

CIVIL AVIATION AUTHORITY

MICROLIGHT TYPE APPROVAL DATA SHEET (TADS)



NO: BM 66 ISSUE: 9

TYPE:

Pegasus Quik

- (1) MANUFACTURER: P & M Aviation Ltd Ltd, Unit B, Crawford St, Rochdale, Lancashire, OL16 5NU
- (2) UK IMPORTER: N/A
- (3) CERTIFICATION: BCAR Section S Issue 3 dated August 2003
- (4) DEFINITION OF BASIC STANDARD: Type Approval Submission PG368
- (5) COMPLIANCE WITH THE MICROLIGHT DEFINITION

(a) MTOW	409 kg
(b) No. Seats	2
(c) Maximum Wing Loading	38.6 kg/m ²
(d) V _{so}	38 mph CAS
(e) Permitted range of pilot weights	55-110 kg front seat
(100kg limit also approved)	0-110 kg rear seat
Total maximum crew weight	200 kg
(f) Typical Empty Weight (ZFW)	205kg
(g) ZFW + 172 kg crew + 1 hr fuel	390kg
(18 litres / 13 kg)	
(h) ZFW + 86 kg pilot + full fuel	325kg
(47.4 litres / 34 kg)	
ZFW + 86 kg pilot + full fuel	338kg
(65 litres / 47 kg)	
(i) Max ZFW at initial permit issue	224 kg

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(6) POWER PLANTS

Designation	<i>Rotax 912 ULS</i>	<i>Rotax 912 ULS</i>	<i>Rotax 912 UL</i>	<i>Rotax 912 UL</i>
Engine Type	<i>4 cylinder 4 stroke</i>	<i>4 cylinder 4 stroke</i>	<i>4 cylinder 4 stroke</i>	<i>4 cylinder 4 stroke</i>
Reduction Gear	<i>2.43:1 gearbox</i>	<i>2.43:1 gearbox</i>	<i>2.27:1 gearbox</i>	<i>2.27:1 gearbox</i>
Exhaust System	<i>Rotax side mounted</i>	<i>Rotax side mounted</i>	<i>Rotax side mounted</i>	<i>Rotax side mounted</i>
Intake System	<i>K&N intake filter With Cyclone hot coil intake heater or Skydrive carb body heater</i>	<i>K&N intake filter With Cyclone hot coil intake heater or Skydrive carb body heater</i>	<i>K&N intake filter With Cyclone hot coil intake heater or Skydrive carb body heater</i>	<i>K&N intake filter With Cyclone hot coil intake heater or Skydrive carb body heater</i>
Propeller Type	<i>Arplast Ecoprop 170/135/L/3</i>	<i>Warp Drive Sq tip 3 blade</i>	<i>Arplast Ecoprop 167/104/L/3</i>	<i>Warp Drive Sq tip 3 blade</i>
Propeller Dia x Pitch	<i>170cm, 27° at 53.5 cm radius</i>	<i>172cm, 16° at tip</i>	<i>167cm, 20° at 53.5 cm radius</i>	<i>172cm, 11° at tip</i>
Noise Type Cert No.	<i>183M Issue 3</i>	<i>183M Issue 3</i>	<i>183M Issue 3</i>	<i>183M Issue 3</i>
AAN approving configuration	<i>AAN28475</i>	<i>BMAA-AAN-1005</i>	<i>BMAA-AAN-1002</i>	<i>BMAA-AAN-1006</i>

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Engine Type	<i>4 cylinder 4 stroke</i>	<i>4 cylinder 4 stroke</i>	<i>4 cylinder 4 stroke</i>	<i>4 cylinder 4 stroke</i>
Reduction Gear	<i>2.43:1 gearbox</i>	<i>2.27:1 gearbox</i>	<i>2.43:1 gearbox</i>	<i>2.27:1 gearbox</i>
Exhaust System	<i>CKT twin exhaust</i>	<i>CKT twin exhaust</i>	<i>CKT twin exhaust</i>	<i>CKT twin exhaust</i>
Intake System	<i>K&N intake filter With Cyclone hot coil intake heater or Skydrive carb body heater</i>	<i>K&N intake filter With Cyclone hot coil intake heater or Skydrive carb body heater</i>	<i>K&N intake filter With Cyclone hot coil intake heater or Skydrive carb body heater</i>	<i>K&N intake filter With Cyclone hot coil intake heater or Skydrive carb body heater</i>
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Noise Type Cert No.	<i>183M Issue 3</i>	<i>183M Issue 3</i>	<i>183M Issue 3</i>	<i>183M Issue 3</i>
AAN approving configuration	<i>BMAA-AAN-1019</i>	<i>BMAA-AAN-1019</i>	<i>BMAA-AAN-1019</i>	<i>BMAA-AAN-1019</i>

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(7) MANDATORY LIMITATIONS:

(A) Max Take-Off Weight	409 kg		
(B) CG Limits	<i>N/A not critical, flexwing with defined hang point position on keel</i>		
(C) CG datum	See Annex C		
(D) Cockpit Loadings (Solo from front seat only)	Front	Rear	Total
	Min 55 kg	0	55 kg
(100kg Limit Also Approved)	Max 110 kg	110 kg	200 kg
(E) Never Exceed Speed	115 mph IAS		
(F) Manoeuvring Speed	80 mph IAS		
(G) Permitted Manoeuvres	45° Nose up / 45° nose down Non Aerobatic, max bank 60° Normal acceleration limits, +4 / -0g		
(H) Fuel Contents (Max Useable)	47.4 l		
(H) Contents (Max Useable) Mod M130	65 l		

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(I) Power Plant	See Table	
Engine	Rotax 912 UL-S	<i>Rotax 912 UL</i>
Max RPM	5800 for 5mins 5500 continuously	<i>5800 for 5mins 5500 continuously</i>
MAX CHT	135°C **	<i>150°C **</i>
MAX EGT	800°C	<i>800°C</i>
Fuel Spec	<i>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.*</i>	
Engine Oil Spec	API SF or SG semi synthetic 4 stroke motorcycle engine oil.	<i>API SF or SG semi synthetic 4 stroke motorcycle engine oil.</i>
Gearbox oil spec	Common supply with engine	<i>Common supply with engine</i>
Fuel/Oil Mix	N/A	<i>N/A</i>
Coolant Temperature	135°C	<i>150°C</i>
Oil Pressure	7 bar max (after cold start) 2-5 bar above 3500 rpm 0.8 bar min below 3500 rpm	<i>7 bar max (after cold start) 2-5 bar above 3500 rpm 0.8 bar min below 3500 rpm</i>
Oil Temperature	50-130°C	<i>50-140°C</i>
<i>Fuel Pressure</i>	<i>0.15-0.4 bar</i>	<i>0.15-0.4 bar</i>

*Unleaded preferred. See Operator's Manual for limitations on AVGAS.

**With 100% Ethylene Glycol or Evans NPG coolant, see SB121

(8) INSTRUMENTS REQUIRED:

ASI	Altimeter	RPM	CHT / EGT	Compass	Coolant temp	Fuel Pressure	VSI	Oil Temp	Oil Pressure	Slip ball
Required (0-150mph.)	Required 0-20,000 ft	0-6000	50-150°C 375-925°C	Optional	Measured by CHT sensor	Optional	Optional	50-150°C	0-8 bar	N/A 2 axis control

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(9) CONTROL DEFLECTIONS:

N/A, weight shift control limits defined by structure geometry.

Control bar move right =	roll left
Control bar push out =	pitch up
Tighten trim cable =	slow trim
Push left pedal =	taxi steering right
Push left toe =	brakes on
Push right toe =	throttle open
Hand throttle forward =	throttle open
Ignition switches up =	switch on
Choke forward =	choke on
Tap aligned with body =	fuel on

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

10.1 Manuals approved for use with this aircraft.

(a) Pegasus Quik Operator's Manual, as Amended (later issues may be in use)

Issue 1 (Rotax 912ULS engines only),

Issue 2 (Rotax 912ULS and 912UL engines)

Issue 3 (All powerplants, introducing Warp Drive propeller option)

Supplement M130 for 65L tank option.

Issue 4, all the above features and introducing Mod. 138, electric trim

Issue 5, max seat load of 110kg

(b) Rotax 912UL or UL-S Operator's manual as appropriate

(c) Rotax 912UL or UL-S Maintenance Manual as appropriate

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)

The engine limitations are programmed into the Rotax FLYDAT Engine Indication System and the engine parameter indication will flash if a limitation of that parameter has been exceeded.

Analogue Instruments have limit markings in red.

(c) Fuel Limitations Placard (to be located near to filler cap)

See Annex D.

(d) Switches

See Annex D.

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MANDATORY MODIFICATIONS / SERVICE BULLETINS / AIRWORTHINESS DIRECTIVES ETC:

<u>Service Bulletin</u>	<u>Decription</u>	<u>Notes</u>	<u>Issued</u>
SB112	Trim cord	Trim cord now attached to clevis pin on trim mech.	06/01/03
SB113	Engine mount spacer	To increase prop/keel axial clearance to 170+mm	28/4/03
SB114	Kingpost base	Shackle fitted to ensure engagement	25/6/03
SB116 issue 1	Control frame top rivets	To ensure security of top fittings	10/05/04
SB116 issue 2	Control frame top rivets	To ensure security of top fittings	23/09/04
SB118	Oil cooler suction hose	Wirelock hose in position	02/09/04
SB120	Uprights	Factory inspection/replacement	25/07/05
SB121	Cooling system	Radiator inspection, coolant	12/06/06
SB122	Keel	Inspection, bush and sleeve	17/07/06
SB127	CKT Twin Exhausts	Check for cracking	08/09/09
SB132 Issue 4	Sail Reinforcement Test	Brookstesting	18/06/13

See Annex A for required modifications.

Annual Bettometer test with a 1.2mm diameter needle, with wing sails fitted and tensioned enough to prevent puckering of sailcloth at the needle, is to be carried out to in accordance with Service Bulletin 133 issue 3.

Applied loads:

Upper & lower surface: 1360 grammes, for wings with Yellow Aramid Reinforcement.

Or

Upper & lower surface: 1000 grammes, for wings with Black Technora reinforcement.

Loads to be applied spanwise and chordwise.

Stitches: 1360 grammes using a 1.2mm diameter hook, pull at 90degs to surface of tensioned sail.

Annual Brooksmeter test after first 2 years, using Brooksmeter, on untensioned wing trailing edge is to be carried out in accordance with Service Bulletin 132 issue 4.

Applied loads:

Aramid X-05 Yellow sail reinforcement: 9kgf

or

Technora Black sail reinforcement: 8kgf

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(12) MINIMUM PERFORMANCE AT MAX TAKE-OFF WEIGHT

Rate of Climb (Rotax 912 UL, 912 UL-S): 845 fpm at 57 mph IAS.

Rate of Climb (912 ULS, Warp Drive): 1200 fpm at 55 mph IAS.

Stall or Minimum Flying Speed: 37 mph IAS at MTOW / idle.

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Issue History

<u>Issue No.</u>	<u>Reason and signatory</u>
1	06/12/02 Initial Issue
2	Change of manufacturer address
3	Introduction of Rotax 912 engine
4	Introduction of Warp Drive propeller option
5	Mod M130 65L tank, telescopic front suspension
6	Mod M138, Electric trim, P & M Aviation
7	Mods including M162, CKT exhaust/Cooling pack
8	Mod 150 110kg Seat Load D S CORTIZO
9	18/03/15 Betts & Brooks Test Limits Amended & General Update

A C LOVE

A handwritten signature in blue ink, appearing to read 'A C LOVE', written over the printed name.

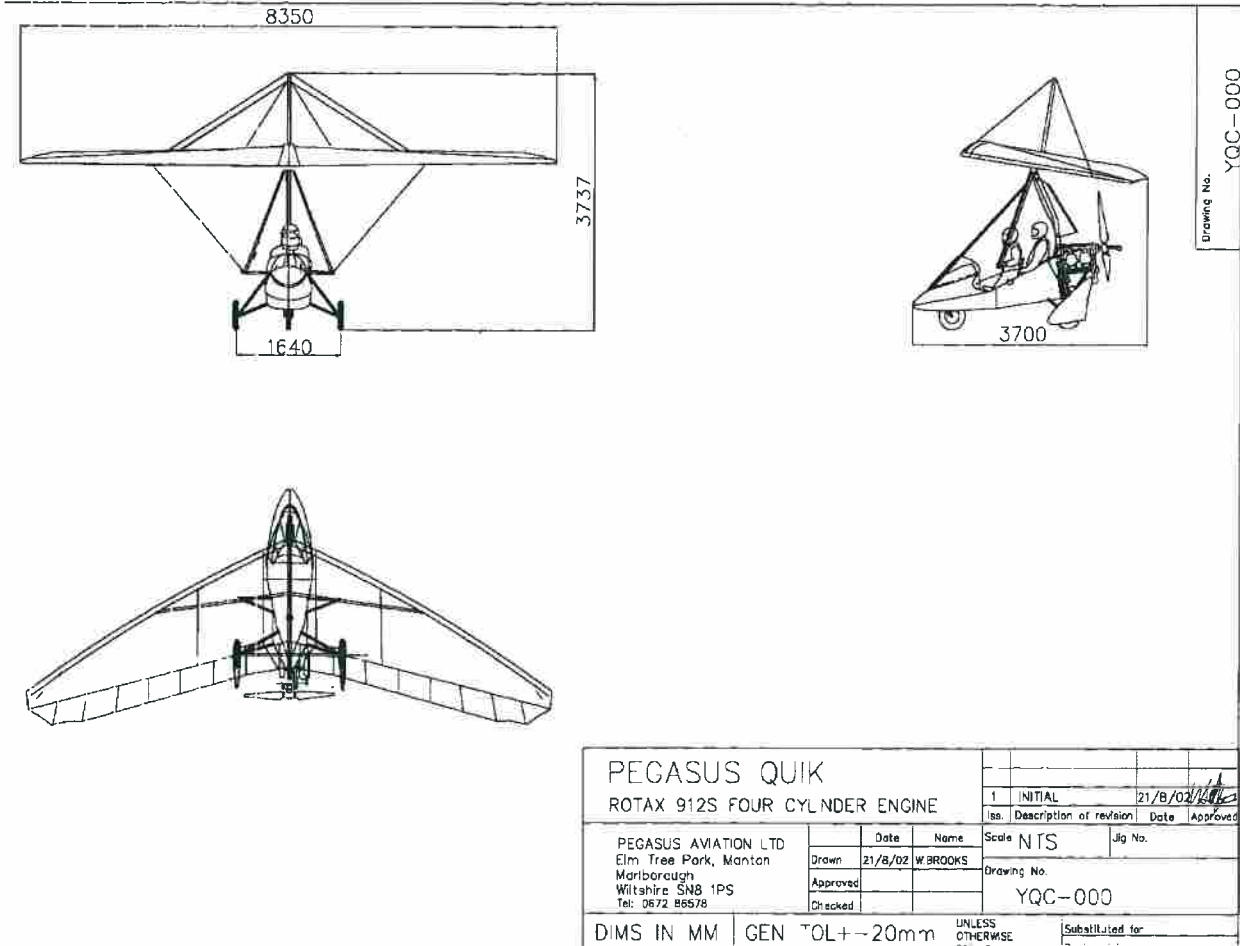
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Illustration of Aircraft - 3 View



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ANNEX A – MANDATORY MODIFICATIONS

1. **CAA Mandatory modifications:**

M100	Front engine mount 10mm spacer	Up to s/n 7951, SB113, MPD 2003- 006	27/4/03
M104	Kingpost base shackle	Up to s/n 7966,SB114, MPD 2006-012	25/6/03
M124	Upright top rivets	Up to s/n 8037, SB116 iss 1&2, SB120, MPD 2004- 009R2 and MPD 2005-007	12/05/04
M126	Oil suction hose	Up to s/n 8074,SB118,MPD 2004-012	02/09/04
M139	Keel CG hole bush	Up to S/N 8184. See SB 122,MPD 2006- 010	06/04/05



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.

<u>Mod Ref</u>	<u>Description</u>	<u>Notes</u>	<u>Issued</u>
PG371	Instructor bars	Optional	03/10/02
M103	Aerofoil undercarriage struts	Optional	28/4/03
M108	Disc Brakes	Optional	20/01/04
M111	Carb Heater Blocks	Optional	09/06/06
M112	Safety starter switch in hand throttle	Optional	13/11/03
M113	Screen extension	Optional	13/11/03
M114	Warp Drive prop 912	Optional	26/04/03
M115	Warp Drive prop 912S	Optional	26/04/04
M123	Pylon bush sleeve	Strongly recommended, up to S/N 8037, SB117. Superseded by mod M148	21/04/04
M130/1	65L tank	Optional	22/11/04
M130/2	Telescopic front suspension	Optional	22/11/04
M131	Overload Clutch	Optional	22/11/04
M135	BRS parachute	Optional	04/02/05
M137	Low drag panniers	Optional	06/04/05
M138	Electric trim	Optional	06/04/05
M140	Keel nose holes bush	Optional, std. repair	06/04/05
M141	Cross boom end hole bush	Optional, std. repair	06/04/05
M142	Leading edge front bush	Optional, std. repair	06/04/05
M147	Quik Bush tube sleeve for basetube	Optional	12/05/05
M148	quik/qtm/quasar hang point bobbin	Optional	12/05/05
M150	Quik, 110kg per seat	Optional	14/05/05

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<u>Mod Ref</u>	<u>Description</u>	<u>Notes</u>	<u>Issued</u>
M152	Cranked Brake Pedal Quik Hydraulic Brakes	Optional	28/07/05
M153	Landing light	Optional	31/08/05
M156	Engine Cover & Large Radiator type ELR-003.	Optional	12/02/06
M157	Standard GPS & Power socket	Optional	12/01/06
M158	Quik - 2 Part Screen as per GT450	Optional	13/01/06
M160	New trim system pulley assy	Optional	19/01/06
M162	CKT exhaust and cooling pack QUIK and GT450, Rotax 912 and 912-S	Optional	15/11/06
M164	Move Cooling Pack Lower Rearwards	Optional	26/06/07
M165	Lower Pylon Face Bearing	Optional	28/06/07
M166	Mylar Cover On Sail Protection Patch	Optional	25/10/06
M168	New coolant overflow bottle mounted on gearbox	Optional	14/03/06
M176	Oil Hose Fastened to Gearbox	Optional	27/07/06
M180	Larger Instrument Panel	Optional	19/03/07
M193	GT450 Style Control Frame	Optional	04/07/07
M204	Webs on Subframe	Optional	11/03/08
M217	Stoneguard	Optional	10/01/11
M218	Enigma Instrument	Optional	30/09/08
M220	PX10T Leading Edge Material	Optional	03/09/08
M225	Trim Pot	Optional	20/02/09
M231	Radio/Transponder/ELT	Optional	24/07/09

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<u>Mod Ref</u>	<u>Description</u>	<u>Notes</u>	<u>Issued</u>
M232	Seat Belt Protection Sleeve	Optional	20/08/09
M235	YTZ-14 Battery	Optional	11/12/09
M236	Technoral Strips	Optional	30/06/10
M242	Rear Axle Aerial Mnt	Optional	31/01/11
M244	Oil & Coolant Thermostats	Optional	27/10/11
M249	Super B Battery	Optional	09/11/11
M250	UV (TNF215 or CB) Sailcloth	Optional	27/05/11
M251	Screen Washer	Optional	15/06/11
M256	Explorer Large Wheels and Brakes	Optional	21/03/12
M270	Sail TE Reinforcement	Optional	07/12/12
M282	Fournales Shocks	Optional	25/07/14
M286	Spinner	Optional	12/12/14

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ANNEX C - WEIGHING INFORMATION



CG Datum: Nosewheel axle

ITEM	WEIGHT kg
Quik-912S Trike	151.5
Quik-912 Trike	150
Quik wing only	44
OPTIONAL ITEMS	
3 HEAVY DUTY TYRES, ADD	1.72
MAP BOX-FABRIC	0.76
DELUXE SEAT (1.150), ADD	0.46
50mm FRONT SEAT BOOSTER PAD	0.27
50mm FRONT S/BACK BOOSTER PAD ET	0.25
50mm REAR BOOSTER PAD	0.27
100mm REAR BOOSTER PAD	0.42
CONTROL BAR PROTECTION (2)	0.05
FRONT STRUT PROTECTION	0.04
LYNX ANTENNA	0.19
LYNX FILTER, POWER INT, PTT	0.81
INSTRUCTOR BARS	1.5
Disc Brakes	1.0
65L tank	0.5
Telescopic front suspension	1.0
Electric trim	1.5
Overload clutch	1.7



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ANNEX D

EXAMPLE PLACARDS

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

<u>Pegasus Quik Serial Number:</u>	
Never Exceed Speed:	115 mph IAS
Manoeuvring Speed :	80 mph IAS
Pitch Limits:	45° nose down, 45° nose up
Bank angle limits:	+/- 60°
Normal Acceleration Limits:	+4 / 0g
Empty Weight:	_____ kg *
Max Take-Off Weight:	409 kg
Minimum Cockpit Weight:	55 kg (Fly solo from front seat only)
Maximum Cockpit Weight:	100 kg in each seat *
Aerobatics and deliberate spinning prohibited.	

* This must match the most recent W&CG report for the aircraft. Max seat load may be 110kg if mod M150 applied.

(b) Engine Limitations Placard (to be located near to engine instruments)

The engine limitations are programmed into the Rotax FLYDAT Engine Indication System and the engine parameter indication will flash if a limitation of that parameter has been exceeded. Analogue instruments limits to be marked with red lines.

(c) Fuel Limitations Placard (to be located near to filler cap, 47.4L or 65L with mod M130)

<p><u>FUEL</u> Useable Capacity Litres</p> <p>Recommended Fuel 95+ Octane unleaded/97 Octane 4-star AVGAS 100LL See Flight Manual</p>

(d) Switches

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

For the electric trim system (Modification M138)

On the trim LED bar graph display: On the trim switch next to the throttle:

