BMAA Defect Alert #0060: P&M Aviation Ltd SB143 – Hang Bolt Security

Dated: 07/10/2016

SB143 – Hang Bolt Security

On some aircraft it has been observed that the hang bolt has been rotating over time, normally evidenced by a twisted lanyard. A new locking plate has been devised to stop this from happening.

Twisted lanyard and new locking plated installation (note orientation of scallop).

Identical in concept to SB 141 (which mandates the fitment of the locking plate for the QuikR & GTR), although 143 is ADVISORY for the following types (according to issue 1 of the bulletin):

- BM44 (Pegasus Quasar II variants)
- BM46 (Pegasus Quantum 2 stroke variants)
- BM50 (Pegasus Quantum 4 stroke)
- BM56 (Quantum HKS)
- BM66 (Pegasus Quik)
- BM70 (Quik GT450).

Please see the SB for full details, A copy of which follows this defect note.
If asked to inspect and sign off this bulletin, please ensure the locking plate has been installed in the correct orientation (scallop towards the nose).

If you have any questions please contact P&M Aviation.

Kind regards,
Rob

Rob Mott
Chief Inspector
British Microlight Aircraft Association
01869 336005
robert@bmaa.org
SERVICE BULLETIN NUMBER 143, Issue 1.

TITLE
Hang Bolt security.

CLASSIFICATION
P&M Aviation have classified this bulletin as advisory.

COMPLIANCE
Within the next 25 hours or at next permit revalidation if sooner.

APPLICABILITY
BMAA TADS BM44 (Pegasus Quasar II variants), BM46 (Pegasus Quantum 2 stroke variants), BM50 (Pegasus Quantum 4 stroke), BM56 (Quantum HKS), BM66 (Pegasus Quik), BM70 (Quik GT450)

1) INTRODUCTION

Some instances of the hang bolt head rotating have been found with damage to the safety lanyard, particularly if the bolt head is on the right hand side. The pinch nut slackens off, promoting wear in the assembly. The bolt rotation is driven by yawing loads between the trike and wing in turbulence.

![Fig 1 twisted lanyard](image)
2) ACTION

It has been found that with Rotax 912 series 4 stroke powered aircraft, if the hang bolt head is on the left hand (port) side, the nut tends to tighten up. If the bolt head is on the right hand (starboard) side, the bolt tends to rotate nut tends to slacken off and the lanyard becomes twisted.

Because the Rotax 462,503 and 582 2 stroke engines have opposite propeller rotation, the bolt head on these aircraft should be on the right hand side.

Inspect the hang bolt assembly, lanyard and clip for condition. The nut should be tightened up as much as possible by hand.

Note the hang bolt is intended to be tightened up 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.

If desired, a hang bolt locking plate (modification M308) may be installed. The plate is intended to fit on the right hand side as shown below. This location is suitable for both 2 stroke and 4 stroke powered aircraft.

![Fig 2 Locking Plate ZMS-365 (Modification M308)](image-url)
1) Unscrew the rear right hand side M6 fastener which secure the hang bracket block. It may be necessary to apply some heat to the block with a hot air gun to soften the Loctite.

2) Fit the locking plate ZMS-365 and align it using the hang bolt with the head locating in the locking plate. The scallop goes forwards, to clear the upright channels when folding the control frame back. Coat the threads of the countersunk M6 x 35mm fastener with Loctite 222 and tighten to 10NM torque.

Warning: Never leave the hang bolt in the wing hang bracket when de-rigging the wing as if the control frame is folded back, the uprights, top fittings and hang bolt will all be damaged. Always keep the bolt and nut, secured with the lanyard, in the top of the trike pylon. This will also ensure the trike pylon bushes are retained during transport.

3) Documentation

The aircraft technical log must be signed “Service bulletin SB143 (hang bolt security inspection) carried out” by an owner/operator against his or her pilot’s licence number. If the locking plate is installed, the M6 bolt securing the locking plate must be checked for security every 50 hours.

4) Continued Airworthiness

At each permit revalidation, the inspector must check the technical log has been signed as above and that the hang bolt assembly is secure including the locking plate if fitted.

ISSUED BY  W.G.Brooks  DATE

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