

EuroFOX Aircraft

Checking of Elevator Trim Cable Assembly

LAA Engineering recently received a report alerting us to a problem on a EuroFOX tug aircraft where a passing engineer noticed that an elevator trim cable seemed to have some loose strands emanating from the point where the cable passes over the attaching 'U' channel bracket.

When the cable was detached from the 'U' channel by the engineer it was found that the cable had very nearly completely failed; had this cable failed in flight operational safety would have been compromised.

Though the aircraft was under three years old it had completed over 600 hours in service, accruing hours at something like four times a normally expected rate.



Fig. 1. This picture shows the detached bottom trim operating cable with the top cable still in place. Notice that the cable is forced around a sharp 90° angle: each operation requires the cable to go through an angular change causing fatigue in the individual strands.



Fig. 2. This close up shows the extent of the damage found by the engineer when the cable was removed from the 'U' clamp. The point of bending is clear.

An exacerbating factor in this failure was that the 'U' channel itself wasn't lubricated and was therefore very tight and stiff to rotate; this increased the amount of bending that the cable was forced through during each operational cycle.

This recent failure serves to remind us all of the need to include in an Aircraft's Tailored Maintenance Schedule a close visual inspection of all aircraft control cables and their connections.

To fully inspect a control cable may require removal of the cable from the airframe because the best way to check a cable for broken strands is to bend the cable into a loop between two hands and passing a cloth over the cable ... watch your fingers!

Though some wear along the length of a cable may be tolerated, especially if there's no blending between strands, cables must be replaced if it suffers a 'popped' core or any broken strands.

EuroFOX have issued a Service Bulletin (SB 04/2016) reminding owners of the need for regular checks in this cable connection: this Bulletin can be downloaded [HERE](#).