



SUBJ: Turbine Section

SAIB: NE-16-01R1

Date: January 14, 2016

This is information only. Recommendations aren't mandatory.

Introduction

This **Revised** Special Airworthiness Information Bulletin (SAIB) alerts you, owners, operators, and certified repair facilities of airplanes equipped with **Pratt & Whitney Division (P&W) PW4000 series turbofan engines** with low-pressure turbine (LPT) 4th stage vane clusters, **with a hollow internal airfoil configuration** installed, to potential structural degradation due to hot corrosion (sulfidation) of the vane internal passages. At this time, the airworthiness concern is not an unsafe condition that would warrant airworthiness directive action under Title 14 of the Code of Federal Regulations (14 CFR) part 39. **This revision corrects and clarifies the Introduction, Background, and Recommendation paragraph.**

Background

We have received reports of LPT 4th stage vane liberations, which have resulted in two engine failures with low-energy case uncontainment events on PW4000-94 model engines. Both failures resulted in safe landings. Investigations revealed sulfidation of the vane internal passages corroding the parent material, weakening the structure and inducing lean back or liberation of vane clusters.

This SAIB provides information on LPT 4th stage vane fractures and lists service information intended to prevent further occurrences of vane weakening and possible engine failure. PW4000 series engine Clean, Inspect, Repair (CIR) Manual, P/N 51A357, Task No. 72-53-24-200-002, dated January 15, 2015 was issued to inspect the LPT 4th stage vane airfoil **permeability** using a magnetoscope. This method is indicated because the material degradation occurs largely from the inside of the vane passages. While general borescope inspection is useful to identify sulfidation of the external airfoil surfaces, it is unable to detect deterioration of internal surfaces prior to failure of the part. Magnetoscope inspection allows for the remainder of the unaffected airfoil material to be measured by nondestructive means.

Recommendation

The FAA recommends that **upon piece part exposure of LPT 4th stage vanes with a hollow internal airfoil configuration** you perform a magnetoscope inspection per the instructions in PW4000 series engine CIR Manual, P/N 51A357, Task No. 72-53-24-200-002, dated January 15, 2015 and remove the degraded parts.

For Further Information Contact

Brian Kierstead, Aerospace Engineer, ANE-142, 12 New England Executive Park, Burlington, Massachusetts, 01803; phone: 781-238-7772; fax: 781-238-7199; email: brian.kierstead@faa.gov.

For Related Service Information Contact

Pratt & Whitney Division, United Technologies Corporation, 400 Main St., East Hartford, Connecticut, 06108; phone: 860-565-0140; email: help24@pw.utc.com