

CIVIL AVIATION AUTHORITY – SAFETY REGULATION GROUP

MICROLIGHT TYPE APPROVAL DATA SHEET (TADS)

NO:BM42 ISSUE: 2

TYPE: Pegasus Quasar -TC

- (1) MANUFACTURER: Solar Wings Ltd, now supported by Mainair Sports, Unit B, Crawford St, Rochdale, Manchester, OL165NU.
- (2) UK IMPORTER: N/A
- (3) CERTIFICATION: BCAR Section S - Advance Issue March 1983 ammended 11/10/88
- (4) DEFINITION OF BASIC STANDARD: Solar Wings Approval Submission - Document Ref No. Sw-405-80
- (5) COMPLIANCE WITH THE MICROLIGHT DEFINITION

(a) MTOW	382kg
(b) No. Seats	2
(c) Maximum Wing Loading	25kg/m ²
(d) V _{so}	26mph CAS
(e) Permitted range of pilot weights	55 – 92 kg per seat.
(f) Typical Empty Weight (ZFW)	173 kg
(g) ZFW + 172 kg crew + 1 hr fuel (17litres /12 kg)	357 Kg
(h) ZFW + 86 kg pilot + full fuel (42 litres / 30kg)	289kg
(i) Max ZFW at initial permit issue	180kg

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(6) POWER PLANTS

Designation	Quasar-TC	Quasar-TC
Engine Type	Rotax 503-2V Upright (dual ign)	Rotax 503-2V Upright (single ign.)
Reduction Gear	Rotax Gearbox 2:58:1	Rotac Gearbox 2:58:1
Exhaust System	Rotax Side Mounted (with after muffler)	Rotax Side Mounted (with after muffler)
Intake System	K & N Intake Filter	K & N Intake Filter
Propeller Type	Arplast 162	Arplast 162
Propeller Dia x Pitch	162 cm Dia Settable Pitch 15° at 53.5 cm	162 cm Dia Settable Pitch 15° at 53.5 cm
Noise Type Cert No.	126M Iss 3	126M Iss 3
AAN approving configuration	22669	22669

(7) MANDATORY LIMITATIONS:

(A) Max Take-Off Weight	382kg			
(B) CG Limits	N/A			
(C) CG datum	Front Wheel Axle			
(D) Cockpit Loadings	Port	Starboard	Total	
	Min 55kg	-	55kg	
	Max 92kg	92kg	184kg	
(E) Never Exceed Speed	82mph			
(F) Manoeuvring Speed	60mph			
(G) Permitted Manoeuvres	Max 30° Nose up / 30° nose down			
	Non Aerobatic, max 60° bank			
	Normal acceleration flight limits, +4 / -0g			
(H) Fuel Contents (Max Useable)	42 L			

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(I) Power Plant See Table

Engine	Rotax 503-2V			
Max RPM	6800 6500 Cont			
MAX CHT	250°C			
MAX EGT	650°C			
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 2 Stroke Self Mix			
Gearbox oil spec	EP 90			
Fuel/Oil Mix	50:1			
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	Coolant temp	Fuel Pressure	VSI	Slip ball
Required (to 100mph min.)	Required	Optional	Optional	Optional	Optional	Optional	Optional	N/A

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(9) CONTROL DEFLECTIONS:

N/A Weightshift flexwing, control movements limited by main structure.

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

10.1 Manuals approved for use with this aircraft.

(a) Document Ref SW-406-12 Issue 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) and fuel:oil ratio. An example is shown at Annex D.

(d) Switches

See Annex D.

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

Service Bulletin ref.	Description	Notes	Issued
SB0031	Conversion of Quasar to Quasar TC	Optional	15/11/91
SB0032	Inspection of T.E. root	MANDATORY	22/8/91
SB0036	New Pylon Fairing fitting	Optional	18/5/92
SB0039	Brake cables	MANDATORY	26/3/93
SB 0086	Inspection of swages	Compulsory	20/05/97
SB0090	Roll bearing bolt security	Advisory	17/09/97
SB0091	Roll bearing flange cracking	Advisory	06/04/98
SB0095	Seat belt buckle on s/n 7428-7456	Advisory	30/07/98
SB0109	Component life extension	Advisory	21/3/02

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:	550 ft/min (Rotax 503-2v engine)
Climb Speed:	46 mph (40 kts, 74 kph) IAS
Stall or Minimum Flying Speed:	26 mph (23 kts 42 kph) IAS MaxTOW at idle

Issue History

<u>Issue No.</u>	<u>Reason and signatory</u>
1	December 1990 J. Watkins
2	New format

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Illustration of Aircraft - 3 View

TRIKE PART NUMBERS --
 TQU-002 REFERS TO SINGLE IGNITION OPTION
 TQU-003 REFERS TO DUAL IGNITION OPTION

ROTAX 503
DUAL CARBURETTOR VERSION.

1	TRIKE SUB ASSEMBLY	1	SW-90012	TQU-002/003
2	WING SUB ASSEMBLY	1	SW-89207	YQM-002
Number		Description	Quantity	DRAWING NO
		PEGASUS QUASAR-TC		
GENERAL ARRANGEMENT				
SOLAR WINGS Ltd. 56 George Lane Morpough Wiltshire SN8 4BY TEL:0672-515065				
Drawn	per/so	Date	Name	Drawing No.
Approved	per/so			Scale
Checked	per/so			NTS
				SW-90011
UNLESS OTHERWISE SPECIFIED				
DIMENSIONS IN MM			GEN TOL+ -20mm	
Substituted for				
Replaced by				

Drawing No.
SW-90011

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ANNEX A – MANDATORY MODIFICATIONS

1.

Mod ref.	Description	Notes	Issued
SW0082	Q1 WING, QUASAR, SAIL T/E PATCH	MINOR	05/09/91
SW0084	Q1 WING, QUASAR SAIL T/E ANTI ABRASION PATCH	MINOR	05/09/91

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
SW0068	TWIN CARB R503 BOSCH SINGLE IGNITION	MAJOR OPTIONAL	20/12/90
SW0069	TWIN CARB R503 DUCATI DUAL IGNITION	MAJOR OPTIONAL	20/12/90
SW0070	PRELOAD SPACERS IN REAR U/C	MINOR COMPULSORY	17/04/91
SW0071	THROTTLE FOR ALL TYPES (HAND THROTTLE) FROM 20/01/91	MINOR OPTIONAL	17/04/91
SW0074	CARB. HEAT PLATE KIT	MINOR OPTIONAL	17/04/91
SW0075	Q-WING, QUASAR WING EXTERNAL BUNGEE RETRACT SYSTEM	MINOR OPTIONAL	17/04/91
SW0076	SPLIT REAR WIRE SYSTEM TO LIGHTEN ROLL	MINOR OPTIONAL	15/07/92
SW0080	SPECIFICATION OF AEROQUIP 2556-4 FUEL HOSE	MINOR OPTIONAL	05/09/91

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SW0081	CONVERSION OF QUASAR TO QUASAR TC	MINOR OPTIONAL	05/09/91
SW0091	NEW PYLON FAIRING (SEE SB 0036)	MINOR OPTIONAL	15/07/92
SW0096	IMPROVED FRONT WHEEL & AXLE SYSTEM	MINOR OPTIONAL	15/07/92
SW0097	NEW COCKPIT TOP MOULDING WITH SCREEN AND COMPASS	MINOR OPTIONAL	15/07/92
SW0099	FITTING OF PRIMER BULB IN LINE (Note – see SB 110 – possible blockage)	MINOR OPTIONAL	15/07/92
PG28	QUASAR U/C LEG MATERIAL CHANGE	MINOR	10.1.95
PG54	QTM/QSR SEAT CUSHION ADJUSTMENT	MINOR	16.11.95
PG73	BRONZE WELD -> TIG WELD ON QTM/QSR FORK LINKS	MINOR	10.5.96
PG92	Q2 SAIL TAPING & NEW SEAM LAYOUT	MINOR	10.5.96
PG124	Q WING 10mm WING BOLTS	MINOR	22.5.97
AX/PG126	ALL 12V AIRCRAFT BSM INDICATOR	MINOR	28.5.97
AX/PG127	BRAKE RETURN SPRING ADDED	MINOR	28.5.97
PG151	QTM/QSR LTS FUEL GAUGE	MINOR	5.2.98
PG177	LTS FUEL GAUGE FOR PRODUCTION	MINOR	8.6.98
PG/AX252	LYNX KIT FITTING	MINOR	7.1.99
PG254	QUASAR SUSPENSION RUBBER MATERIAL	MINOR	15.1.99
PG/AX279	NON PVC FUEL HOSES	MINOR	9.3.99
PG287	USE Q2 CROSS BOOM ON Q1 WINGS	MINOR	28.4.99
PG323	QUASAR UNDERCARRIAGE LAYUP	MINOR	14.12.99
PG353	FITTING OF NOSE WEBBING ONTO Q1 WING	MINOR	14.12.99

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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.
- Empty weight of the whole aircraft must not exceed 180kg.

ANNEX D

EXAMPLE PLACARDS

