



September 20, 2017

IN REPLY REFER:
L175-17-036

Ms. Courtney Liedier
National Transportation Safety Board
Air Safety Investigator
[REDACTED]

Denver, CO 80239

**RE: 1973, T310Q, Serial 310Q0611, N301JA
D/A: 09-25-15, Location: Wichita, KS
NTSB Report # CEN15FA425**

Ms. Liedier,

Thank you for the opportunity to review and comment on your draft Factual report for the above referenced accident. This letter contains my comments and it is my understanding that it will be placed in the Public Docket for this accident.

- All references in the report to Textron should be Textron Aviation.
- The paragraph starting on line 33, needs to mention that the maintenance records did not show compliance with ME73-15 Inspection and Replacement of Self-Locking Fasteners or ME79-28 Trim Tab Actuator Inspection.
- Line 150, should read "the bolt, washer, castellated nut and cotter pin securing the elevator trim tab push rod to the actuator were missing."
- Line 180, serial number should be part number and it should be noted that the part number of the nut is a self-locking castellated nut.
- Line 183 the FAA did not issue an Airworthiness Directive to make the modification MEB73-15 mandatory
- Line 200, the Aircraft Service Manual does not specify attachment hardware; the Service Manual explains how to install and maintain, the Illustrated Parts Catalog (IPC) defines the parts to be use in the installation. IPC 27-30-00 Figure 02 (rev4) item 18 thru 18D show the hardware. Textron Aviation also publishes service documents that contain additional maintenance instructions and parts information. See attached.



- Line 236, after Textron Aviation's add Material & Process.
- Line 239, Trim Servo should be trim actuator.
- Starting on line 259 you discuss four accidents that involve facts similar to the accident involving N301JA. Your report presents an incomplete account of those accidents as you do not discuss the probable cause of each accident. The NTSB determined the probable cause of three of the accidents to be improper maintenance or improper installation. In one of the accidents (N8493A), the probable cause was determined to be inadequate aircraft preflight. I recommend that, in order to provide a complete picture of the events listed, you should include the probable cause of each accident.
- Line 286, Cessna Textron's laboratory should be Cessna Aircraft's Material & Process laboratory.
- Your statement starting on line 296 is inaccurate. While it is the belief of Textron Aviation that the current trim tab rod design meets the requirements of 14 CFR Part 23.607(a) we are committed to going above the design requirements of the regulations and are working with the FAA towards a design change that will help ensure the trim tab rod does not jam if a mechanic or pilot fails to ensure the correct hardware is installed. As this design change, will impact the 59 models (or approximately 13,000 aircraft) of piston twin engine aircraft produced by Cessna Aircraft a significant amount of work is required to ensure that any change will not cause additional, unintended issues. So, while we have not published any documents to the public, we have made design changes which are being worked through the approval process. Once completed this additional type design change will be introduced to the field via a Service Bulletin.

In closing, the use of a castellated nut and cotter pin hardware is considered an industry standard as a "non-friction" locking device as is required by regulation for use on bolts subject to rotation or in high vibration environments (ref. 14 CFR Part 23.607). This same hardware installation method is used throughout the flight control systems of the airplanes noted in the FAA AD and throughout the aviation industry. Thousands of other fasteners, many in flight critical systems, depend on correct installation and inspection. I think it is important to point out that we have been unable to find any documentation from either the FAA or the NTSB that would indicate that a fastener with two retaining devices does not meet the requirements specified in 14 CFR Part 23.607 (a). On December 7, 2011, a helicopter experienced a loss of control near Las Vegas, NV (NTSB report number DCA12MA020). During the investigation, it was determined that the bolt, washer, self-locking nut, and split pin (cotter pin) were not properly installed allowing the input rod to separate from the linkage while the helicopter



was in flight causing the helicopter to become uncontrollable and crash. According to the NTSB report, "Federal regulations require that any removable fastener whose loss could jeopardize the safe operation of the helicopter must incorporate two separate locking devices." No recommendation was made by the NTSB concerning a redesign of a fastener system incorporating dual locking methods even though the loss of the fastener would cause a catastrophic event; the recommendations dealt with maintenance human factors.

If Textron Aviation can be of further assistance in this matter, please contact us.

Regards,



Andrew L. Hall
Senior Air Safety Investigator
Textron Aviation Air Safety Investigation