



FAA
Aviation Safety

SPECIAL AIRWORTHINESS INFORMATION BULLETIN

SUBJ: TURBINE ENGINE COMPRESSOR SECTION

SAIB: NE-20-09

Date: April 30, 2020

This is information only. Recommendations aren't mandatory.

Introduction

This Special Airworthiness Information Bulletin advises operators of the PW1500G turbofan engines to continuously monitor their Low Pressure Compressor (LPC) operating performance after removing the electronic engine control (EEC) software and upgrading to full authority digital electronic control (FADEC) software version V2.11.9.2 to comply with AD 2020-07-02.

At this time, the 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 PW1500G turbofan engines have experienced LPC Rotor 1 (R1) failures after the engine software was upgraded with a new LPC vane schedule. There were four LPC R1 failures, which caused in-flight shutdowns but did not damage the aircraft. As part of the corrective actions for the LPC R1 failures, Pratt and Whitney released FADEC software V2.11.9 to revert to the prior LPC vane schedule. The FAA wrote AD 2020-07-02 that mandates removal of any version of FADEC software older than V2.11.9.

Operating on the vane schedule required by AD 2020-07-02 will result in a lower LPC stall margin at the top of climb. This can result in deteriorated or dirty engines experiencing recoverable LPC stalls at the top of climb. Two such recoverable LPC stalls have occurred on the same PW1500G engine.

Pratt and Whitney has a method to monitor the operators LPC operating performance using engine data provided by operators, as described in Engine Maintenance Manual (EMM), PW1000G-A-71-00-00-02B-030A-A. The monitoring program can be used to detect dirty or deteriorated compressors prior to the onset of the top of climb LPC stalls.

Recommendations

The FAA recommends operators continuously monitor the LPC operating performance, as specified in Engine Maintenance Manual (EMM), PW1000G-A-71-00-00-02B-030A-A.

For Further Information Contact

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