TITLE	QuikR Keel pocket webbing and flight limitations.
CLASSIFICATION	The UK CAA have classified this directive as Mandatory.
COMPLIANCE	Inspection before further flight.
APPLICABILITY	Webbing – up to S/N 8474 except 8370 and 8452. Flight limitations – all QuikR

INTRODUCTION -

In practice for a competition well outside the certificated flight envelope (a very high g manoeuvre at a bank angle of 90 degrees and full power 110mph), a case was reported of the keel pocket rear webbing grommet pulling out. This allowed the keel pocket to move forwards approximately 30mm. No other damage was caused, there was no detectable effect on the flight characteristics and the aircraft landed safely. An example of the failure is shown below.

INVESTIGATION-

The keel pocket is restrained from moving forwards in order to control the shape of the centre section aerofoil profile. Lift load on the centre section causes a forward load on the keel pocket, which has a diagonal reinforcement.

Previous flexwing aircraft have not been able to substantially exceed the Va maximum manoeuvring speed. The QuikR has very high performance and can be overstressed, overspeeded and taken outside the placarded attitude limits by the use of large control inputs, especially above Va (90mph). Care must be taken not to overspeed in spiral dives. Control becomes more responsive at high speed. Manoeuvres must be kept within the flight limitations and at a safe altitude to allow recovery. Inputs must be regulated especially above Va so as to remain within the placarded flight envelope which is:

Bank maximum 60 degrees, Pitch maximum +-45 degrees,
Positive g manoeuvres only, no whip-stalls.
Limit load +4g
Va 90mph, VNe 120mph.

See operators manual for further details and limitations.

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ACTION –

1)Before further flight, inspect the keel pocket webbing and ensure the grommet is in place and the keel pocket is restrained from moving forwards. If it is secure, no further immediate action is needed except 3 below. If the keel pocket attachment has been pulled out, modification M229 must be carried out before further flight and the airframe inspected for other signs of overloading (e.g. bent leading edges). The new design has a 50mm wider webbing, folded over with an internal webbing reinforcement at 90 degrees. See below, and also drawing YQE-065 issue B.

2) Within the next 2 years or 300 hours flight time (whichever is earlier), modification M229 must be carried out which doubles the strength of the keel pocket attachment. M229 must be carried out by P&M Aviation Ltd or a sail loft approved by P&M in writing. The airframe must be removed from the sail to carry out the work. See drawing YQE-065. Inspect the area as part of the aircraft daily inspection.

3) For aircraft with an analogue ASI, a green and yellow arc in addition to the VNe red line must be placarded on the instrument face. Green must be 42 – 90mph, yellow 90 – 120mph and the red line at 120mph (see fig 1) For aircraft with the Enigma or similar colour display, ensure the green, yellow and red arcs are set up on the ASI presentation with a flashing warning at VNe. Suitable analogue ASI arcs may be obtained from CTaviation **chris@ctaviation.freeserve.co.uk**

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Fig 1. ASI markings for QuikR in MPH.

DOCUMENTATION

The above inspection must be recorded in the aircraft technical log.

This safety directive must be appended to the operator's manual.

CONTINUED AIRWORTHINESS

Check modification M229 is carried out within the timespan in (2) above.
Check for security of the keel pocket connection as part of the daily inspection.
Check the ASI speed arcs are in place at each annual revalidation.

Approved	WGBrooks	Date 08/09/09	Checked	[signature]	Date 08/09/09

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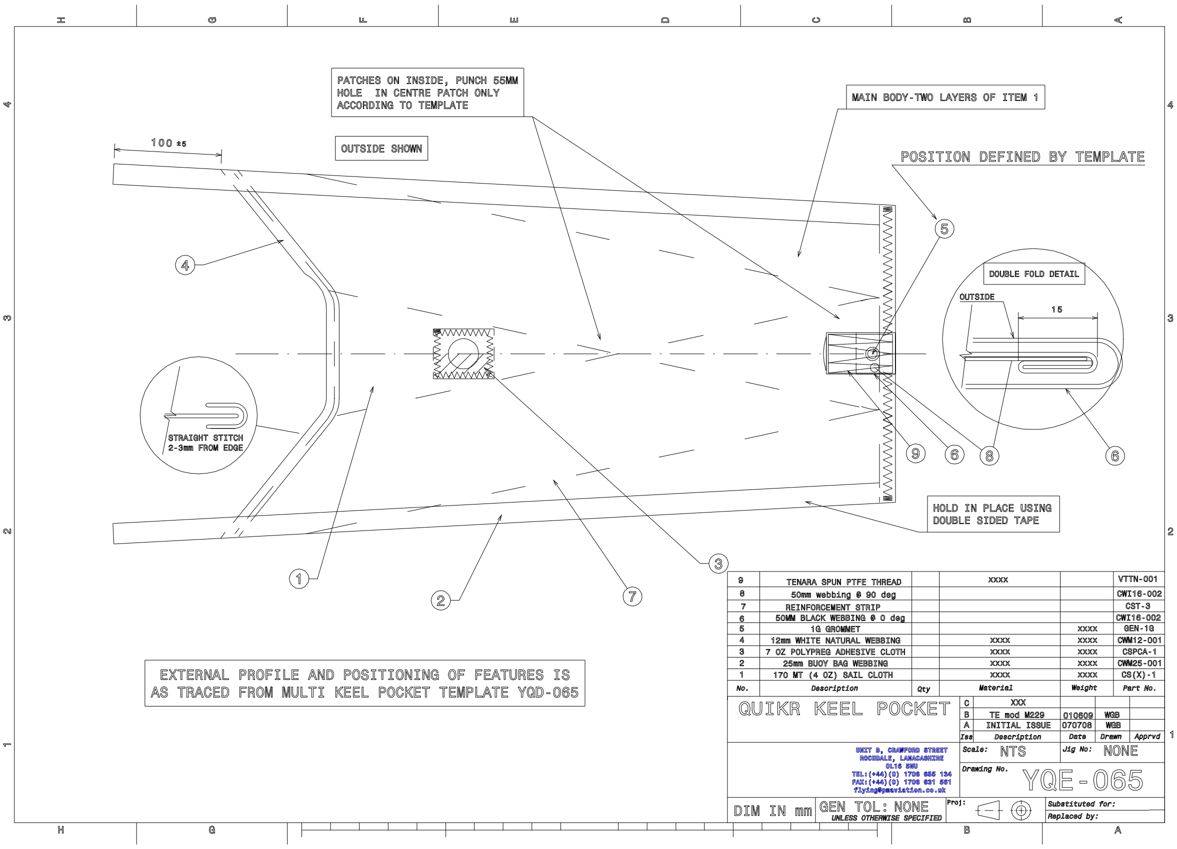
Appendix 1 Drawing YQE-065 issue B



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