CIVIL AVIATION AUTHORITY – SAFETY REGULATION GROUP

MICROLIGHT TYPE APPROVAL DATA SHEET (TADS)

NO:BM17 ISSUE:5

TYPE: Pegasus Flash 2

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

(2) UK IMPORTER: N/A

(3) CERTIFICATION: Section S Issue: Advance Issue March 1983 list of section S Blue papers and additional CAA Requirements Nil

(4) DEFINITION OF BASIC STANDARD: Solar Wings Modification No 0003 SW/405/7

(5) COMPLIANCE WITH THE MICROLIGHT DEFINITION

(a)	MTOW	344kg
(b)	No. Seats	2
(c)	Maximum Wing Loading	22.1kg/m²
(d)	Vso	28mph CAS
(e)	Permitted range of pilot weights	55-90 kg per seat.
(f)	Typical Empty Weight (ZFW)	150Kg
(g)	ZFW + 172 kg crew + 1 hr fuel (16litres /12kg)	334 kg
(h)	ZFW + 86 kg pilot + full fuel (24 litres / 17 kg)	253 kg
(i)	Max ZFW at initial permit issue	160 kg

(6) POWER PLANTS

Designation	Pegasus Flash 2	Pegasus Flash 2		
Engine Type	Rotax 447	Rotax 462 (low noise)		
Reduction Gear	2.58:1	2.58:1		
Exhaust System	Rotax	Rotax		
Intake System	Rotax intake silencer with K&N filter	Rotax intake silencer with K&N filter		
Propeller Type	Newton	Newton		
Propeller Dia x Pitch	62”x 38”	65”x 44”		
Noise Type Cert No.	31M iss1	31M iss 2		
AAN approving configuration	**19641P iss2**	**19852P**		

(7) MANDATORY LIMITATIONS:

(A) Max Take-Off Weight 344kg

(B) CG Limits *N/A*

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

(D) Cockpit Loadings

	Port	Starboard	Total
Min	70kg	-	70kg
Max	90kg	90kg	180kg

(E) Never Exceed Speed 89mph

(F) Manoeuvring Speed 89mph

(G) Permitted Manoeuvres
30° Nose up / 30° nose down
45^0 Max bank angle
Non Aerobatic
Normal acceleration flight limits, +4 / -0g

(H) Fuel Contents (Max Useable) 24 litres

(I) Power Plant See Table

Engine	Rotax 447	Rotax 462 (low noise)		
Max RPM	6800 6500 contin	6800 6500 contin		
MAX CHT	250^0C	185^0C		
MAX EGT	650^0C	650^0C		
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-dterg 2 stroke self mix	Non-dterg 2 stroke self mix		
Gearbox oil spec	EP90, AP1-GL3 or higher	EP90, AP1-GL3 or higher		
Fuel/Oil Mix	50:1	50:1		
Coolant Temperature	N/A	80^0C		
Oil Pressure	N/A	N/A		
Oil Temperature	N/A	N/A		
Fuel Pressure	0.2-0.4 bar	0.2-0.4 bar		

(8) INSTRUMENTS REQUIRED:

ASI	Altimeter	RPM	CHT / EGT	Compass	Coolant temp	Fuel Pressure	VSI	Slip ball
Required (to 100 mph min.)	Required (may be wrist type)	Optional	Optional	Optional	Optional	Optional	Optional	Optional

(9) CONTROL DEFLECTIONS: (trikes)

Conditions - trike on level surface Wing At Zero Keel Incidence
Roll - $\pm 21^0$
Pitch - 13.5^o total from front strut to seat structure.

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

10.1 Manuals approved for use with this aircraft.

(a) SW-406-05

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 types and fuel:oil ratio. An example is shown at Annex D. If MTOW can be exceeded with full fuel and maximum cockpit weight, the fuel loads at MTOW for cockpit weights. An example is shown at Annex D.

(d) Switches
See Annex D.

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

a) See Annex A for required modifications.

b) Service Bulletins.

Bulletin No	Title	Notes	Date
0002	Fuel system cleaning/ inspection	**Mandatory**	06-07-86
0003	Westach instrument wiring	Advisory	26-2-87
0004	Throttle stop	Advisory	29-4-87
0005	Front fork bolt	Advisory	29-4-87
0006	Front forks	Advisory	29-4-87
0007	Securing ring on nose pin	Advisory	29-4-87
0008	Spark plug caps	Advisory	26-2-87
0010	Brake mod 0016, 0017	Advisory	14-4-87
0011	New fuel tank mod. 08, 09	Advisory	14-4-87
0012	Improved fuel system mod 10, 11	Advisory	14-4-87
0014	Improved vent system	Compulsory	29/4/87
0015	Exhaust system	Advisory	29/4/87
0019	Propeller bolt torque	**Mandatory**	23/12/87
0022	Coolant impeller	Advisory	21/7/88
0023	Coolant expansion bottle	Advisory	14/11/88
0024	Propeller bolt torque	Advisory	07/06/89
0025	Flight Limitations	**Mandatory**	07-10-89
0029	Tyre Pressures	Advisory	20-1-91
0109	Component life extension	Advisory	21-3-02

Annual Bettsometer test is to be carried out to 1050 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

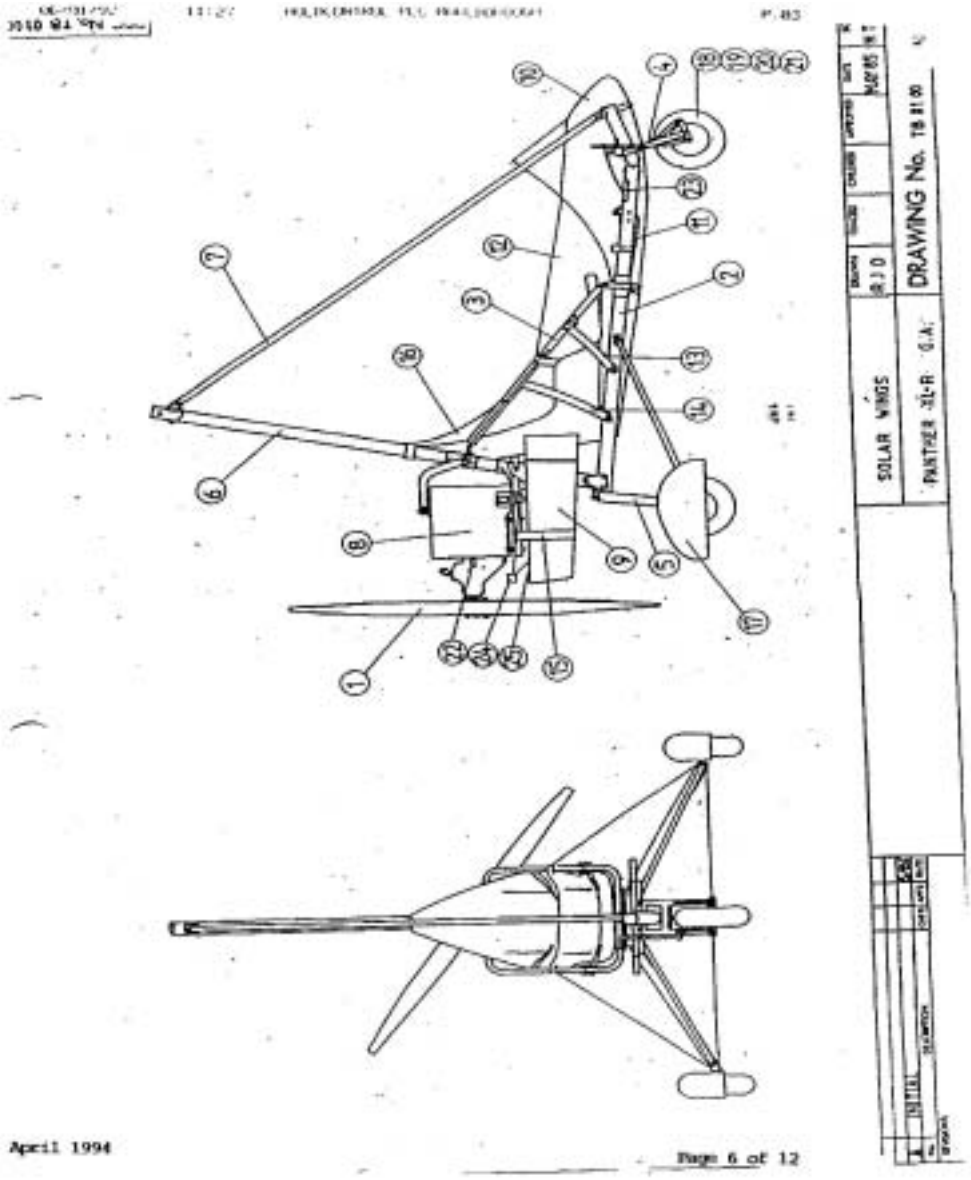
Rate of Climb:	594 fpm at 40mph IAS. (447 and 462 engines)
Stall or Minimum Flying Speed:	28mph IAS at MTOW / idle.

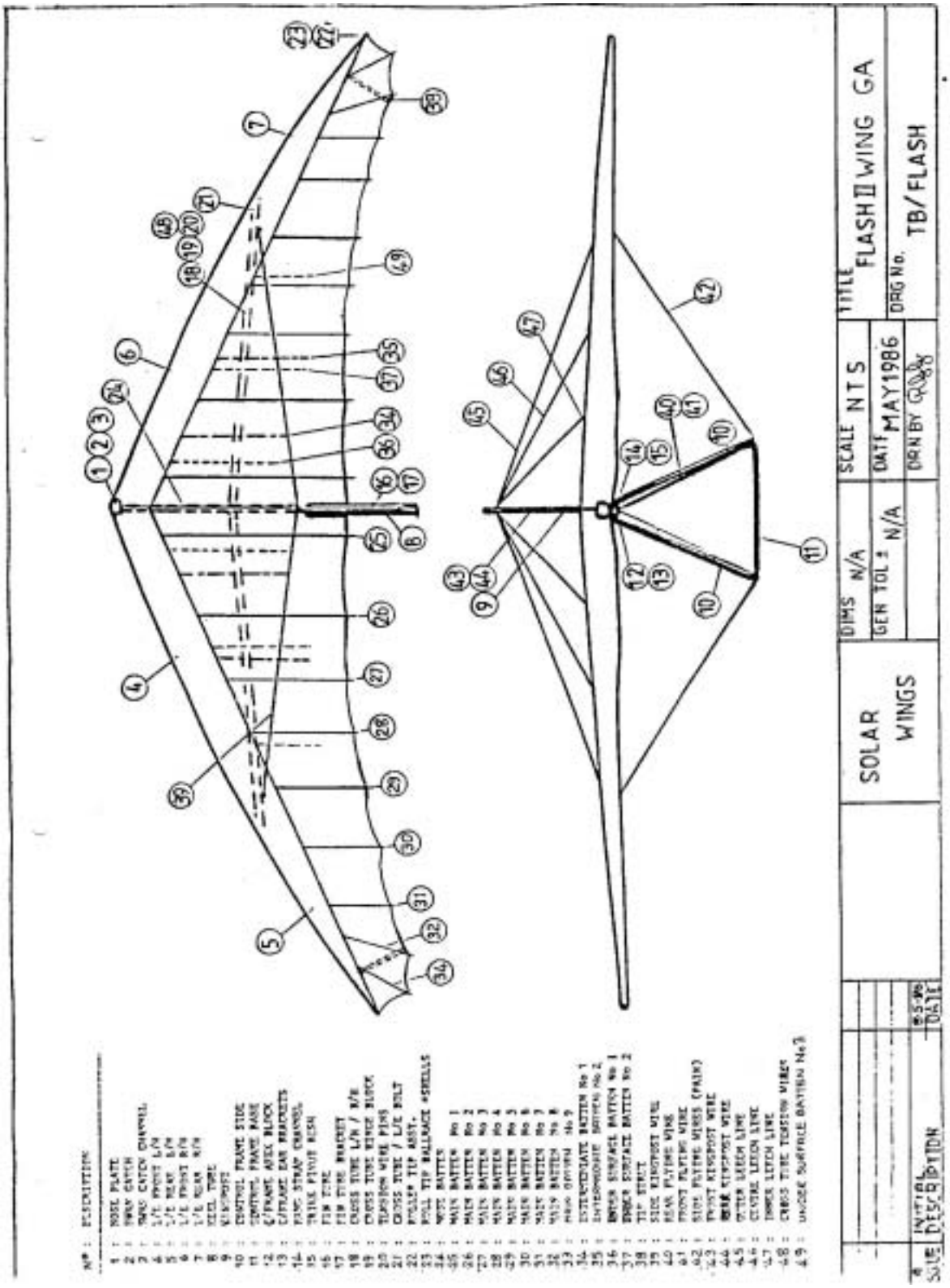
Issue History

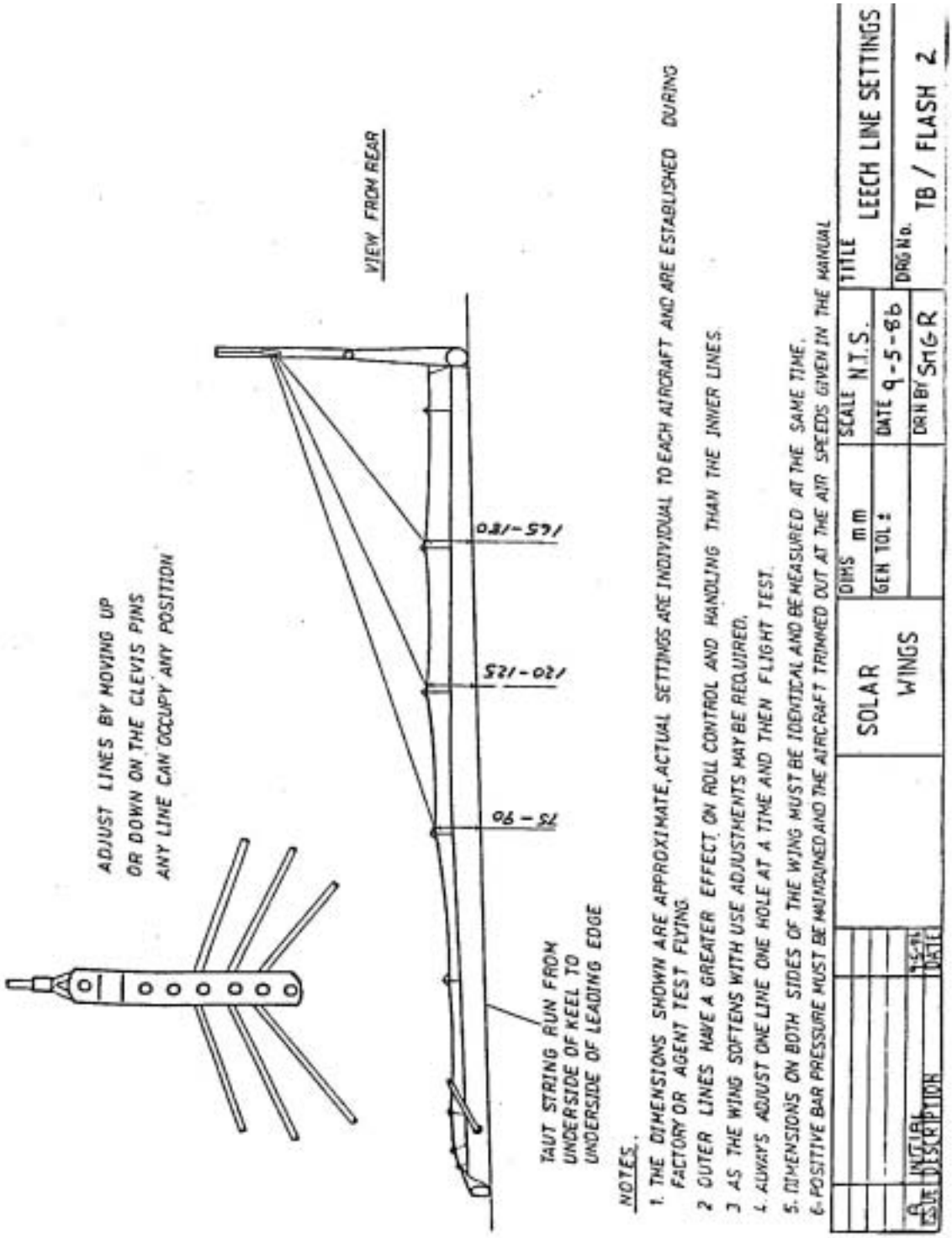
Issue No.	Date	Reason and signatory
3	7th Feb 1991	K.D. Russell
4	31 March 2003	Re-issued in new format
5	6 July 2005	change of company name

J BARRATT

Illustration of Aircraft - 3 View – Pegasus Flash 2
(XL-R trike is identical except for the Flash wing adapter ring on the top of the pylon)




SOLAR WINGS
DIMS N/A
GEN TOL ± N/A
SCALE NTS
DATE MAY1986
DRN BY
TITLE FLASH II WING GA
DRG No. TB/FLASH
INITIAL DESCRIPTION
DATE


ADJUST LINES BY MOVING UP
OR DOWN ON THE CLEVIS PINS
ANY LINE CAN OCCUPY ANY POSITION
VIEW FROM REAR
165-180
120-125
75-90
TAUT STRING RUN FROM
UNDERSIDE OF KEEL TO
UNDERSIDE OF LEADING EDGE
NOTES.
1. THE DIMENSIONS SHOWN ARE APPROXIMATE, ACTUAL SETTINGS ARE INDIVIDUAL TO EACH AIRCRAFT AND ARE ESTABLISHED DURING FACTORY OR AGENT TEST FLYING
2. OUTER LINES HAVE A GREATER EFFECT ON ROLL CONTROL AND HANDLING THAN THE INNER LINES.
3. AS THE WING SOFTENS WITH USE ADJUSTMENTS MAY BE REQUIRED.
4. ALWAYS ADJUST ONE LINE ONE HOLE AT A TIME AND THEN FLIGHT TEST.
5. DIMENSIONS ON BOTH SIDES OF THE WING MUST BE IDENTICAL AND BE MEASURED AT THE SAME TIME.
6. POSITIVE BAR PRESSURE MUST BE MAINTAINED AND THE AIRCRAFT TRIMMED OUT AT THE AIR SPEEDS GIVEN IN THE MANUAL
SOLAR WINGS
DIMS mm
GEN TOL ±
SCALE N.T.S.
DATE 9-5-86
DRN BY SMGR
TITLE LEECH LINE SETTINGS
DRG No. TB / FLASH 2
INITIAL
DESCRIPTION
DATE

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ANNEX A – MANDATORY MODIFICATIONS

1.

Mod ref.	Description	Notes	Issued
0018	Fuel tank breather		30/3/89
0019	Propeller bolts	Increase to 8mm dia.	30/3/89

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
SW003	Fitting of Flash 2 wing	Optional	28/2/89
SW0016	Fitting of front brake	Optional	1/11/88
SW0045	Brake reinforcement	To increase life of brake	14/2/90

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 160kg.

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ANNEX D

EXAMPLE PLACARDS

(a) Flight Limitations Placard to be visible to pilot

[Pegasus Flash 2] [Registration]

Never Exceed Speed:	89mph IAS
Manoeuvring Speed :	89mph IAS
Stall Speed:	28mph IAS
Best climb speed:	40mph IAS
Best glide speed:	40mph IAS
Pitch Limits:	30° nose down, 30° nose up.
Bank angle limits:	+/- 45°
Maximum Stall entry rate:	2mph/s
Normal Acceleration Flight Limits:	+4 / -0g
Empty Weight:	____ kg *
Max Take-Off Weight:	180 kg
Minimum Cockpit Weight:	90 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. 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 Vs Max Cockpit Load Placard (to be visible to the pilot)

Only required if max cockpit load, full fuel and ZFW can exceed Max AUW

Empty Wt **Kg**
Date

Fuel Load (litres)	**Max Cockpit Wt (kg)**
65	
55	
45	
35	
25	
15	

5	

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

There must also be a fuel cock on/off placard fitted.

FUEL Capacity 24 Litres (50:1 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

(e) Switches

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