



SAIB: CE-17-16

Date: June 9, 2017

SUBJ: Main Landing Gear – Actuator Inspection

This is information only. Recommendations aren't mandatory.

Introduction

This Special Airworthiness Information Bulletin alerts owners, operators, maintenance technicians, and inspectors of an airworthiness concern on **Textron Aviation Inc. (Cessna Aircraft Company) Models 172RG, R182, TR182, FR182, and all variants of 210/T210/P210-series airplanes with the exception of the Models 210 and 210A airplanes.** The intent is to emphasize the importance of the inspection of main landing gear actuator assemblies following Textron Aviation Inc. supplemental inspection documents (SIDs) applicable to each model to prevent malfunctions related to gear extension and retraction.

At this time, the Federal Aviation Administration (FAA) has determined that this airworthiness concern is not an unsafe condition that would warrant airworthiness directive (AD) action under Title 14 of the Code of Federal Regulations (14 CFR) part 39.

Background

The FAA recently investigated an accident involving a Model 172RG airplane that had performed a gear up landing when the pilot was unsuccessful in getting the left main gear down and locked. During review of the landing gear system, investigators found the left main gear actuator (part number 9882015-2) housing cracked across the forward attach bolt hole. The crack allowed the actuator bore to open enough such that the piston would not engage the landing gear pivot sector sufficiently to move the gear. This failure will result in the affected side not being able to fully retract or extend through normal method or prevent use of the emergency hand pump.

The main landing gear was subject to FAA AD 2001-06-06 and required inspection for cracks in the gear pivot assemblies. However, the area of concern identified through this SAIB addresses the actuator assembly that mates with the main gear pivot. The FAA has published maintenance alerts (Advisory Circular 43-16) in prior years highlighting this issue and Textron Aviation published SEB01-2 in 2001 and later revised in 2007 to address the need for initial and repetitive inspections of the actuators. Textron later published inspection techniques and times within their SIDs.

The FAA has found through our review that most service difficulty reports (SDRs), incidents, or accidents occur on the Model 172RG airplane. We believe this is primarily due to its heavy use in a training environment. Our review of over 100 SDRs identifying cracks in the actuator reflect mechanics and inspectors finding the majority of these during scheduled inspections (100 hour/annual) and often referencing Cessna bulletin SEB01-2.

Figures 1 and 2 reflect two actuators with the crack location most commonly noted that contributes to the gear malfunction.

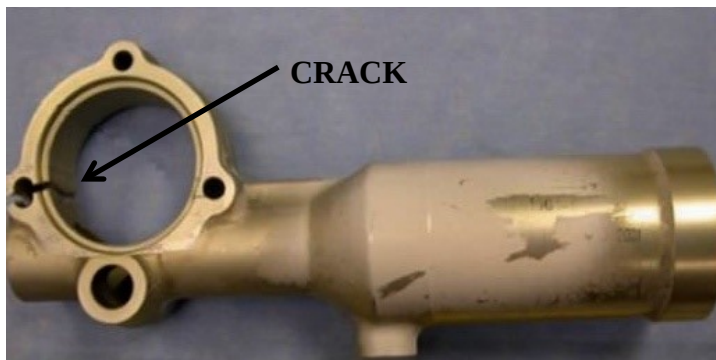


Figure 1

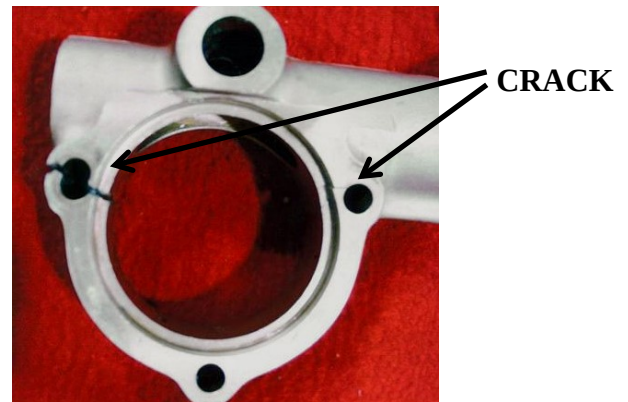


Figure 2

Textron (Cessna) produced several actuator assembly and actuator body part numbers with different version or dash numbers for use on the affected airplane models.

Actuator assemblies utilize base part number 1298100, 1281000, 1281006, 9882000, and 9882015.

Actuator bodies utilize base part number 1281001 and 1241619.

Recommendations

The FAA recommends performing the inspections detailed in Textron SID 32-10-01 appropriate for the applicable airplane model. These inspections incorporate a combination of visual, fluorescent penetrant, and eddy current depending on the airplane model.

Initial inspection of the actuator is recommended at 3,000 hours time-in-service (TIS) or 10 years of age, whichever occurs first, for all models except the 210/T210 series airplanes produced from 1962 to 1968. Repetitive inspections are recommended every 500 hours (TIS) or 5 years, whichever occurs first.

Initial inspection of the actuator is recommended at 6,000 hours (TIS) or 10 years of age, whichever occurs first, for 210/T210 series airplanes produced from 1962 to 1968 with repetitive inspections at 1,000 hours TIS or 3 years, whichever occurs first.

Additionally, an inspection is recommended following any unplanned event such as a hard landing to ensure cracks have not developed.

Serial number applicability is identified in each SID accompanying this SAIB.

For Further Information Contact

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