CIVIL AVIATION AUTHORITY

MICROLIGHT TYPE APPROVAL DATA SHEET (TADS)

NO: BM80 ISSUE: 2

TYPE: QUIK GTR

(1) MANUFACTURER: P & M Aviation Ltd, Unit B, Crawford St, Rochdale, Lancs OL16 5NU
(2) UK IMPORTER: N/A
(3) CERTIFICATION: BCAR section S issue 5
(4) DEFINITION OF BASIC STANDARD: Airworthiness Submission QUIK GTR, GA drawing YQF-000 issue A

(5) COMPLIANCE WITH THE MICROLIGHT DEFINITION

(a) MTOW 450 kg
(b) No. Seats 2
(c) Maximum Wing Loading 34.6kg/m²
(d) Vso 39mph CAS
(e) Permitted range of pilot weights 55-110 kg front seat.
   0-110 kg rear seat.
   Total Maximum crew weight 220kg
(f) Typical Empty Weight (ZFW) 234Kg
(g) ZFW + 172 kg crew + 1 hr fuel (18litres /13 kg) 419Kg
(h) ZFW + 86 kg pilot + full fuel (65litres /47 kg) 367Kg
(i) Max ZFW at initial permit issue 265Kg
CIVIL AVIATION AUTHORITY

MICROLIGHT TYPE APPROVAL DATA SHEET (TADS)

NO: BM80 ISSUE: 2

(6) POWER PLANTS

<table>
<thead>
<tr>
<th>Designation</th>
<th>Rotax 912 ULS</th>
<th>Rotax 912 ULS</th>
<th>Rotax 912 UL</th>
<th>Rotax 912 UL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engine Type</td>
<td>4 cylinder 4 stroke</td>
<td>4 cylinder 4 stroke</td>
<td>4 cylinder 4 stroke</td>
<td>4 cylinder 4 stroke</td>
</tr>
<tr>
<td>Reduction Gear</td>
<td>2.43:1 gearbox</td>
<td>2.43:1 gearbox</td>
<td>2.27:1 gearbox</td>
<td>2.27:1 gearbox</td>
</tr>
<tr>
<td>Exhaust System</td>
<td>CKT Twin Exhaust</td>
<td>Rotax Side Mounted</td>
<td>CKT Twin Exhaust</td>
<td>Rotax side mounted</td>
</tr>
<tr>
<td>Intake System</td>
<td>K&amp;N intake filter With Skydrive carb body heater</td>
<td>K&amp;N intake filter With Skydrive carb body heater</td>
<td>K&amp;N intake filter With Skydrive carb body heater</td>
<td>K&amp;N intake filter With Skydrive carb body heater</td>
</tr>
<tr>
<td>Propeller Type</td>
<td>Warp Drive</td>
<td>Warp Drive</td>
<td>Warp Drive</td>
<td>Warp Drive</td>
</tr>
<tr>
<td>Propeller Dia x Pitch</td>
<td>172cm Dia 16° at tip</td>
<td>172cm Dia 16° at tip</td>
<td>172cm, 11° at tip</td>
<td>172cm, 11° at tip</td>
</tr>
<tr>
<td>Noise Type Cert No.</td>
<td>187M issue 4</td>
<td>187M issue 4</td>
<td>187M issue 4</td>
<td>187M issue 4</td>
</tr>
<tr>
<td>AAN approving configuration</td>
<td>AAN BMAA-1050 Issue 1</td>
<td>AAN BMAA-1050 Issue 1</td>
<td>AAN BMAA-1050 Issue 1</td>
<td>AAN BMAA-1050 Issue 1</td>
</tr>
</tbody>
</table>
(7) **MANDATORY LIMITATIONS:**

(A) **Max Take-Off Weight** 450kg

(B) **CG Limits**
N/A not critical flexwing with predefined hang point position on the keel. The rear of the two hangpoints should be used.

(C) **CG datum**
Nosewheel axle.

(D) **Cockpit Loadings**
(solo front seat only)

<table>
<thead>
<tr>
<th></th>
<th>Front</th>
<th>Rear</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Min</td>
<td>55kg</td>
<td>0</td>
<td>55kg</td>
</tr>
<tr>
<td>Max</td>
<td>110kg</td>
<td>110kg</td>
<td>220kg</td>
</tr>
</tbody>
</table>

(E) **Never Exceed Speed** 120mph IAS

(F) **Manoeuvring Speed** 90mph IAS

(G) **Permitted Manoeuvres**
45° Nose up / 45° nose down
Non Aerobatic, max bank 60°
Normal acceleration limits, +4 / -0g

(H) **Fuel Contents (Max Useable)** 65L
(I) Power Plant see table

<table>
<thead>
<tr>
<th>Engine</th>
<th>Rotax 912 ULS</th>
<th>Rotax 912 UL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max RPM</td>
<td>5800max 5min. 5500 contin.</td>
<td>5800max 5min. 5500 contin.</td>
</tr>
<tr>
<td>MAX CHT</td>
<td>135°C **</td>
<td>150°C **</td>
</tr>
<tr>
<td>MAX EGT</td>
<td>880°C</td>
<td>880°C</td>
</tr>
<tr>
<td>Fuel Spec</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Engine Oil Spec</td>
<td>API - SG semi synthetic 4 stroke motorcycle engine oil.</td>
<td>API SF or SG semi synthetic 4 stroke motorcycle engine oil.</td>
</tr>
<tr>
<td>Gearbox oil spec</td>
<td>Common supply with engine</td>
<td>Common supply with engine</td>
</tr>
<tr>
<td>Fuel/Oil Mix</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Coolant Temperature</td>
<td>120°C</td>
<td>120°C</td>
</tr>
<tr>
<td>Oil Pressure</td>
<td>2-5 bar above 3500 rpm</td>
<td>2-5 bar above 3500 rpm</td>
</tr>
<tr>
<td>Oil Temperature</td>
<td>50-130°C</td>
<td>50-140°C</td>
</tr>
<tr>
<td>Fuel Pressure</td>
<td>0.4-0.15 bar</td>
<td>0.4-0.15 bar</td>
</tr>
</tbody>
</table>

(I) *Unleaded preferred. See flight manual for limitations on AVGAS.

(II) **With 100% Ethylene glycol or Evans NPG coolant. See SB121

(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>Oil Temp</th>
<th>Oil Press</th>
<th>Fuel Pressure</th>
<th>VSI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Required (0-150mph.)</td>
<td>Required 0-20,000 ft</td>
<td>0-6000</td>
<td>0-200°C</td>
<td>Optional</td>
<td>Measured by CHT sensor</td>
<td>0-150 degC</td>
<td>0-8 bar</td>
<td>Optional</td>
<td>Optional</td>
</tr>
</tbody>
</table>

TADS BM80 issue 2  Page 4 of 13
(9) CONTROL DEFLECTIONS:

N/A weight shift control limits defined by structure geometry.
Control bar move right = roll left
Control bar push out = pitch up
Trim switch up = slow trim
Push left pedal = taxi steering right
Push left toe = brakes on
Push right toe = throttle open
Hand throttle forward = throttle open
Ignition switches up = switch on
Choke forward = choke on
Tap aligned with body = fuel on

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

10.1 Manuals approved for use with this aircraft.
   (a) QUIK GTR Operator’s manual issue 1 or as amended.
   (b) Rotax 912 and 912-S Operator’s manual
   (c) Rotax 912 and 912-S Maintenance 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)
       N/A limitations are programmed into electronic Rotax FLYDAT instrument or marked as red lines on the instrument faces
   (c) Fuel Limitations Placard (to be located near to filler cap)
       See Annex D.
   (d) Switches
       See Annex D.
(11) MANDATORY MODIFICATIONS / SERVICE BULLETINS / AIRWORTHINESS DIRECTIVES ETC:

<table>
<thead>
<tr>
<th>SB132 Issue 4</th>
<th>Sail Reinforcement Test</th>
<th>Brooktesting</th>
<th>18/06/13</th>
</tr>
</thead>
</table>

Annual Bettsometer test with a 1.2mm diameter needle, with wing sails fitted and tensioned enough to prevent puckering of sailcloth at the needle, is to be carried out to in accordance with Service Bulletin 133 issue 3. 
Applied loads:
Upper & lower surface: 1360 grammes, for wings with Yellow Aramid Reinforcement.
Or
Upper & lower surface: 1000 grammes, for wings with Black Technora reinforcement.
Loads to be applied spanwise and chordwise.

Stitches: 1360 grammes using a 1.2mm diameter hook, pull at 90degs to surface of tensioned sail.

Annual Brooksmeter test after first 2 years, using Brooksmeter, on untensioned wing trailing edge is to be carried out in accordance with Service Bulletin 132 issue 4. 
Applied loads:
Aramid X-05 Yellow sail reinforcement: 9kgf
or
Technora Black sail reinforcement: 8kgf

(12) MINIMUM ISA PERFORMANCE AT MAX TAKE-OFF WEIGHT

Rate of Climb:
850 fpm at 55mph IAS (912 engine)
1000fpm at 55mph IAS (912-S engine)

Stall or Minimum Flying Speed:
39mph IAS at MTOW / idle.
**CIVIL AVIATION AUTHORITY**

**MICROLIGHT TYPE APPROVAL DATA SHEET (TADS)**

**No: BM80 Issue: 2**

### Issue History

<table>
<thead>
<tr>
<th>Issue No.</th>
<th>Date</th>
<th>Reason and Signatory</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>30/04/2012</td>
<td>Initial Issue D S CORTIZO</td>
</tr>
<tr>
<td>02</td>
<td>18/03/2015</td>
<td>Betts &amp; Brooks Test Limits Amended &amp; General Update</td>
</tr>
</tbody>
</table>

A C LOVE
Illustration of Aircraft - 3 View
ANNEX A
MANDATORY MODIFICATIONS

CAA Mandatory modifications:
Nil

P&M compulsory modifications:
Nil

ANNEX B
APPROVED OPTIONAL MODIFICATIONS

<table>
<thead>
<tr>
<th>Mod Ref</th>
<th>Description</th>
<th>Issued</th>
</tr>
</thead>
<tbody>
<tr>
<td>PG371</td>
<td>Instructor bars</td>
<td>03/10/02</td>
</tr>
<tr>
<td>M135</td>
<td>BRS Softpack Parachute</td>
<td>04/02/05</td>
</tr>
<tr>
<td>M137</td>
<td>Low drag panniers</td>
<td>06/04/05</td>
</tr>
<tr>
<td>M153</td>
<td>Landing light</td>
<td>31/08/05</td>
</tr>
<tr>
<td>M157</td>
<td>Standard GPS &amp; Power socket</td>
<td>12/01/06</td>
</tr>
<tr>
<td>M218</td>
<td>Enigma instrument fit</td>
<td>21/08/08</td>
</tr>
<tr>
<td>M224</td>
<td>Avio LED position &amp; strobe lights</td>
<td>15/10/08</td>
</tr>
<tr>
<td>M226</td>
<td>Rotax 912 80hp engine</td>
<td>07/05/09</td>
</tr>
<tr>
<td>M256 part 1</td>
<td>Explorer wheels and brakes</td>
<td>26/11/11</td>
</tr>
<tr>
<td>M270</td>
<td>Sail TE Reinforcement</td>
<td>07/12/12</td>
</tr>
<tr>
<td>M275</td>
<td>Roll Trimmer</td>
<td>20/05/14</td>
</tr>
<tr>
<td>M282</td>
<td>Fournales Shocks</td>
<td>25/07/14</td>
</tr>
<tr>
<td>M286</td>
<td>Spinner</td>
<td>12/12/14</td>
</tr>
</tbody>
</table>

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

The table below is a guide only. Empty weights include unusable fuel, full oil, electrolyte and prepared ready for flight.

<table>
<thead>
<tr>
<th>ITEM</th>
<th>WEIGHT kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quik -912s Trike</td>
<td>174</td>
</tr>
<tr>
<td>GTR wing only</td>
<td>59</td>
</tr>
</tbody>
</table>

**OPTIONAL ITEMS**

- DELUXE SEAT (1.150), ADD      0.46
- 50mm FRONT SEAT BOOSTER PAD  0.27
- 50mm FRONT S/BACK BOOSTER PAD ET 0.25
- 50mm REAR BOOSTER PAD        0.27
- 100mm REAR BOOSTER PAD       0.42
- CONTROL BAR PROTECTION (2)   0.05
- FRONT STRUT PROTECTION       0.04
- LYNX ANTENNA                0.19
- LYNX FILTER, POWER INT, PTT  0.81
- INSTRUCTOR BARS             2.4
- AEROTOW SYSTEM              1.5
- ICOM HAND HELD RADIO        0.3
- M135 BALLISTIC PARACHUTE    13
ANNEXE D
EXAMPLE PLACARDS

Title
Flight Limitations:
Engine Limitations:
Aircraft Weights:
Baggage Limitations:
Fuel Type, Capacity and Mix Ratio:
Fuel Cock On/Off Positions:
Ignition Switch On/Off Positions:
Propeller Pitch Setting:
Hand Throttle:
Wiring Loom Disconnection Warning:
Trimmer Setting:

Tip Turn Adjusters:
Latch Locking:
Oil Type and Quantity:
Propeller Pitch:
Fuel Load Limitations:

Location
On LH wing upright
On panel
On basetube
On baggage container
On rear suspension leg
On seat
On ignition switch bracket
On airbox or radiator
On throttle unit
On airbox or carb covers
On trim switch (electric trim)
On trim display (electric trim)
On leading edge tube tips
On seat next to latch
On oil cap
On oil cooler
In the cockpit

TRIM INDICATOR AND TRIM SWITCH PLACARDS
CIVIL AVIATION AUTHORITY

MICROLIGHT TYPE APPROVAL DATA SHEET (TADS)

NO: BM80 ISSUE: 2

MAIN PLACARD

<table>
<thead>
<tr>
<th>Flight Limitations</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maneoeuvring SPD</td>
<td>90 MPH</td>
</tr>
<tr>
<td>Never Exceed Vne</td>
<td>120 MPH</td>
</tr>
<tr>
<td>Max Cross Wind</td>
<td>12 MPH</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Engine Limitations</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max Oil Pressure</td>
<td>7 Bar</td>
</tr>
<tr>
<td>Min Oil Pressure</td>
<td>1.5 Bar</td>
</tr>
<tr>
<td>Max Oil Temp</td>
<td>(912) 140 DegC</td>
</tr>
<tr>
<td>Min Oil Temp</td>
<td>(912S) 50 DegC</td>
</tr>
<tr>
<td>Max CHT</td>
<td>(912) 150 DegC</td>
</tr>
<tr>
<td>Max Cont RPM</td>
<td>5500</td>
</tr>
<tr>
<td>Max RPM5</td>
<td>800</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Payload Limitations</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max. Take Off Weight</td>
<td>450 KG</td>
</tr>
<tr>
<td>Max. Cockpit Load</td>
<td>220 KG</td>
</tr>
<tr>
<td>Max. PI Load</td>
<td>110 KG</td>
</tr>
<tr>
<td>Max. Passenger Load</td>
<td>110 KG</td>
</tr>
<tr>
<td>Min. PI Load</td>
<td>55 KG</td>
</tr>
</tbody>
</table>

**DO NOT EXCEED MAX. LOAD**

**WARNING**

- Minimum Full Power Climb Speed 40 MPH
- Do not exceed 60 degrees angle of bank
- This aircraft is non-aerobatic
- No Whipstalls, Wingovers, Tailslides, Loops, Rolls or Spins
- No Negative G
- Maintain positive ‘G’ Loading at all times
- Fly solo from front seat only

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TADS BM80 issue 2  Page 12 of 13
MISCELLANEOUS PLACARDS. IGNITION SWITCH PLACARD IS SPLIT AND USED FOR BOTH MAG SWITCHES.
In accordance with 22(1) of 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.

<table>
<thead>
<tr>
<th>Type Approval Holder’s Name:</th>
<th>Type/Model Designation(s):</th>
</tr>
</thead>
<tbody>
<tr>
<td>P&amp;M Aviation</td>
<td>Pegasus Quik, Quik GT 450, QuikR and Quik GTR</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Title:</th>
<th>Sail Reinforcement Degradation – Additional Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manufacturer:</td>
<td>P&amp;M Aviation Ltd.</td>
</tr>
</tbody>
</table>

| Applicability: | Pegasus Quik, Quik GT450, QuikR and Quik GTR with X-05 or Technora reinforcement bands. |

| Reason: | An incident in 2011 with a 4 year/1500 Hours flight time sail showed that the standard Bettsometer test used to predict sail strength degradation could not be used. This issue was addressed by the application of MPD No. 2011-005 Revision 1. A subsequent incident in September 2012, with a 6 year/1000 Hours flight time sail, has necessitated a revision to the previously defined test limits and compliance periods. Additionally, the applicability has been revised to incorporate the Quik GTR, which was not in production at the time of the original MPD. As such, P&M Aviation has revised Service Bulletin (SB) 132 to Issue 2 in order to reflect the revised criteria. |

| Effective Date: | 21 November 2012 |
**Compliance/Action:**

For sails more than 2 years old or more than 500 hours flight time, whichever comes first, perform the tests as described in P&M Aviation Ltd Service Bulletin Number 132 Issue 2. This is to be achieved within the next 10 flight hours or 4 months from the effective date of this MPD, whichever occurs first. During this period high G manoeuvres must be avoided.

For all aircraft, perform the tests as described in P&M Aviation Ltd Service Bulletin Number 132 Issue 2 at each annual inspection.

In the event of the reinforcement bands failing the tests described in SB 132 Issue 2, the aircraft must not be flown until satisfactory resolution is received from P&M Aviation Limited.

**Note:**

a) A copy of Service Bulletin Number 132 Issue 2 may be obtained from:

P & M Aviation  
Unit B  
Crawford Street  
Rochdale  
Lancashire  
OL16 5NU

Tel: 01706 655134  
Email: flying@pmaviation.co.uk

---

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

<table>
<thead>
<tr>
<th>Reference Publications</th>
<th>P &amp; M Aviation Ltd Service Bulletin Number 132 Issue 2</th>
</tr>
</thead>
</table>

**Remarks:**

1. This MPD was not posted for consultation due to the urgency of the requirement.

2. Enquiries regarding this MPD should be referred to: Aircraft Evaluation and Surveillance Department, Civil Aviation Authority, Safety Regulation Group, Aviation House, Gatwick Airport South, West Sussex RH6 0YR.

Tel: +44 (0)1293 573303  
Fax: +44 (0)1293 573976  
E-mail: department.certification@caa.co.uk
In accordance with Article 41(1) of The Air Navigation Order 2016, 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.

<table>
<thead>
<tr>
<th>Type Approval Holder’s Name:</th>
<th>Type/Model Designation(s):</th>
</tr>
</thead>
<tbody>
<tr>
<td>P&amp;M Aviation Ltd</td>
<td>Quik GTR, QuikR</td>
</tr>
</tbody>
</table>

**Title:** Wing – Hang Bolt Installation– Inspection and Modification

**Manufacturer:** P&M Aviation Ltd

**Applicability:** Quik GTR, QuikR

**Reason:** Some instances of the hang bolt head rotating have been found with damage to the safety lanyard. The pinch nut slackens off, promoting fretting wear in the assembly. If left unchecked, eventually the lanyard could fail allowing the retaining nut to depart the aircraft and the main hang bolt to come out. The bolt rotation is driven by yawing loads between the trike and wing in turbulence.

Note the hang bolt is intended to be tight and the bearing surface should be between the pylon top bearings and the pylon sleeve, not the hang bolt. Sometimes the nylon bearings swell and stick in the sleeve, new bearings are made in acetal which does not swell.

**Effective Date:** 25 November 2016

**Compliance/Action:** Compliance is required as follows, unless previously accomplished:

1. Within the next 25 flying hours from the effective date of this MPD or at the next annual inspection, whichever is sooner, inspect the hang bolt for tightness and any evidence of rotation, as shown by twisting of the lanyard. See Figure 1 in P & M Aviation Ltd Service Bulletin 141. If there are signs of damage to any of the hang bolt components, obtain replacement components and carry out the action in paragraph 2 before further flight.

2. Within the next 25 flying hours from the effective date of this MPD or at the next annual inspection, whichever is sooner, install the hang bolt locking plate in accordance with paragraph 2 of P & M Aviation Ltd Service Bulletin 141.
### Compliance/Action Cont:

3. Record the inspection and any necessary rectification action from paragraph 1 and the modification action from paragraph 2 in the aircraft technical log in accordance with paragraph 3 of P & M Aviation Ltd Service Bulletin 141.

4. Inspect the security of the M6 bolt securing the locking plate every 50 flying hours in accordance with paragraph 3 of P & M Aviation Ltd Service Bulletin 141.

5. Inspect the hang bolt installation, including the locking plate and the tightness of the pinch nut, at each annual inspection in accordance with paragraph 4 of P & M Aviation Ltd Service Bulletin 141.

### ENSURE COMPLIANCE WITH THIS MPD IS RECORDED IN THE AIRCRAFT LOGBOOK

|-------------------------|================================================================================|

### Remarks:

1. Based on the required actions and compliance time, the CAA decided to issue this MPD with a request for comments, postponing the public consultation process until after publication.

2. Enquiries regarding this Mandatory Permit Directive should be referred to: GA Unit, Civil Aviation Authority, Safety and Airspace Regulation Group, Aviation House, Gatwick Airport South, West Sussex, RH6 0YR. Tel: +44 (0)1293 573988 E-mail: ga@caa.co.uk

3. Enquiries regarding the Service Bulletin should be referred to: P & M Aviation Ltd, Elm Tree Park, Manton, Marlborough, Wiltshire. SN8 1PS. Tel: +44 (0) 1672 861350.
In accordance with Article 41(1) of The Air Navigation Order 2016, 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.

<table>
<thead>
<tr>
<th>Type Approval Holder’s Name:</th>
<th>P&amp;M Aviation Ltd</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type/Model Designation(s):</td>
<td>Various, see below</td>
</tr>
<tr>
<td>Title:</td>
<td>Clevis Pin / Split Ring Installations – Inspection / Replacement</td>
</tr>
<tr>
<td>Manufacturer:</td>
<td>P&amp;M Aviation Ltd</td>
</tr>
<tr>
<td>Applicability:</td>
<td>All Microlights where P &amp; M Aviation Ltd is the Type Approval Holder:</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>TADS No.</th>
<th>Aircraft Type</th>
<th>TADS No.</th>
<th>Aircraft Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>BM2</td>
<td>Gemini Sprint</td>
<td>BM43</td>
<td>Mainair Mercury</td>
</tr>
<tr>
<td>BM3</td>
<td>Tri-Flyer Sprint</td>
<td>BM44</td>
<td>Pegasus Quasar 2 TC</td>
</tr>
<tr>
<td>BM4</td>
<td>Gemini Flash</td>
<td>BM45</td>
<td>Cyclone AX3//503</td>
</tr>
<tr>
<td>BM5</td>
<td>Panther XL-S</td>
<td>BM46</td>
<td>Pegasus Quantum 15 (Rotax 2-stroke engines)</td>
</tr>
<tr>
<td>BM9</td>
<td>Pegasus XL-R</td>
<td>BM47</td>
<td>Mainair Blade</td>
</tr>
<tr>
<td>BM10</td>
<td>Pegasus Flash</td>
<td>BM50</td>
<td>Pegasus Quantum 15-912</td>
</tr>
<tr>
<td>BM14</td>
<td>Gemini Flash 2</td>
<td>BM51</td>
<td>Mainair Blade 912</td>
</tr>
<tr>
<td>BM16</td>
<td>Scorcher</td>
<td>BM53</td>
<td>Cyclone AX2000</td>
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<tr>
<td>BM17</td>
<td>Pegasus Flash 2</td>
<td>BM54</td>
<td>Mainair Rapier</td>
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<td>BM23</td>
<td>Gemini Flash 2 Alpha</td>
<td>BM55</td>
<td>Pegasus Quantum 15-HKS</td>
</tr>
<tr>
<td>BM25</td>
<td>Pegasus XL-Q</td>
<td>BM56</td>
<td>Flight Design CT2K (rudder control)</td>
</tr>
<tr>
<td>BM27</td>
<td>Chaser S</td>
<td>BM57</td>
<td>Pegasus Quik</td>
</tr>
<tr>
<td>BM28</td>
<td>Pegasus Photon</td>
<td>BM58</td>
<td>Quik GT450</td>
</tr>
<tr>
<td>BM31</td>
<td>Chaser S 1000</td>
<td>BM59</td>
<td>Flight Design CTSW (rudder control)</td>
</tr>
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<td>BM33</td>
<td>Chaser S 508</td>
<td>BM60</td>
<td>Quik R</td>
</tr>
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<td>BM37</td>
<td>Chaser S 447</td>
<td>BM61</td>
<td>Quik GTR</td>
</tr>
<tr>
<td>BM38</td>
<td>Pegasus Quasar</td>
<td>BM62</td>
<td>PulsR</td>
</tr>
<tr>
<td>BM42</td>
<td>Pegasus Quasar – TC</td>
<td>BM63</td>
<td>Flight Design CTSL (rudder control)</td>
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</tbody>
</table>
**Reason:**

Following maintenance, a clevis pin came out of the RP-4 roll trim system pulley on a QuikR causing a left turn. The split ring securing the clevis pin had come out. It is not known if the ring was disturbed during the maintenance.

The split ring which came out was the same “spiral start” pattern as that which has caused trouble before (see Service Bulletin 139). This pattern of ring has no positive stop, so that simple rotation of the ring (e.g. caused by it getting caught on something) will cause it to disengage. Disengagement of the split ring and subsequent clevis pin departure could affect the control of the aircraft.

**Effective Date:** 24 November 2016

**Compliance/Action:**

Compliance is required as follows, unless previously accomplished:

1. Before further flight, from the effective date of this MPD, inspect all clevis pin / split ring installations on the aircraft in accordance with paragraph 2 of P & M Aviation Ltd Service Bulletin 144.

2. If the inspection in paragraph 1 reveals any spiral start pattern split rings they must be replaced in accordance with paragraph 2 of P & M Aviation Ltd Service Bulletin 144 before further flight.

3. Record the inspection from paragraph 1 and any necessary rectification action from paragraph 2 in the aircraft technical log in accordance with paragraph 3 of P & M Aviation Ltd Service Bulletin 144.

4. Repeat the actions in paragraphs 1, 2 and 3 at each Permit to Fly revalidation.

ENSURE COMPLIANCE WITH THIS MPD IS RECORDED IN THE AIRCRAFT LOGBOOK

**Reference Publications:**


**Remarks:**

1. This MPD was not posted for consultation because of the urgency of the requirement.

2. Enquiries regarding this Mandatory Permit Directive should be referred to: GA Unit, Civil Aviation Authority, Safety and Airspace Regulation Group, Aviation House, Gatwick Airport South, West Sussex, RH6 0YR.

   Tel: +44 (0)1293 573988  
   E-mail: ga@caa.co.uk
In accordance with Article 41(1) of The Air Navigation Order 2016, 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.

<table>
<thead>
<tr>
<th>Type Approval Holder’s Name:</th>
<th>P&amp;M Aviation Ltd</th>
</tr>
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<tbody>
<tr>
<td>Type/Model Designation(s):</td>
<td>Various, see below</td>
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<tr>
<td>Title:</td>
<td>Hang Bolt plus Lanyard – Inspection / Replacement</td>
</tr>
<tr>
<td>Manufacturer:</td>
<td>P&amp;M Aviation Ltd</td>
</tr>
<tr>
<td>Applicability:</td>
<td>All Microlights of the following types where P &amp; M Aviation Ltd are the Type Approval Holder:</td>
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<tr>
<td>TADS No. Aircraft Type</td>
<td></td>
</tr>
<tr>
<td>BM44</td>
<td>Pegasus Quasar 2 TC</td>
</tr>
<tr>
<td>BM46</td>
<td>Pegasus Quantum 15</td>
</tr>
<tr>
<td></td>
<td>(Rotax 2-stroke engines)</td>
</tr>
<tr>
<td>BM50</td>
<td>Pegasus Quantum 15-912</td>
</tr>
<tr>
<td>BM56</td>
<td>Pegasus Quantum 15-HKS</td>
</tr>
<tr>
<td>BM66</td>
<td>Pegasus Quik</td>
</tr>
<tr>
<td>BM70</td>
<td>Quik GT450</td>
</tr>
<tr>
<td>BM77</td>
<td>QuikR</td>
</tr>
<tr>
<td>BM80</td>
<td>Quik GTR</td>
</tr>
<tr>
<td>BM81</td>
<td>PulsR</td>
</tr>
<tr>
<td>Reason:</td>
<td>The lanyard on a hang bolt plus lanyard component was found to be under swaged which allowed it to detach at a low load. The lanyard is essential to stop the hang bolt pinch nut from slackening off. Should the pinch nut fall off there would not be anything to prevent the hang bolt from potentially migrating out of its housing and the wing would then detach.</td>
</tr>
<tr>
<td>Effective Date:</td>
<td>21 February 2017</td>
</tr>
</tbody>
</table>
Compliance/Action: Compliance is required as follows, unless previously accomplished:

1. Before further flight, inspect the hang bolt plus lanyard, part number YQB-31302. If the lanyard is from batch number A9835, A9868 or A9880, before further flight, remove the hang bolt plus lanyard from the aircraft and return to P & M Aviation Ltd for replacement. Note: The hang bolt plus lanyard part number and batch number are marked on the sleeve shrunk on to the lanyard.

2. Record the inspection from paragraph 1 and any necessary rectification action in the aircraft technical log in accordance with paragraph 3 of P & M Aviation Ltd Service Bulletin 146.

3. Repeat the actions in paragraphs 1 and 2 at each Permit to Fly revalidation.

ENSURE COMPLIANCE WITH THIS MPD IS RECORDED IN THE AIRCRAFT LOGBOOK

Reference Publications: P & M Aviation Ltd Service Bulletin Number 146 Issue 1 dated 6 January 2017

Remarks:

1. This MPD was not posted for consultation because of the urgency of the requirement.

2. Enquiries regarding this Mandatory Permit Directive should be referred to: GA Unit, Civil Aviation Authority, Safety and Airspace Regulation Group, Aviation House, Gatwick Airport South, West Sussex, RH6 0YR.

   Tel: +44 (0)1293 573988
   E-mail: ga@caa.co.uk
In accordance with Article 41(1) of The Air Navigation Order 2016, 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.

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<td>P&amp;M Aviation Ltd</td>
<td>Various, see below</td>
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</table>

<table>
<thead>
<tr>
<th>Title:</th>
<th>Rigging Cables with Roll Swaged End Terminals – Inspection / Replacement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manufacturer:</td>
<td>P&amp;M Aviation Ltd</td>
</tr>
</tbody>
</table>

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<tr>
<th>Applicability:</th>
<th>All Microlights of the following types where P &amp; M Aviation Ltd are the Type Approval Holder:</th>
</tr>
</thead>
<tbody>
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<td>TADS No. Aircraft Type</td>
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<tr>
<td>BM4</td>
<td>Gemini Flash</td>
</tr>
<tr>
<td>BM10</td>
<td>Pegasus Flash</td>
</tr>
<tr>
<td>BM14</td>
<td>Gemini Flash 2</td>
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<td>BM16</td>
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<td>Pegasus Flash 2</td>
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<tr>
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<td>Gemini Flash 2 Alpha</td>
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<tr>
<td>BM43</td>
<td>Mainair Mercury</td>
</tr>
<tr>
<td>BM47</td>
<td>Mainair Blade</td>
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<td>BM51</td>
<td>Mainair Blade 912</td>
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<tr>
<td>BM54</td>
<td>Mainair Rapier</td>
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<td>BM70</td>
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<td>QuikR</td>
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<tr>
<td>BM80</td>
<td>Quik GTR</td>
</tr>
<tr>
<td>BM81</td>
<td>PulsR</td>
</tr>
</tbody>
</table>
Reason:

A P&M Quik GT450 in a flying school had a partial failure of a lower side rigging cable (Part No. YQD-045) when recovering from a spiral manoeuvre, within the limits of the flight envelope. These cables are arranged in pairs, to give a backup load path. The second cable carried the load and the aircraft landed safely. This is the only recorded lower side cable failure since 1984. The partial failure was at the edge of the roll swaged terminal end. The alternative cable terminations using Nicopress sleeves and thimbles allow more progressive flexing of the cable.

The incident Quik GT450 lower side rigging cables had been in use for 1050 hours and 9 years. The aircraft had been subject to an accident and rebuilt once in its life. It was also operated quite near the coast where it is probable that sea air chlorides could have affected the material. There were corrosion pits in the S316 stainless steel material which accelerate fatigue failures. CLSCC (Chloride Stress Corrosion Cracking) is known to affect stainless steel.

The cable fitting was at the bottom end of the cable, where solutions can wick down it and collect. The strand failures were caused by bending and tensile fatigue because of cracks propagating from scratches and corrosion pits on the surface.

All the remaining cables had broken strands at the edge of the roll swaged terminals. Some of these strands had been failed for some time, as shown by discolouration of the failure surfaces. The cable is 7 cores of 7 strands construction.

Failure of a lower rigging cable would potentially reduce the integrity of the wing and hazard the aircraft.

Effective Date: 15 May 2017
Compliance/Action: Compliance is required as follows, unless previously accomplished:

1. Before further flight, for lower side, front and rear rigging cables with roll swaged terminal ends with more than 750 flying hours or 7 years of service, whichever comes first, visually inspect at the edge of the roll-swaged terminal(s) using a magnifying glass with a power of at least 3x. Inspect closely for damage i.e. broken strands, corrosion, mechanical damage or slippage. If any damage is found, replace the affected cable before further flight. If no damage is found, replace the cable within 25 flying hours. See paragraphs 1 and 2 of P & M Aviation Ltd Service Bulletin 147 including the warning in paragraph 2.

2. Within 25 flying hours, for lower side, front and rear rigging cables with roll swaged terminal ends with less than 750 flying hours and less than 7 years of service, visually inspect at the edge of the roll-swaged terminal(s) using a magnifying glass with a power of at least 3x. Inspect closely for damage i.e. broken strands, corrosion, mechanical damage or slippage. If any damage is found, replace the affected cable before further flight. If no damage is found, replace the cable at 750 flying hours or 7 years of service, whichever comes first. See paragraphs 1 and 2 of P & M Aviation Ltd Service Bulletin 147 including the warning in paragraph 2.

3. Removal and replacement of any airframe structural cable requires a duplicate inspection - see paragraph 3 of P & M Aviation Ltd Service Bulletin 147.

4. Record the inspection from paragraph 1 or paragraph 2 and any necessary rectification action in the aircraft technical log in accordance with paragraph 3 of P & M Aviation Ltd Service Bulletin 147.

5. Repeat the inspection in paragraph 2 at each Permit to Fly revalidation and replace damaged cables as necessary. Replace the cables at 750 flying hours or 7 years of service, whichever comes first.

ENSURE COMPLIANCE WITH THIS MPD IS RECORDED IN THE AIRCRAFT LOGBOOK

Reference Publications: P & M Aviation Ltd Service Bulletin Number 147 Issue 1 dated 10 May 2017

Remarks:

1. This MPD was not posted for consultation because of the urgency of the requirement.

2. Enquiries regarding this Mandatory Permit Directive should be referred to: GA Unit, Civil Aviation Authority, Safety and Airspace Regulation Group, Aviation House, Gatwick Airport South, West Sussex, RH6 0YR.

   Tel: +44 (0)1293 573988
   E-mail: ga@caa.co.uk