EASA Safety Information Bulletin

SIB No.: **2010 – 06**
Issued: **11 February 2010**

Subject: **Verification of the proper installation of Flight Control Cable–Turnbuckles**

Applicability: All aeroplanes, sailplanes, rotorcraft and airships with cable flight controls equipped with turnbuckles designed to be locked with special locking devices.

Ref. Publication: BEA-Accident Report Ref.: f-hd071021 available at http://www.bea-fr.org/docspa/2007/f-hd071021/pdf/f-hd071021.pdf (in French)

Description: Following a fatal accident, in which the pilot lost control in flight, an accident investigation was conducted by the French Accident Investigation Board, the *Bureau d'Enquêtes et d'Analyses (BEA).*

The probable cause of the accident was identified as the improper locking of a turnbuckle (Locking Clip missing) and subsequent inadvertent release of the pitch up control cable from the turnbuckle:

Fig. 1 Picture of the failed Turnbuckle: As shown in the red circle, the safety wire was cut by the groove originally designed to accommodate a locking clip. As a result, the flight control cable end at the right of the picture unscrewed and eventually got loose

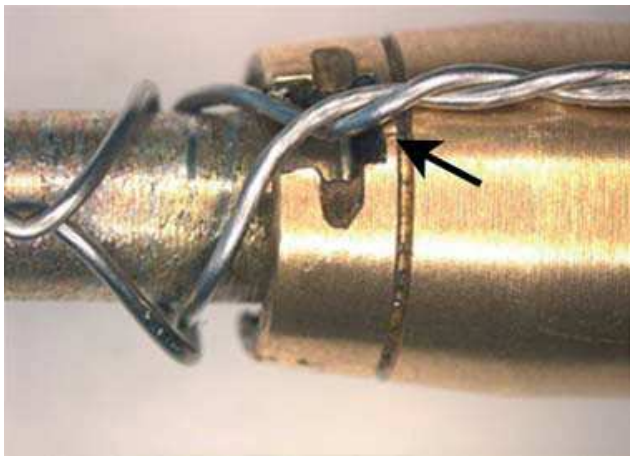

Fig.2 Picture of the left end of the above turnbuckle, showing the potential risk of chafing of the safety wire on the edge of the groove originally designed to accommodate a locking clip

Recommendation: EASA is issuing this Safety Information Bulletin for information and recommends the following actions:

1) At the next maintenance opportunity giving access to the turnbuckles of the flight control cables:
   - Determine whether the turnbuckles are designed to be locked with special locking devices, such as locking clips (i.e. are featuring grooves);
   - In such cases, verify that the special locking devices are properly installed in the corresponding groove;
   - If the special locking devices are missing, install them in accordance with manufacturer's instructions and following standard maintenance practices;

2) When possible, and for the purpose of collecting more data on the subject, EASA encourages operators to document (if possible with pictures and drawings) and report to the aircraft manufacturer, the competent authority and to EASA at report@easa.europa.eu turnbuckle installation anomalies such as:
   - Loosening and/or visible damage to the cable assembly;
   - Safety wire damaged (especially near the grooves), loosened or missing;
   - Locking Clips missing, misplaced (not locked in position) or damaged;
   - Any other anomalies or damages…

3) EASA encourages aircraft manufacturers to review their Maintenance Manuals to ensure that adequate instructions are provided to describe how turnbuckles should be properly locked.

Contact: For further information contact the Airworthiness Directives, Safety Management & Research Section, Certification Directorate, EASA.
E-mail: ADs@easa.europa.eu.

Note 1: Turnbuckles are also called tensors or tension adjustment devices.
Note 2: Special locking devices can be Locking Clips, Wire-Locking Clips, Safety-Pins or Locking-Pins.