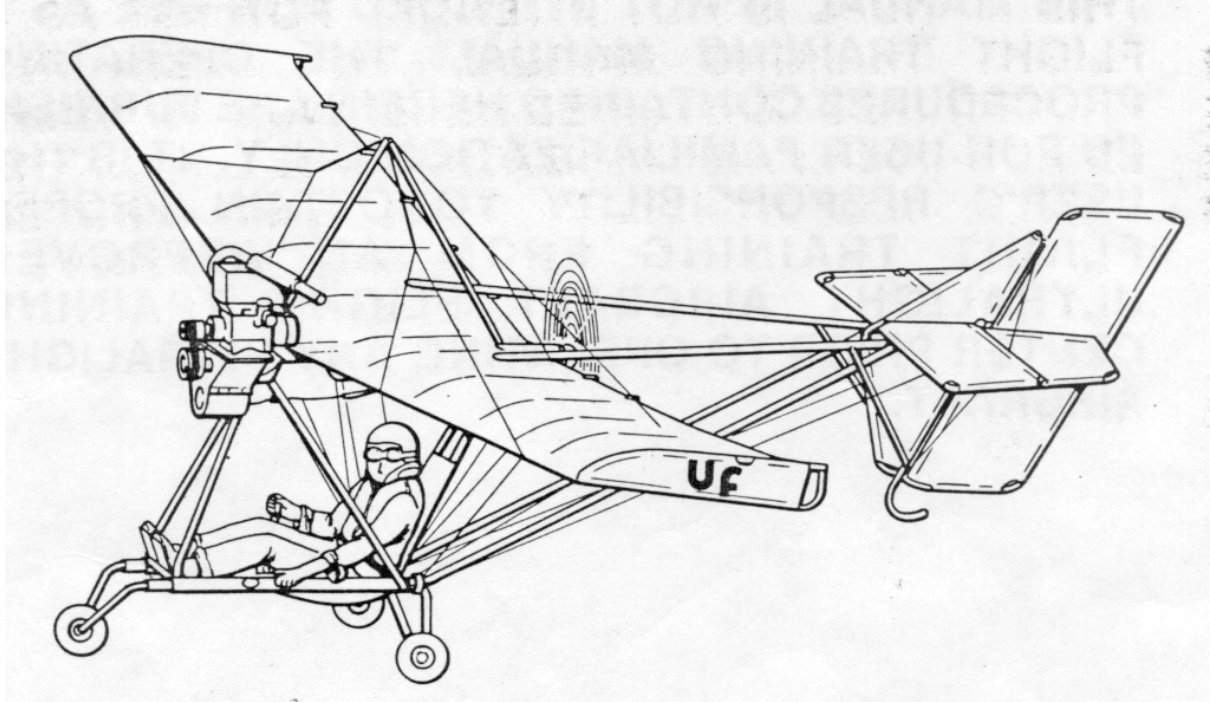
Issue History

- Issue 1 Original issue
- Issue 2 Addition of propeller data and noise certificate for Rotax 447 tractor version. Signatory WG Brooks, CTO, BMAA.
- Issue 3 Clarification of rigging details. Signatory G B Gratton, CTO, BMAA.

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Illustration of Aircraft



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ANNEX A

MODIFICATIONS REQUIRED IN ADDITION TO BMAA DOCUMENT FS007

- 1) Cable guides to be secured against sliding into control pulleys.
- 2) Control pulley guards to be checked that rotation of the guard causing cable fouling is not possible.
- 3) Cable guides or fairleads are required on the rear fuselage booms.
- 4) The keel must be carefully checked for cracks around the engine mountings and shaft bearing supports. (pusher version only).
- 5) The propeller attachment must be checked for security every 5 hours. (Pusher version only).
- 6) Rudder cables must be checked to be at least 2mm diameter, and not over 2.5mm diameter, 7x7 galvanised or stainless steel wire rope.
- 7) Rudder pedal stops must be provided, capable of withstanding a foot load of 90kgf without deformation (S397).
- 8) Elevator cables must be checked to be at least 2mm diameter, and not over 2.5mm diameter, 7x7 galvanised or stainless steel wire rope.
- 9) An undercarriage spreader cable of at least 2.5mm diameter must be fitted.
- 10) The tailplane trailing edge must be packed to achieve a hands off trim speed between 1.3 and 2 x stall speed. Alternatively a trim tab 300 x 100 mm may be fitted to the elevator trailing edge and adjusted to achieve the correct trim speed.