CIVIL AVIATION AUTHORITY – SAFETY REGULATION GROUP

MICROLIGHT TYPE APPROVAL DATA SHEET (TADS)

NO: BM 28 ISSUE: 3

TYPE: Pegasus Photon

(1) MANUFACTURER: Solar Wings, now supported by P & M Aviation Ltd, Unit B, Crawford St, Rochdale, Lancashire, OL16 5NU

(2) UK IMPORTER: N/A

(3) CERTIFICATION: BCAR Section S, Advance issue

(4) DEFINITION OF BASIC STANDARD: Solar Wings type approval submission document ref. Sw-405-20 section 3 type identification statement

(5) COMPLIANCE WITH THE MICROLIGHT DEFINITION

(a)	MTOW	180kg
(b)	No. Seats	1
(c)	Maximum Wing Loading	13.7kg/m²
(d)	Vso	20 mph CAS
(e)	Permitted range of pilot weights	55-90 kg
(f)	Typical Empty Weight (ZFW)	82kg
(g)	ZFW + 86 kg crew + 1 hr fuel (5litres /3.6kg)	172 kg
(h)	ZFW + 86 kg pilot + full fuel (10 litres / 7.18 kg)	175 kg
(i)	Max ZFW at initial permit issue	90 kg

(6) POWER PLANTS

Designation	*Photon 210*			
Engine Type	*Solo 210cc Inverted*			
Reduction Gear	*Tooth Belt 3:1 +Cush Drive*			
Exhaust System	*Solo 210 Untuned Exp Chamber*			
Intake System	*"Unique Form Filter*			
Propeller Type	*Newton*			
Propeller Dia x Pitch	*56"34"*			
Noise Type Cert No.	*30M Issue 1*			
AAN approving configuration	***19752 P***			

(7) MANDATORY LIMITATIONS:

(A) Max Take-Off Weight 180kg

(B) CG Limits *N/A*

(C) CG datum Front wheel axle (see annex C).

(D) Cockpit Loadings

	Port	Starboard	Total
Min	55kg	-	55kg
Max	90kg	N/A	90kg

(E) Never Exceed Speed 60 mph

(F) Manoeuvring Speed 46mph

(G) Permitted Manoeuvres 30° Nose up / 30° nose down
Max 60^0 bank angle
Non Aerobatic
Normal flight acceleration limits, +4 / -0g

(H) Fuel Contents (Max Useable) 10 Litres

(I) Power Plant See Table

Engine	Solo 210			
Max RPM	7,000			
MAX CHT	475°F			
MAX EGT	N/K			
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-deterg. Self mix, 2 stroke			
Gearbox oil spec	N/A			
Fuel/Oil Mix	25:1			
Coolant Temperature	N/A			
Oil Pressure	N/A			
Oil Temperature	N/A			
Fuel Pressure	0.2-0.4 bar			

(8) INSTRUMENTS REQUIRED:

ASI	Altimeter	RPM	CHT / EGT	Compass	Fuel Pressure	VSI
Required (to 70 mph)	Required (may be wrist type)	Optional	Optional	Optional	Optional	Optional

(9) CONTROL DEFLECTIONS: Trikes

Conditions - trike on level surface Wing At Zero Keel Incidence
Roll - $\pm 24^0$
Pitch - $+18^0$ -8^0

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

10.1 Manuals approved for use with this aircraft.

(a) Operators handbook ref sw-406-4

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)

A placard is to be fitted showing fuel capacity, fuel type(s), fuel:oil ratio. An example is shown at Annex D.

(d) Switches
See Annex D.

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

S.B. ref.	Description	Notes	Issue
0018	Engine mount bolts	Advisory	11/8/87
009	Incorrect rigging	Advisory	1/5/87

See Annex A for required modifications.

Annual Bettsometer test is to be carried out to 1060 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: 256 fpm at 30mph IAS.

Stall or Minimum Flying Speed: 20mph IAS at MTOW / idle.

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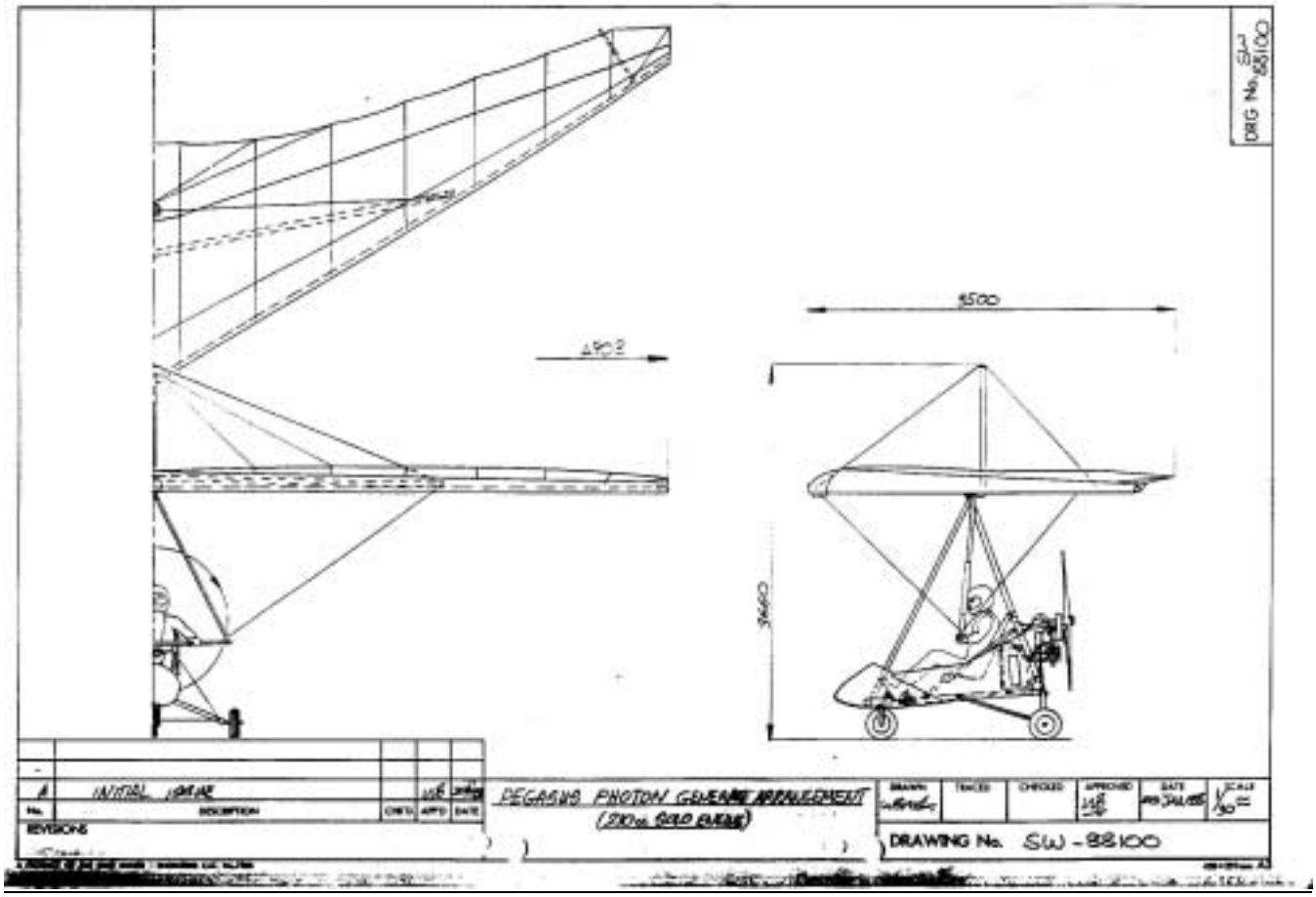
Issue History

	Issue No.	Reason and signatory
1	18/10/88	Initial Issue J WATKINS
2	31/03/03	New format J BARRATT
3	06/07/05	New company name J Barratt

Illustration of Aircraft - 3 View



ANNEX A – MANDATORY MODIFICATIONS

1. NIL

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.

Mod ref.	Description	Notes	Issued
0099	In line primer bulb fitting	See SB 110 (blockage) if fitted.	17/6/02

ANNEX C

WEIGHING INFORMATION

1. The CG of the trike is not critical as it only affects the speed range, not the trim.
2. No significant masses should be attached to the wing.
3. Empty weight of the whole aircraft must not exceed 87kg.

ANNEX D

EXAMPLE PLACARDS

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

[Pegasus Photon Solo 210cc] [Registration]	
Never Exceed Speed:	60mph IAS
Manoeuvring Speed :	46mph IAS
Stall Speed:	20mph IAS
Best climb speed:	30mph IAS
Best glide speed:	28mph IAS
Pitch Limits:	30° nose down, 30° nose up.
Bank angle limits:	+/- 60°
Maximum Stall entry rate:	2mph/s
Normal Acceleration Flight Limits:	+4 / -0g
Empty Weight:	____ kg *
Max Take-Off Weight:	180 kg
Minimum Cockpit Weight:	55 kg
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, if fitted. 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 10 Litres
(25:1 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).