

Service Bulletin

Replacement of Undercarriage Guide Bracket Bolts

Applicability: All EuroFOX **tail dragger** aircraft operating under a UK BMAA administered Permit to Fly microlights.

Compliance By: Within the next 20 operational hours from the date of this SB

Ongoing compliance: At every 500 hours or 1000 landings, whichever is the sooner. Inspection suggested at each routine inspection point. Any removed bolts to be thrown away.

Background:

On a EuroFOX heavy use tail wheel glider tug aircraft with tundra tyres, the forward bolt failed on the undercarriage clamp bracket (containing 2 bolts M8 hex head 8.8 strength). The clamp bracket then swung away from the undercarriage leg just after take-off, and the leg itself being unrestrained, pivoted about its central fixing point in the middle and underside of the fuselage. A successful and very skilled landing was made on one leg and the tail wheel, with minimal damage.

On inspection, it became apparent that the bolt had failed in fatigue just under the bolt head. The fatigue crack had been present for a while, but is not easy to find during normal inspections. The earlier SB on this subject (SB2 2015) did not prevent this failure, therefore to minimise risk, it is required to change the assembly method and “life” of this bolt.

The new fixing method will improve the load transfer within the assembly.



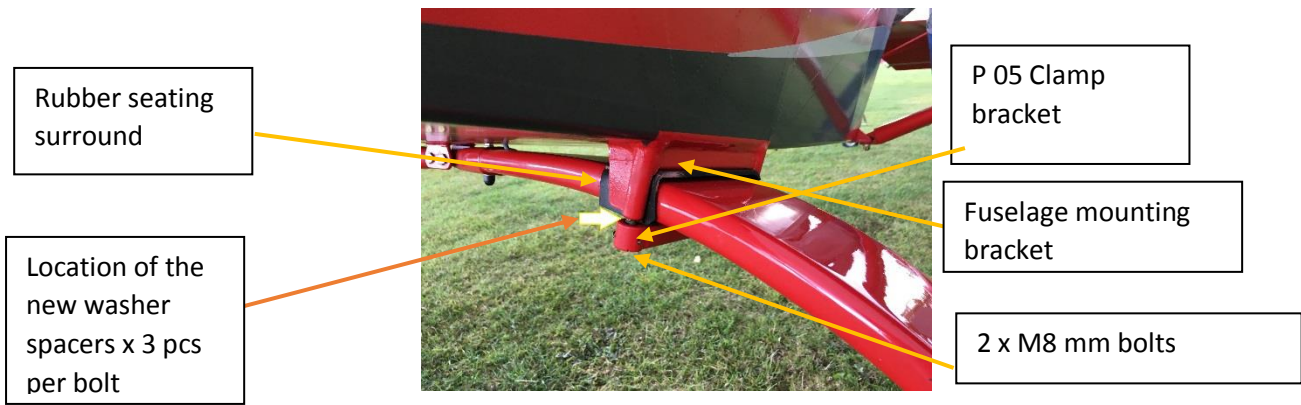
Broken bolt allowing the guide bracket to swing away and release the U/C leg

Clamp bracket

Pivot point on the tail dragger U/C leg. When released by the clamp bracket, the leg can swing freely away

Actions required for compliance: If the aircraft has completed more than 500 hours, or 1000 landings, a mandatory replacement of these bolts using the new fitting instructions as below is required. Aircraft with less than these hours or landings, can replace their bolt assemblies optionally.

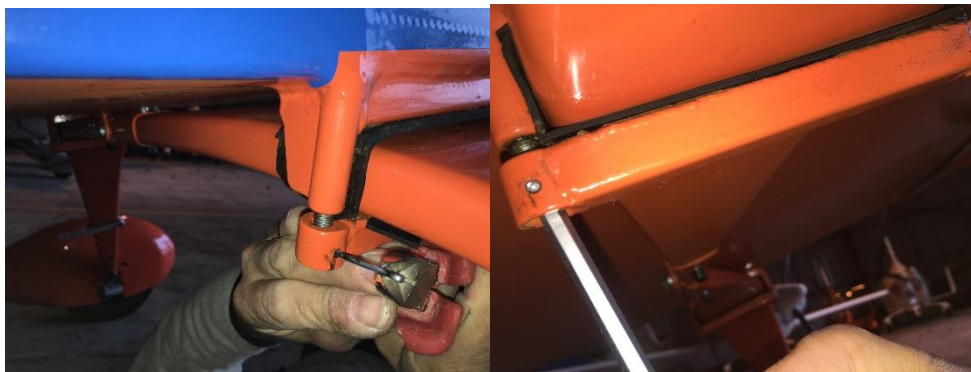
View of the undercarriage clamp bracket assembly (tail wheel aircraft)



Bolt replacement method:

Ensure the aircraft is sitting on flat level ground and follow these steps.

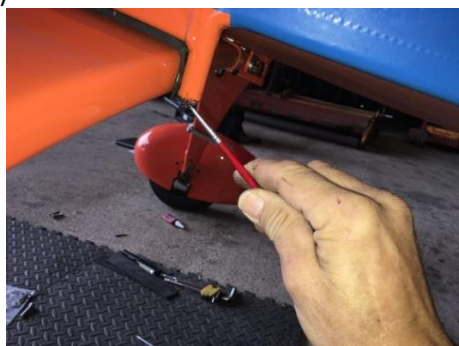
1. Remove split pin, clamp bracket bolts and clamp bracket



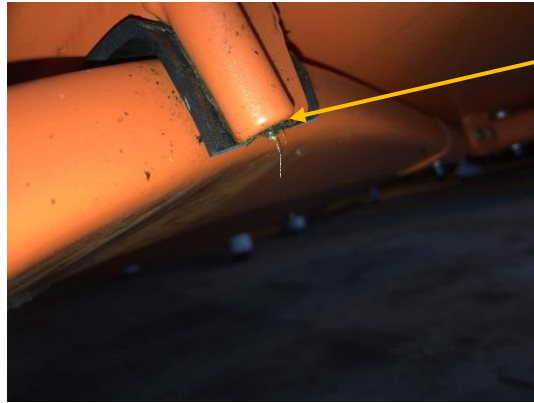
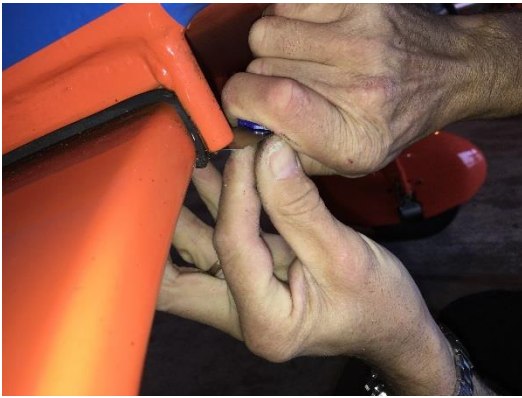
2. Check the top and bottom U/C rubbers are not split or deformed due to excessive prior clamping for example. Check the lower rubber is still adhered to the clamp bracket and not the u/c leg as shown (left below). If the lower rubber has lost its adhesion to the clamp bracket, apply contact adhesive to refix (right below).



3. Remove any grease from the blind threaded bore in fuselage bracket and clean threads (so its suitable for Locktite application later)



4. Trim the top fuselage rubber so that it is flush with bracket end as shown, so rubber does not foul new washer. Also ensure the top rubber is evenly and centrally positioned around the leg. Contact EuroFOX Aviation if you need new rubbers

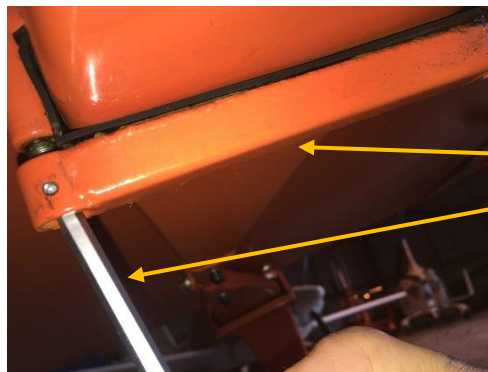


No rubber should obstruct this face

5. Fit 2 new bolts into the clamp bracket and fit 3 washers (M8x15x1.5) on the top side to each bolt as shown (bolts and washers supplied by EuroFOX in the SB pack)



6. Offer the clamp bracket assembly to the undercarriage bracket and apply Locktite 243 to each bolt thread.



Holding the guide bracket square to the underside of the leg tighten up the bolts finger tight (right)

7. Torque each bolt in turn to 15Nm and then to 20Nm with an accurate torque wrench



8. The washers should be clamped firm between the U/C clamp bracket and the fuselage bracket. The top and bottom rubber surround should not be loose or squashed out of place. If either of these happen, consult EuroFOX Aviation.
9. Add a torque strip or similar to the M8 bolt head to aid easy ongoing inspection

Finished assembly below



Ongoing inspections – if during the lifetime of this assembly, the rubbers “settle” and they become dislodged, freely move or swashed, a washer can be removed to re-clamp to 20Nm or new rubbers supplied. Contact EuroFOX Aviation in this case.

Production tolerances mean that in very rare cases 4 washers may be needed on one side of the clamp bracket – the SB pack contains 7 washers in case. However, the aircraft fitted to date did not show this requirement. The split pins do not need to be replaced, instead the Loctite will secondary secure the bolt in addition to the 20Nm.

This new assembly system will transfer the loads through the clamping assembly and not only on the bolt head as is the system used to date. EuroFOX Aviation will be issuing a new bolt and washer set free of charge for the first fitting and at minimal cost for any subsequent fittings.

Certification & Inspection: A second inspection by a Qualified Person - someone the owner/operator feels has the necessary knowledge and experience to check that the work has been carried out correctly in line with this SB. The aircraft log book should be updated with confirmation of this SB compliance and dated.

Tools or materials required. M8 bolts x 4 pcs, 6 pcs washer spacers (A2 stainless), Loctite 243, torque wrench, sharp blade, and rubber surrounds if existing ones split or damaged.

Publications affected: Build manual, Maintenance manual, MPD and SB form (factory built microlights only).

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