MICROLIGHT TYPE ACCEPTANCE DATA SHEET (TADS)

NO: BMO-38 ISSUE: 1

TYPE 130SX/ALPHA AND ALPHA MK2

(1) MANUFACTURER: WING: AERIAL ARTS
TRIKE: AERIAL ARTS.

(2) UK IMPORTER: N/A

(3) CERTIFICATION BASIS: Reduced BCAR section S as per CAA letter dated 17/01/86, ref 9/3D/UL18

(4) DEFINITION OF BASIC STANDARDS:
As described in this TADS and MAAN 1169.

(5) DIMENSIONS/WEIGHT FOR COMPLIANCE WITH MICROLIGHT DEFINITION

| (a) Wing area          | 11.9m²  |
| (b) Span               | 8.84m   |
| (c) Standard Mean Chord| 1.34m   |
| (d) Dry Empty Weight   | 75 kg   |
| (e) Maximum Takeoff weight | 170 kg |
| (f) Wing loading (empty) | 6.3 kg/m² |
| (g) Wing Loading (max t/o weight) | 14.2kg/m² |
| (h) Fuel Capacity      | 9 to 25 litres |

(6) POWER PLANTS

<table>
<thead>
<tr>
<th>Designation</th>
<th>130sx/Alpha</th>
<th>130SX/Alpha 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engine Type</td>
<td>Rotax 277 inverted</td>
<td>Rotax 277 inverted</td>
</tr>
<tr>
<td>Reduction Gear</td>
<td>2.58:1</td>
<td>2.58:1</td>
</tr>
<tr>
<td>Exhaust System</td>
<td>Rotax</td>
<td>Rotax</td>
</tr>
<tr>
<td>Intake System</td>
<td>filter only</td>
<td>Filter only</td>
</tr>
<tr>
<td>Propeller Type</td>
<td>Reed</td>
<td>Reed</td>
</tr>
<tr>
<td>Propeller Dia x Pitch</td>
<td>58&quot;x32&quot;</td>
<td>58&quot;x32&quot;</td>
</tr>
<tr>
<td>Noise Type Cert No.</td>
<td>15m Iss 1</td>
<td>15m Iss 1</td>
</tr>
</tbody>
</table>
(7) MANDATORY LIMITATIONS:

(A) Max Take-off Weight 170kg
(B) C G Limits (3-Axis Aircraft): N/A
(C) C G Datum not required - weightshift
(D) Cockpit Loadings:
<table>
<thead>
<tr>
<th>Front</th>
<th>Rear</th>
<th>Total</th>
</tr>
</thead>
</table>
   Pilot and Baggage or Ballast (Min) | 55kg | ---- | 55kg |
   Pilot and Baggage | 90kg | ---- | 90kg |
(E) Permanent Ballast, Weight and Position: none.
(F) Empty C of G (3-Axis Aircraft): N/A
(G) Never Exceed Speed: 56kt 65mph
(H) Manoeuvring Speed: 49kt 56mph
(I) Permitted Manoeuvres: non-aerobatic (pitch < ±30 degrees, bank < 60 degrees)
(J) Fuel Contents (Max Useable): 9 litres to 25 litres

<table>
<thead>
<tr>
<th>Engine</th>
<th>Rotax 277</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max RPM</td>
<td>6800</td>
</tr>
<tr>
<td>MAX CHT</td>
<td>480 F</td>
</tr>
<tr>
<td>Fuel Spec</td>
<td>MON 83 RON 90 minimum octane</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Oil Spec</th>
<th>self mix 2 stroke</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fuel/Oil Mix</td>
<td>50:1</td>
</tr>
<tr>
<td>Max EGT</td>
<td>1200 F</td>
</tr>
<tr>
<td>Oil Press</td>
<td>n/a</td>
</tr>
<tr>
<td>Oil Temp</td>
<td>n/a</td>
</tr>
</tbody>
</table>
INSTRUMENTS REQUIRED FOR TYPE ACCEPTANCE:

An Airspeed indicator, 0-70mph minimum.
An Altimeter, (which may be worn on the pilots wrist).

CONTROL DEFLECTIONS (3-Axis Systems): N/A

- Pitch Control
  - Up: -
  - Down: -

- Tailplane Trim
  - Up: -
  - Down: -

- Ailerons
  - Up: -
  - Down: -

- Rudder
  - Left: -
  - Right: -

- Steering
  - Left: -
  - Right: -

- Spoilers

PILOT'S NOTES, MAINTENANCE MANUALS REFERENCES:

Aerial Arts 130SX/Alpha Owners Manual.

MANDATORY MODIFICATIONS/SERVICE BULLETINS/AIRWORTHINESS DIRECTIVES ETC:

None

MINIMUM PERFORMANCE AT MAX TAKE-OFF WEIGHT

- Rate of Climb: 640 fpm at 28kt 32mph
- Stalling Speed: 25 kt 28 mph

PLACARDS

The following information must be clearly placarded in view of the pilot:

- Empty weight
- Max and Min cockpit load
- Maximum takeoff weight = 170 kg
- VNE speed = 65 mph
- WARNING - NO LOOSE ITEMS IN COCKPIT.
PLACARDS CONT’D.

Close to the fuel tank:
Fuel type, quantity and mix ratio

At the ignition switch:
Ignition on/off

At the fuel tap:
fuel on/off.

ADDITIONAL POINTS TO NOTE FOR INSPECTORS:

1) See defect reports A2.01 to A2.08 (Aerial Arts Wings.)

2) Ensure compliance with the general recommendations of BMMAA documents WG and TG.

3) The fuel system should be checked extremely carefully for leakage particularly at the fuel cap. There have been instances reported of fuel caps leaking. The system can be replaced with a section S Chaser one.

4) Check carefully around attachment bolt holes between the wing and the trike for cracks. Any visible cracks will imply replacement before further flight.

5) The design of the hang bracket is two 16 gauge plates welded together with a circular tube which is the bearing for the hang point. Cracking has been known to start where the plates are welded to the tube. If any cracking is discovered, the bracket must be replaced with one where the bracket extends right round the top of the keel to continuously down the other side i.e., like an inverted U. It is possible to fit a Section S Chaser hang bracket. This involves removal of the keel assembly from the wing and replacement of at least the outer sleeve of the keel. A new hole must be drilled transversely through the keel to accommodate the Section S bracket.

6) Abrasion has been noted of the trailing edge of the wing keel pocket where it joins the sail trailing edge due to the cross boom pull up cables. Abrasion and stitching damage in this area is quite critical and should be put right by a competent aviation sail loft. The pull back cables should be protected against inflicting further such abrasion damage.

7) Obviously, the consequences of loose items being dropped into the propeller of this aircraft can be extremely serious because of the alignment of the trailing edge with the propeller disc and the light wing trailing edge construction. A placard stating "no loose items in the cockpit" must be in view of the pilot.
8) The undercarriage drag link to main axle connection should be inspected very closely for cracks and/or yielding. These connection points have been known to fail when landing heavily on rough ground.

9) The welded fitting which joins the two sections of the base tube together underneath the pilots seat should be inspected very carefully. These were originally two tubes butt welded together and sometimes the weld did not penetrate the tube walls properly. The Section S fittings have a washer welded between the two tubes as a diaphragm. In case of doubt the fitting can be replaced with a Section S one.

10) The transverse bolt attaching the main undercarriage legs to the main structure must be tight enough to prevent rotation of the legs. Rotation of the legs causes unpredictable rear wheel steer.

NOTES FOR CHECK PILOTS:

1) The aircraft has small wheels. Avoid particularly rough or boggy ground.

2) Watch the trailing edge when gradually increasing speed to VNE - some trailing edge flutter is acceptable but gross movement liable to cause damage is not. Slow down if excessive flutter is apparent. Note TADS placarded VNE speed. Contact the BMAA technical office if unacceptable flutter is apparent below VNE.
Aerial Arts 130SX/Alpha and Alpha 2

PHOTOGRAPHS