TYPE: Thruster T600N (450Kg)

(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 2

(4) DEFINITION OF BASIC STANDARD: Mod TAS001 Issue 1 dated 18 April 1995. Master Drawing
                   List form F10 Issue 1 dated 2 January 1997, Mod TAS 020,
                   TAS 023 (Part) and TAS 025

(5) COMPLIANCE WITH THE MICROLIGHT DEFINITION

   (a) MTOW 450 kg
   (b) No. Seats 2
   (c) Maximum Wing Loading 28.68 kg/m²
   (d) Vso 30.5 kn CAS
   (e) Permitted range of seat loading* 55-90 kg per seat
   (f) Typical Empty Weight (ZFW)
       Sprint 245 kg
       261 kg
   (g) Max ZFW + 172 kg crew + 1 hr fuel
       (21litres /15 kg)
       Sprint 450 kg
   (h) Max ZFW + 86 kg pilot + full fuel
       (21litres /15 kg)
       Sprint 385 kg
   (i) Max ZFW at initial permit issue 263 kg

*Note: It is the Pilot’s responsibility that the aircraft is not flown outside the permitted MTOW
(6) POWER PLANTS

<table>
<thead>
<tr>
<th>Designation</th>
<th>T600N 450</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engine Type</td>
<td>Rotax 582 2V DCDI</td>
</tr>
<tr>
<td>Reduction Gear</td>
<td>3:1</td>
</tr>
<tr>
<td>Exhaust System</td>
<td>ROTAX Double 90</td>
</tr>
<tr>
<td>Intake System</td>
<td>Twin Air Filter</td>
</tr>
<tr>
<td>Propeller Type</td>
<td>Brolga 68&quot; 3Blade</td>
</tr>
<tr>
<td>Propeller Dia x Pitch</td>
<td>Sprint 68&quot; @ 16 deg 68&quot; @ 17 deg</td>
</tr>
<tr>
<td>Noise Type Cert No.</td>
<td>44 Iss 17</td>
</tr>
<tr>
<td>AAN approving configuration</td>
<td>27119</td>
</tr>
</tbody>
</table>

(7) MANDATORY LIMITATIONS:

(a) Max Take-Off Weight 450 kg

(b) CG Limits
   - Aft Limit: 501mm Aft of datum
   - FWD Limit: 415mm Aft of datum

(c) CG datum Front Leading Edge Spar

(d) Cockpit Loadings
<table>
<thead>
<tr>
<th>Port</th>
<th>Starboard</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Min:</td>
<td>55 kg</td>
<td>Either Seat 55 kg</td>
</tr>
<tr>
<td>Max:</td>
<td>86 kg</td>
<td>86 kg</td>
</tr>
</tbody>
</table>

(e) Never Exceed Speed
   - Sprint 80 KIAS 102 KIAS

(f) Manoeuvring Speed
   - Sprint 60 KIAS 71 KIAS

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

(h) Fuel Contents (Max Useable) 49.7 Litres

(i) Power Plant (see Table below)
### Engine Specifications

<table>
<thead>
<tr>
<th>Engine</th>
<th>Rotax 582 2V DCDI Oil Premix</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max RPM</td>
<td>6500</td>
</tr>
<tr>
<td>MAX CHT</td>
<td>-NA-</td>
</tr>
<tr>
<td>MAX EGT</td>
<td>650C(1200F)</td>
</tr>
</tbody>
</table>

**Fuel Specification:** 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 Specification:** Super Two Stroke To TSCT (min)

**Gearbox Oil Specification:** API-GL5 or GL6 or SAR 140 EP or 85W 140 EP

**Fuel/Oil Mix:** 50:1

**Coolant Temperature:** 80°C (175°F) Max

**Oil Pressure:** -NA-

**Oil Temperature:** -NA-

**Fuel Pressure:** -NA-

(8) **INSTRUMENTS REQUIRED:**

<table>
<thead>
<tr>
<th>ASI</th>
<th>Altimeter</th>
<th>RPM</th>
<th>CHT / EGT</th>
<th>Compass</th>
<th>Coolant temp</th>
<th>Fuel Pressure</th>
<th>VSI</th>
<th>Slip ball</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 to 100 KIAS</td>
<td>0 - 20,000</td>
<td>0 - 8000</td>
<td>-NA- /Required 0-1700°F 0-900°C</td>
<td>Optional</td>
<td>0-240°F 0-120°C</td>
<td>Optional</td>
<td>Optional</td>
<td>Optional</td>
</tr>
</tbody>
</table>

(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) POH 210-072, Rotax Engine Operator Manual

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 the filler cap)
       See Annex D

   (d) Switches
       See Annex D

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

     See Annex A for required modifications.

     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.

NB: A definitive list of Mandatory actions is to be obtained by reference to CAA published Mandatory Permit Directories. The list on this TADS is not necessarily up-to-date. Also see Thruster website @ www.thruster.co.uk for latest information

(12) MINIMUM PERFORMANCE AT MAX TAKE-OFF WEIGHT

Rate of Climb: 448 fpm at 50 KIAS.

Stall or Minimum Flying Speed: 35 KIAS at 450kg MTOW / idle.
Issue History

<table>
<thead>
<tr>
<th>Issue No.</th>
<th>Reason and signatory</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>13/05/03 Initial Issue - 450 kg T600N Rotax aircraft originally recorded in TAD BM-52 Issue 4 on the 7 September 1999. These are now being transferred to BM-63 Issue 1 that also incorporates a fully enclosed rear fuselage, details of which are denoted as applicable to the “Sprint” variant as distinct from the basic T600N Rotax 582 A J MAXWELL</td>
</tr>
<tr>
<td>2</td>
<td>Not Formally Issued</td>
</tr>
<tr>
<td>3</td>
<td>20/11/07 Editorial Corrections A J MAXWELL</td>
</tr>
<tr>
<td>4</td>
<td>05/05/12 Editorial Corrections, Corrections to Cockpit Loading, Control Deflections, AAIB Safety action addition of “Area Of Special Attention” ANNEX E A LOVE</td>
</tr>
</tbody>
</table>

Illustration of Aircraft Type: Open Back
Illustration of Aircraft Type: Sprint
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.

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

ANNEX C
WEIGHING INFORMATION

1. CG Datum: Front of Leading Edge Spar Tube
2. Weighing attitude: Wings Level Fuse Tube Horizontal
3. Mainwheel moment arm: 767.5mm Aft of datum
4. Tailwheel moment arm: 750mm Fwd of datum
5. Fuel moment arm: 1030mm Aft of datum
6. Crew moment arm: a) 423 mm Aft of datum (Forward Seat Position)  
                        b) 448 mm Aft of datum (Mid Seat Position)  
                        c) 473 mm Aft of datum (Rear Seat Position)
7. Crew weights: Minimum 55 kg / maximum 90 kg
8. Aft CG Limit: 501 mm Aft of datum
9. Fwd CG Limit: 415 mm Aft of datum
ANNEX D

EXAMPLE PLACARDS

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

1. On cockpit fascia

   OPERATIONAL LIMITATIONS
   THE AIRCRAFT MUST BE OPERATED IN
   COMPLIANCE WITH THE OPERATING
   LIMITATIONS STATED IN THE FORM OF
   PLACARD MARKINGS AND MANUALS.
   NO AEROBATIC MANOUVRES
   INCLUDING SPINS ARE PERMITTED

2. Adjacent to fuel cock

   FUEL
   −φ−
   OFF

3. Adjacent to ignition switch on Instrument panel

   RUN
   ↑↓
   STOP

4. On cockpit fascia adjacent to A.S.I.

   \[ V_A 60\text{Kt} \ / \ V_{NE} 80\text{Kt} \]
   Version (a) and (b)

   \[ V_A 71\text{Kt} \ / \ V_{NE} 1020\text{Kt} \]
   Version (c) Sprint
5. Adjacent to Fuel pump switch on Instrument panel

![Fuel Pump Switch Image]

6. On Keeltube at rear of Engine [Port and Starboard]

![DANGER PROPELLER ARC]

7. On roof Panel adjacent to Trim Cord

![Elevator Trim Image]

8. On cockpit fascia adjacent to RPM gauge

![Max RPM 6500]

9. On cockpit fascia

![C of G Limits]

10. On cockpit fascia

![Warning]

11. On cockpit fascia

![Cockpit Load and Allowable Fuel Table]

*Note: This Placard is completed by Thruster Air Services for each individual Aircraft prior to its release.*
12. On cockpit fascia

NO SMOKING
FASTEN SEATBELTS

13. Adjacent to EGT gauge on Instrument panel

MAX EGT
650°C

MAX EGT
1200°F

14. Adjacent to EGT gauge on Instrument panel

MAX WATER TEMP
80°C

MAX WATER TEMP
175°F

Adjacent to Water Temp. gauge on Instrument panel

* The Placard displayed will be either Metric or Imperial units dependant on the scaling of the Gauge fitted.

15. On cockpit fascia.

CLASSIFICATION
MICROLIGHT

16. One of the following, Fuel Tank adjacent to filler cap

FUEL GRADE: RON 90
MIN
FUEL OIL MIX 50:1
CAPACITY 50 LITRES
USEABLE

17. On seat rail adjacent to Throttle lever both Port and Starboard.

POWER ON
↑

POWER OFF
18. On cockpit fascia.

19. On cockpit fascia adjacent to Push Start Switch

20. All switches are to be marked with functional 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.
MANDATORY PERMIT DIRECTIVE

The following action required by this Mandatory Permit Directive (MPD) is mandatory for applicable aircraft registered in the United Kingdom operating on a UK CAA Permit to Fly.

MPD: 2003-003 THRUSTER AIR SERVICES

Subject: Leading edge spar attachment bracket.

Applicability: Thruster Air Services Thruster T600 Series microlights.

Reason: During a routine airframe inspection of a Thruster T600N small cracks were found on the leading edge spar attachment bracket Part No 080-267; the cracks were located on the bend radius close to the outer edge of the bracket. The microlight had logged approximately 450 flying hours and since new had been tethered down outside when not flying. The tie down cables had been attached to the lift strut ends adjacent to the stainless brackets. It is likely that this particular microlight has undergone a significant number of cyclic stress reversals particularly due to being tethered outside in all weathers.

Compliance: Before further flight from the effective date of this MPD inspect the leading edge spar strut brackets for cracks in accordance with Thruster Air Services Service Bulletin TAS/SB09 Issue 2. At the same time an inspection is also required of the trailing edge, jury strut and rear lift cable brackets for cracks, as these brackets are all of a similar design. Replace any cracked brackets before further flight. Return cracked brackets to Thruster Air Services. Repeat these inspections prior to the first flight of the day. The pilot may perform these inspections.

A copy of the Service Bulletin and further information can be obtained from:

Thruster Air Services
Malthouse
Ginge
Near Wantage
OX12 8QS

Tel: 01235 833305
Fax: 01235 833390
Email: gordon@thruster.co.uk

Record compliance with this MPD in the aircraft log book.

This MPD becomes effective on 5 May 2003.
MANDATORY PERMIT DIRECTIVE

In accordance with Article 22(1) of the Air Navigation Order 2009 as amended the following action required by this Mandatory Permit Directive (MPD) is mandatory for applicable aircraft registered in the United Kingdom operating on a UK CAA Permit to Fly.

MPD: 2010-006 R1 THRUSTER AIR SERVICES

Subject: Exfoliation Corrosion Splits Aluminium Flying Strut Ends.

Applicability: Thruster T600, T300 and TST series microlight aircraft with aluminium alloy flying strut ends.

Reason: Corrosion splitting in this primary structure may weaken the part sufficiently that it may result in the loss of a wing and consequent loss of the aircraft.

This MPD has been revised in the light of the type design organisation’s investigations, to apply corrosion protection and increase period between inspections.

Compliance:

Before further flight (as required by the original MPD), carry out the inspection called up in Thruster Air Services Service Bulletin TAS/SB 13 Issue 2 (or later approved revision). If any crack is found replace the parts with sound fittings.

If compliance has been achieved within the last 10 flying hours in accordance with issue 1 of this MPD/SB, the results remain valid for the remainder of that 10 hours. Inspection may be carried out by the pilot/owner.

Carry out further inspections every 100 hours /6 months whichever is sooner.

Replacement of the strut ends with steel end fittings terminates the need for repeat inspection.

Ensure compliance with this MPD is recorded in the aircraft logbook.

Effective Date: 4 November 2010

1. This MPD was not published for consultation.
2. Enquiries regarding this MPD should be referred to Aircraft Certification Department, Civil Aviation Authority, Safety Regulation Group, Aviation House, Gatwick Airport South, West Sussex, RH6 0YR, United Kingdom.

Tel: +44 (0)1293 573726  Fax: +44 (0)1293 573976  Email: department.certification@caa.co.uk