CIVIL AVIATION AUTHORITY – SAFETY REGULATION GROUP

MICROLIGHT TYPE APPROVAL DATA SHEET (TADS)

NO: BM 52 ISSUE: 7

TYPE: Thruster T600 (N) & (T) 390kg

(1) MANUFACTURER: Thruster Aircraft (UK)
Continued Support: Thruster Aircraft LLP
North Hanger
Wickenby Airfield
Langworth, Lincs
LN3 5AX

(2) UK IMPORTER: N/A

(3) CERTIFICATION: BCAR Section S Issue 1 (4 April 1995) with Working Papers S861 and S901 for the T600 with Rotax 582. JAR 22 paras 1935 and 1939 have been employed to satisfy Section S Subpart J for the composit propeller.

(4) DEFINITION OF BASIC STANDARD: Mod TAS 001 Issue 1 dated 18 April 1995
Master drawings list F10 (T600N) Issue 1 dated 2 Jan 1997
Master Drawings List F20 (T600T) Issue 1 dated 2 Jan 1997

(5) COMPLIANCE WITH THE MICROLIGHT DEFINITION

(a)	MTOW		390	kg
(b)	No. Seats		2	
(c)	Maximum Wing Loading		25	kg/m²
(d)	Vso		32	kn CAS
(e)	Permitted range of seat loading*		55-86	kg per seat
(f)	T600N: Typical Empty Weight (ZFW)		199	kg
	T600T: Typical Empty Weight (ZFW)		189	kg
(g)	T600N: ZFW + 172 kg crew + 1 hr fuel *(21 litres / 15 kg)*		386	kg
	T600T: ZFW + 172 kg crew + 1 hr fuel *(21 litres / 15kg)*		376	kg
		40lt Tank	25lt Tank	
(h)	T600N: MaxZFW + 86 kg pilot + full fuel	318	307	kg
	T600T: MaxZFW + 86 kg pilot + full fuel	318	307	kg
(i)	T600N Max ZFW at initial permit issue		203	kg
	T600T Max ZFW at initial permit issue		203	kg

**Note: It is the Pilot's responsibility to ensure the aircraft is flown within the MTOW*

(6) POWER PLANTS

Designation	*T600N*	*T600T*	*T600T*
Engine Type	*Rotax 503 DCDI-2V*	*Rotax 503 DCDI-2V*	*Rotax 582 2v*
Reduction Gear	*B-Type 2.58:1*	*B-Type 2.58:1*	*B-Type 2.58:1*
Exhaust System	*Rotax straight. After Muffler Optional*	*Rotax straight. After Muffler Optional*	*Rotax straight. After Muffler Optional*
Intake System	*Air Filter*	*Air Filter*	*Air Filter*
Propeller Type	*Brolga 2 Blade* *Brolga 3 Blade*	*Brolga 2 Blade* *Brolga 3 Blade*	*Brolga 3 Blade*
Propeller Dia x Pitch	*68" x 13 º* *68" x 09 º*	*68" x 13 º* *68" x 09 º*	*68" x 12 º*
Noise Type Cert No.	*44M Issue 11*	*44M Issue 11*	*44M Issue 15*
AAN approving configuration	***24970***	***24970***	***26145***

(7) MANDATORY LIMITATIONS:

(a) Max Take-Off Weight 390 kg

(b) CG Limits Aft Limit: 482 mm Aft of datum
FWD Limit: 389 mm Aft of datum

(c) CG datum (see annex C)

(d)

Cockpit Loadings		Port	Starboard	Total
	Min:	55	Either Seat	kg
	Max:	86	86	kg

(e) Never Exceed Speed 80 KIAS

(f) Manoeuvring Speed 60 KIAS

(g) Permitted Manoeuvres 30° Nose up / 30° nose down
Non Aerobatic
Normal acceleration limits, +4 / -2g

(h) Fuel Contents (Max Useable) 25lt or 38.7lt depending on tank fitted

(i) Power Plant (see table below)

Engine	*T600N Rotax 503 DCDI-2V*	*T600T Rotax 503 DCDI-2V*	*T600T Rotax 582 DCDI-2V*	
Max RPM	6500	6500	6500	
MAX CHT	250°C(480°F)	250°C(480°F)	-na- water cooled	
MAX EGT	650°C (1200°F)	650°C (1200°F)	650°C (1200°F)	
Fuel Spec	Mogas min RON 91 (mon83) leaded or non leaded or Argas fuel 100LL (blue) mixed 50:1 with 2 stroke oil			
Engine Oil Spec	Two stroke	Two stroke	Two stroke	
Gearbox oil spec	SAE 140-API-GL5	SAE 140-API-GL5	SAE 140-API-GL5	
Fuel/Oil Mix	50:1	50:1	50:1	
Coolant Temperature	-na-	-na-	80°C	
Oil Pressure	-na-	-na-	-na-	
Oil Temperature	-na-	-na-	-na-	
Fuel Pressure	-na-	-na-	-na-	

(8) INSTRUMENTS REQUIRED:

ASI	Altimeter	RPM	CHT / EGT	Compass	Coolant temp	Fuel Pressure	VSI	Slip ball
Required 0 to 100 Kts min.)	Required	Required	Required	Optional	Water cooled engines only	-na-	Optional	Optional

(9) CONTROL DEFLECTIONS:

Elevator UP:	30°+/- 2°	Tailplane trim UP:	-na-
Elevator DOWN:	30° +/- 2°	Tailplane trim DOWN:	-na-
Ailerons UP:	40°+/- 2°	Rudder LEFT:	25°+/- 2°
Ailerons Down:	30°+/- 2°	Rudder RIGHT:	25°+/- 2°

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

10.1 Manuals approved for use with this aircraft**.**

(a) Pilot Operating Handbook POH Part Number 210-055
POH Supplement Rotax 582 Pt No. 210-057
Change Sheet N0. 2 is required for Ultralam coverings

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 (litres), fuel type(s), fuel:oil ratio (if relevant) and if MTOW can be exceeded with full fuel and maximum cockpit weight, the fuel loads at MTOW for cockpit weights of 180kg / 170kg / 160kg etc. at 10kg intervals down to the maximum fuel load. An example is shown at Annex D.

(d) Switches
See Annex D.

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

See Annex A for required modifications. Also see Thruster website @ www.thruster.co.uk for latest information.

Annual Bettsometer test is to be carried out to 1320 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:	Rotax 503	400 fpm at 50 KIAS
	Rotax 582	600 fpm at 50 KIAS
Stall or Minimum Flying Speed:	32 KIAS at MTOW / idle	

(13) APPROVED OPTIONAL MODIFICATIONS

See Annex B. Also see Thruster website @ www.thruster.co.uk for latest information

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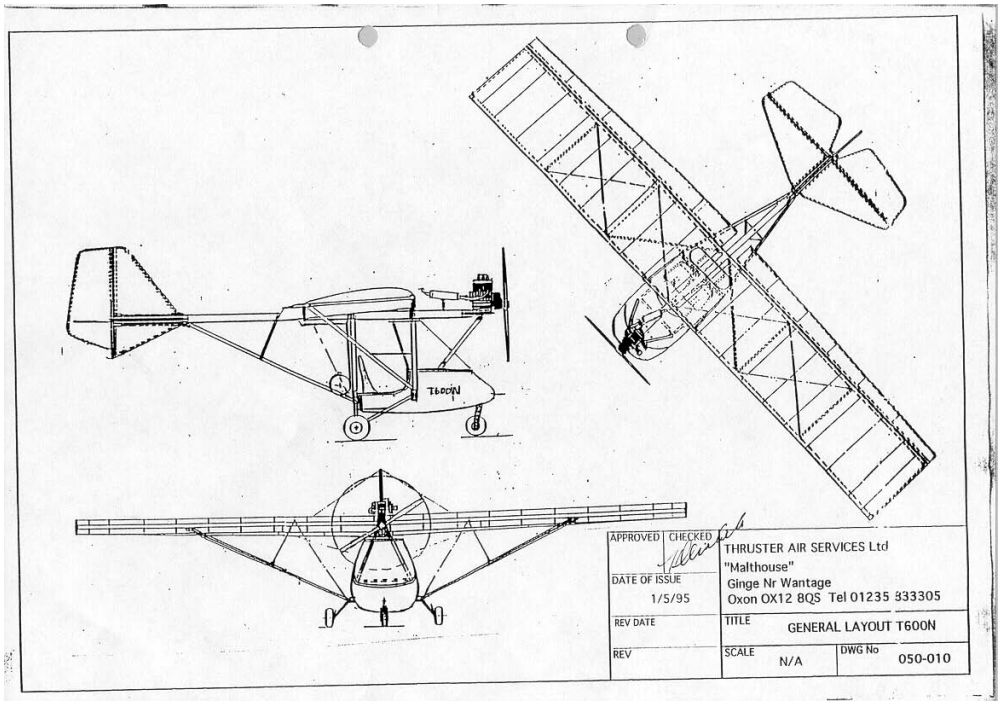
Issue History

	Issue No.	Reason and signatory
1	02/04/97	Initial Issue A C LOVE
2	10/05/99	Propeller option added to modification TAS 009 (AAN 26863) Rotax 582 engine option for T600T added to modification TAS 006 (AAN 26145) A J MAXWELL
3	06/07/99	Alternative material for wing and empennage skins - Modifications TAS 010 (AAN 26144) A J MAXWELL
4	07/09/99	Rotax 582 engine options for T600N with increased MTOW to 450 kg - Modification TAS 020 (AAN 27119) A J MAXWELL
5	23/05/03	BM52 Issue 5 removes reference to T600N (450 kg) Rotax are now being transferred to BM63 Issue 1. A J MAXWELL
6	06/11/07	Editorial Corrections A J MAXWELL
7	05/05/12	Editorial Corrections, Corrections to Cockpit Loading, Control Deflections, AAIB Safety action addition of “Area Of Special Attention” ANNEX E T LOVE

Illustration of Aircraft - 3 View

T600N



T600T

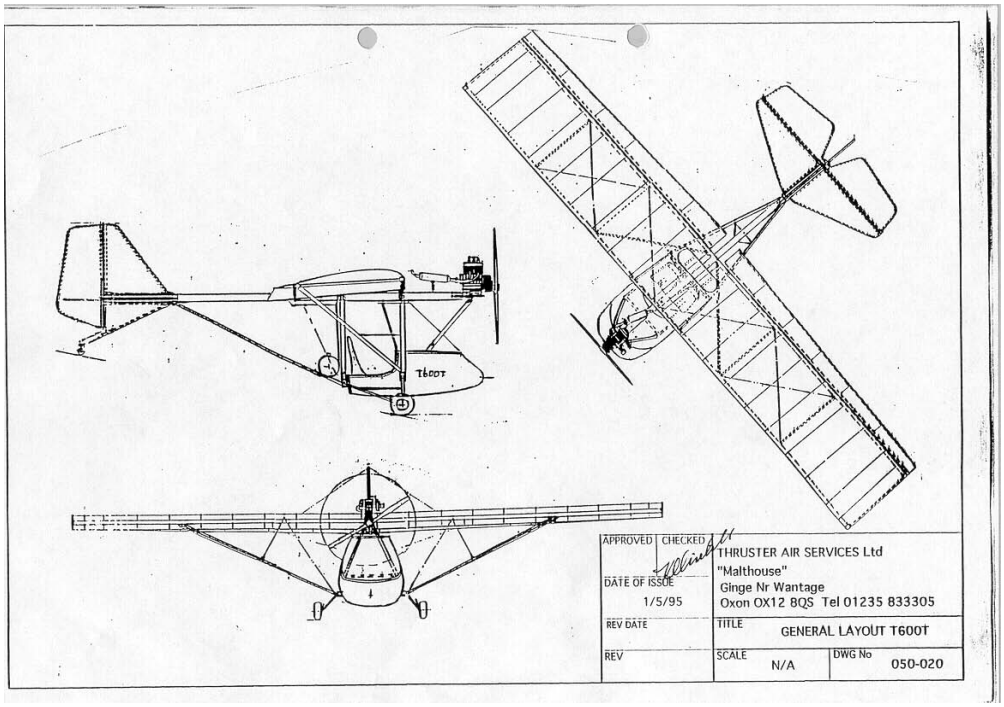


Illustration of Aircraft - Photograph

T600N

T600T

ANNEX A – MANDATORY MODIFICATIONS

1. None

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.

Thruster Mod	Date	Title
TAL 03-3	12/02/1992	Rotax Exhaust After Muffler
TAL 03-9	12/02/1992	GRP Wheel Spats
TAS 010	10/07/1997	Ultralam Wing Skins
TAS 013	02/12/1997	Ivo Prop Installation
TAS 018	29/09/1997	Disabled Person Mod “Crip Kit”
TAS 026	01/03/2004	Lever for existing Bungee Trim System
TAS 030	01/03/2004	Carburettor Inlet Heater
TAS 031	01/03/2004	Wing Strobe Lights
TAS 033	01/03/2004	Roll Trim Bias
TAS 034	01/03/2004	Battery Isolator Switch
TAS 035	01/03/2004	Extended Control Colum Stick (Training Aid)
TAS 037	01/03/2004	Wider Nose Wheel

ANNEX C
WEIGHING INFORMATION

1.	CG Datum:	Aft of Wing Leading Edge Tube
2.	Weighing attitude:	Wings and Fusetube Level
3.	Mainwheel moment arm:	T600N: 767.5 mm AOD T600T: 31.5mm AOD
4.	Nosewheel moment arm: Tailwheel moment arm:	750 (mm) (Forward) of datum 4075 (mm) (Aft) of datum
5.	Fuel moment arm:	1030 (mm) (Aft) of datum
6.	Crew moment arm:	423 (mm) (Aft) of datum (Front Seat position) 448 (mm) (Aft) of datum (Mid Seat Position) 473 (mm) (Aft) of datum (Rear Seat Position)
7.	Crew weights:	Minimum 55 kg / maximum 86 kg
8.	Aft CG Limit:	482 (mm) (Aft) of datum
9.	Fwd CG Limit:	389 (mm) (Aft) of datum

ANNEX D
EXAMPLE PLACARDS

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

[Type] [Engine] [Registration]		
Never Exceed Speed:	80	KIAS
Manoeuvring Speed :	70	KIAS
Stall Speed:	32	KIAS
Best climb speed:	50	KIAS
Best glide speed:	45	KIAS
Pitch Limits:	30° nose down, 30° nose up.	
Bank angle limits:	+/- 60°	
Maximum Stall entry rate:	1 kn/s	
Normal Acceleration Limits:	+4 / -2g	
Empty Weight:	199 kg *	
Max Take-Off Weight:	390 kg	
Minimum Cockpit Weight:	55 kg	
Maximum Cockpit Weight:	86 kg in each seat.*	
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 Placard (to be located near to filler cap)

FUEL
Capacity * Litres
50:1 2 Stroke oil

Cockpit Weight (kg)	Max. Fuel Load (litres)
180	
170	
….	
…. Or below	Full fuel

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

* dependant on Fuel Tank Fitted

(d) Switches

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

ANNEX E
Areas for Special Attention During Inspections

1. Carburettor Heating System to minimise risk of Carburettor Icing. An accident caused by Carburettor Icing has been reported which was due in part to the Electric Carburettor Heating system being fitted on the inlet of the Carburettor rather than the outlet in the vicinity of the butterfly valve. Check that the installation is correct and operational.