CIVIL AVIATION AUTHORITY – SAFETY REGULATION GROUP

MICROLIGHT TYPE APPROVAL DATA SHEET (TADS)

NO: BM - 7, ISSUE: 4

TYPE: SIROCCO 377GB

(1) MANUFACTURER: Aviasud Engineering/Midlands Ultralights Ltd (no longer trading)

BMAA is responsible for ensuring continued airworthiness

(2) UK IMPORTER: N/A

(3) CERTIFICATION: BCAR SECTION S, (in the modification state at the date of manufacture or modification of any example)

(4) DEFINITION OF BASIC STANDARD: Midland Ultralights Ltd GA Drawing No. 8000 Issue 1 dated 11 March 1995

(5) COMPLIANCE WITH THE MICROLIGHT DEFINITION
   (a) MTOW 238 kg
   (b) No. Seats 1
   (c) Maximum Wing Loading 17.01 kg/m²
   (d) Permitted range of pilot weights 55 - 91 kg
   (e) Typical Empty Weight (ZFW) 137 kg
   (f) ZFW + 86 kg pilot + full fuel (20 litres / 14.4 kg) 237 kg
   (g) Max allowed ZFW at initial permit issue 138 kg
<table>
<thead>
<tr>
<th>(6)</th>
<th>POWER PLANTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Designation</td>
<td>Sirocco 377 GB</td>
</tr>
<tr>
<td>Engine Type</td>
<td>Rotax 377 fan cooled Inverted</td>
</tr>
<tr>
<td>Reduction Gear</td>
<td>Rotax 2.58:1</td>
</tr>
<tr>
<td>Exhaust System</td>
<td>Rotax</td>
</tr>
<tr>
<td>Intake System</td>
<td>Rotax side intake-muffler. K&amp;N Filter</td>
</tr>
<tr>
<td>Propeller Type</td>
<td>Midland Ultralights 2 blade wood, square tipped</td>
</tr>
<tr>
<td>Propeller Dia x Pitch</td>
<td>57&quot; x 32&quot;</td>
</tr>
<tr>
<td>Noise Type Cert No.</td>
<td>14M Issue 2</td>
</tr>
<tr>
<td>AAN approving</td>
<td>18632(P) Addendum 1</td>
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</tbody>
</table>
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(7) MANDATORY LIMITATIONS:

(A) Max Take-Off Weight 238 kg

(B) CG Limits
   Aft limit 76.1” aft of datum
   Fwd Limit 71.4” aft of datum

(C) CG datum Aircraft nose

(D) Cockpit Loadings
   Min 55 kg
   Max 91 kg

(E) Never Exceed Speed 86 mph IAS

(F) Manoeuvring Speed 53 mph IAS

(G) Permitted Manoeuvres
   Non Aerobatic, bank angle not exceeding 60º
   Normal acceleration limits, +4 / -2 g
   Flight is permitted only in ambient temperatures below 25ºC

(H) Fuel Contents (Max Useable) 20 litres
### Power Plant

<table>
<thead>
<tr>
<th>Engine</th>
<th>Rotax 377</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max RPM</td>
<td>6500</td>
</tr>
<tr>
<td>Max CHT</td>
<td>250°C</td>
</tr>
<tr>
<td>Max EGT</td>
<td>650°C</td>
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<tr>
<td>Fuel Spec</td>
<td>83 MON or 90 RON minimum unleaded to BS(EN)228 or 97+ octane 4-star MOGAS leaded fuel to BS4040, or AVGAS 100LL</td>
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<tr>
<td>Engine Oil Spec</td>
<td>2 stroke oil SAE 20</td>
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<tr>
<td>Gearbox oil spec</td>
<td>AP1-GL5 or -GL6, SAE140EP or 85W-140EP</td>
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<tr>
<td>Fuel/Oil Mix</td>
<td>50:1</td>
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<tr>
<td>Max. Coolant Temp.</td>
<td>N/A</td>
</tr>
<tr>
<td>Max. Oil Pressure</td>
<td>N/A</td>
</tr>
<tr>
<td>Min. Oil Pressure</td>
<td>N/A</td>
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<tr>
<td>Oil Temperature</td>
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### Instruments Required:

<table>
<thead>
<tr>
<th>ASI</th>
<th>Altimeter</th>
<th>RPM</th>
<th>EGT</th>
<th>Compass</th>
<th>Coolant temp</th>
<th>CHT</th>
<th>Fuel Pressure</th>
<th>VSI</th>
<th>Slip ball</th>
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<tbody>
<tr>
<td>Required</td>
<td>Required</td>
<td>Optional</td>
<td>Optional</td>
<td>Optional</td>
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### CONTROL DEFLECTIONS:

<table>
<thead>
<tr>
<th>Control</th>
<th>Deflection</th>
<th>Control</th>
<th>Deflection</th>
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<tbody>
<tr>
<td>Elevator UP</td>
<td>135 mm ± 5 mm</td>
<td>Tailplane trim UP</td>
<td>10 mm ± 1.5 mm</td>
</tr>
<tr>
<td>Elevator DOWN</td>
<td>200 mm ± 5 mm</td>
<td>Tailplane trim DOWN</td>
<td>22 mm ± 1.5 mm</td>
</tr>
<tr>
<td>Spoilers UP</td>
<td>150 mm ± 10 mm</td>
<td>Rudder LEFT</td>
<td>250 mm ± 5 mm</td>
</tr>
<tr>
<td>Spoilers Down</td>
<td>N/A</td>
<td>Rudder RIGHT</td>
<td>250 mm ± 5 mm</td>
</tr>
</tbody>
</table>
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(10) PILOT'S NOTES, MAINTENANCE MANUALS REFERENCES:

10.1 Manuals approved for use with this aircraft.

(a) Midland Ultralights Ltd Document Ref. 15 Sirocco 377GB Flight Manual
(b) Manufacturer's engine manual

10.2 The following limitations 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)

See Annex D

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

See Annex A for required modifications.

(12) MINIMUM PERFORMANCE AT MAX TAKE-OFF WEIGHT

Rate of Climb: 800 fpm
Stall or Minimum Flying Speed: 27 mph IAS
Issue History

<table>
<thead>
<tr>
<th>Issue No.</th>
<th>Date</th>
<th>Reason and signatory</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>27/05/85</td>
<td>Initial Issue</td>
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<tr>
<td></td>
<td></td>
<td>W A Bevan</td>
</tr>
<tr>
<td>2</td>
<td>02/11/98</td>
<td>BMAA take over responsibility for continued airworthiness</td>
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<tr>
<td></td>
<td></td>
<td>C J Whittaker</td>
</tr>
<tr>
<td>3</td>
<td>30/03/99</td>
<td>Mandatory Permit Directive MPD 1999-05 added</td>
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<tr>
<td></td>
<td></td>
<td>C J Whittaker</td>
</tr>
<tr>
<td>4</td>
<td>08/07/03</td>
<td>Document revised to new format</td>
</tr>
</tbody>
</table>

J Barratt
CIVIL AVIATION AUTHORITY – SAFETY REGULATION GROUP

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ANNEX A – MANDATORY MODIFICATIONS

Mandatory Permit Directive MPD 1995-097 requires inspection of the elevator push rod control tube by a BMAA inspector at intervals of no more than 50 flying hours.

Mandatory Permit Directive MPD 1999-005 R1 requires that before flight, the stabilator and mountings are modified in accordance with MAAN 1336 or by an equivalent modification scheme approved by the BMAA or CAA.

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.

ANNEX C - WEIGHING INFORMATION

1. CG Datum: Aircraft nose (positive aft of datum)
2. Weighing attitude: Balances under each mainwheel and under the tailskid, tailskid raised so that nosewheel is just off the ground.
3. Mainwheel moment arm: 80.4” aft of datum
4. Tailskid moment arm: 216.6” aft of datum
5. Fuel moment arm: 74.8” aft of datum (20 litres maximum capacity)
6. Crew moment arm: N/A
7. Crew weights: Minimum 55 kg / maximum 91 kg (maximum reducible, not below 86 kg, if required).
8. Aft CG Limit: 76.1” aft of datum
9. Fwd CG Limit: 71.4” aft of datum
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ANNEX D - PLCARDS

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

Max take-off weight not to exceed 238 kg
CG limits between 71.4” and 76.1” AOD
Cockpit loadings must be between 55 and 91 kg
$V_{NE}$ 86 mph IAS
$V_A$ 53 mph IAS
Manoeuvres limited to non-aerobatic, bank angle not exceeding 60°

(b) Engine Limitations Placard (to be located near to engine instruments)

A placard showing the limitations for all the 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)

Max usable fuel contents 20 litres.
Fuel/oil ratio 50:1 2-stroke oil
Fuel specification: 83 MON or 90 RON minimum unleaded to BS(EN)228 or 97+ octane 4-star MOGAS leaded fuel to BS4040, or AVGAS 100LL
ANNEX E - POINTS FOR SPECIAL ATTENTION

In service, the following points have been found to be commonly recurring problems, and Inspectors must give special attention to the following both during initial approval, and during later inspections.

1. Following cases of insufficient quality control in carrying out the modification, it must be ensured that MAAN1336 (modifications to tailplane) has been properly carried out.
2. (blank)
3. (blank)
4. (blank)
5. (blank)
6. (blank)
7. (blank)
8. (blank)
9. (blank)
10. (blank)
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: 1995–097  MIDLAND ULTRALIGHTS

Subject: Elevator Pushrod – Inadequate clearance through fuselage frame.

Applicability: Midland Ultralights Sirocco 377GB microlights.

Reason: The BMAA has notified the CAA of Defect No (94) 394, relating to a Sirocco 377GB microlight. The elevator push-pull control tube was found worn through where it passes through a fuselage frame. The tube wear is difficult to see without removing the control tube. The loss of this tube or its fouling would lead to loss of control of the aircraft. This defect has occurred during the previous 125 flying hours.

Compliance: Before further flight unless previously accomplished and thereafter every 50 flying hours the elevator push-pull control tube must be inspected for wear by a BMAA inspector.

BMAA inspectors are to sign the Airframe / Engine Log-book to confirm that the inspection has been carried out and report any similar defects to the BMAA Chief Inspector.

Enquiries regarding the inspection, should be referred to Mr D Marshall – BMAA Chief Inspector, 397 Bretch Hill, Banbury, Oxon, OX16 0JA.

This MPD becomes effective on 29 December 1995 and supersedes Letter to Owners / Operators No 1389.

Enquiries regarding this MPD should be made to the United Kingdom Civil Aviation Authority, Aircraft Maintenance Approvals Section, Safety Regulation Group, Aviation House, Gatwick Airport South, West Sussex RH6 0YR. Telephone: +44 (0)1293 573149 Telefax: +44 (0)1293 573993.
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: 1999-005 R1 MIDLAND ULTRALIGHTS

Subject: Modification to stabilator and mountings.

Applicability: Midland Ultralights Sirocco 377GB and Sirocco 377GB (Modified) microlights.

Reason: Following an accident to a Sirocco 377GB involving the loss of the stabilator in flight, the AAIB made recommendations which were accepted by the CAA. Accordingly, all Sirocco 377GB and Sirocco 377GB (Modified) microlights must be modified to address the following points:

1. Improve the design of the cross shaft and locking mechanism to prevent detachment.

2. Improve the integrity of the leading edge joint to prevent separation of the stabilator upper and lower halves.

3. Improve the resistance of the structure to moisture.

4. Replace the tailplane pivot bearings by a type which will minimise the effects of moisture absorption.

5. Determine and control the tension limits for the elevator anti-balance tab return bungee.

A suitable modification has been produced and approved by the BMAA under MAAN 1336.

Compliance: Before further flight from the effective date of this MPD, the stabilator and mountings must be modified in accordance with MAAN 1336 or an alternative modification scheme approved by the BMAA or the CAA. After modification a flight test must be performed to show that the microlight is free from harmful vibration.

Record compliance with this MPD in the aircraft log book.

This MPD becomes effective on 22 March 1999. Revision 1 (editorial amendment) becomes effective on 18 January 2001.

Enquiries regarding this MPD should be made to the United Kingdom Civil Aviation Authority, Applications and Certification Section, Safety Regulation Group, Aviation House, Gatwick Airport South, West Sussex RH6 0YR. Telephone: +44 (0)1293 573149 Telefax: +44 (0)1293 573993.