FAA
Aviation Safety

EMERGENCY AIRWORTHINESS DIRECTIVE

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DATE: September 15, 2011
AD #: 2011-20-51

Emergency airworthiness directive (AD) 2011-20-51 is sent to owners and operators of Pratt & Whitney Canada PT6A-15AG, -27, -28, -34, -34AG, -34B, and -36 series turboprop engines.

Background

This emergency AD was prompted by failures of certain first stage reduction sun gears, manufactured by Timken Alcor Aerospace Technologies, Inc. These gears are manufactured under a part manufacturer approval (PMA) as replacement parts for installation in propeller reduction gearbox assemblies of Pratt & Whitney Canada PT6A-15AG, -27, -28, -34, -34AG, -34B, and -36 series turboprop engines. About 80 of these sun gears are suspect for having a manufacturing anomaly. About half of the suspect sun gears have already been taken out of service. This condition, if not corrected, could result in failure of the shaft portion of the sun gear, which will result in an engine in-flight shut down, possible uncontained engine failure, aircraft damage, and serious injuries.

FAA's Determination

We are issuing this AD because we evaluated all the relevant information and determined the unsafe condition described previously is likely to exist or develop in other products of the same type design. The FAA has found that the risk to the flying public justifies issuing this AD on an emergency basis.

AD Requirements

This AD requires the removal of affected PMA replacement Timken Alcor Aerospace Technologies, Inc. first stage reduction sun gear and the interacting planet gears, from the propeller reduction gearbox assembly, within 15 operating hours or 15 days after receipt of this AD, whichever occurs first.

Authority for this Rulemaking

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, Section 106, describes the authority of the FAA Administrator. Subtitle VII, Aviation Programs, describes in more detail the scope of the Agency's authority.

We are issuing this rulemaking under the authority described in Subtitle VII, Part A, Subpart III, Section 44701, "General requirements." Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

Presentation of the Actual AD

We are issuing this AD under 49 U.S.C. Section 44701 according to the authority delegated to me by the Administrator.

2011-20-51 Pratt & Whitney Canada PT6A-15AG, -27, -28, -34, -34AG, -34B, and -36 Series Turboprop Engines: Directorate Identifier 2011-NE-31-AD.

Effective Date

(a) This Emergency AD is effective upon receipt.

Affected ADs

(b) None.

Applicability

(c) This AD applies to Pratt & Whitney Canada PT6A-15AG, -27, -28, -34, -34AG, -34B, and -36 series turboprop engines that have had maintenance done to the power section module involving first stage reduction sun gear replacement since February 3, 2010, and having a Timken Alcor Aerospace Technologies, Inc. (TAATI) part manufacturer approval (PMA) replacement first stage reduction sun gear, part number (P/N) E3024765, serial numbers (S/Ns) PC5-091 through PC5-176, installed.

Unsafe Condition

(d) This AD was prompted by failures of the affected PMA replacement first stage reduction sun gears, manufactured by TAATI. We are issuing this AD to prevent failure of the shaft portion of the sun gear, which would result in an engine in-flight shut down, possible uncontained engine failure, aircraft damage, and serious injuries.

Compliance

(e) Comply with this AD within the compliance times specified, unless already done.

(f) For affected engines, remove the PMA replacement TAATI first stage reduction sun gear and the interacting planet gears from the propeller reduction gearbox assembly within 15 operating hours or 15 days after receipt of this AD, whichever occurs first.

Installation Prohibition

(g) Upon receipt of this AD, do not install on any airplane, any engine or power section module with a TAATI PMA replacement first stage reduction sun gear, P/N E3024765, S/Ns PC5-091 through PC5-176.

Alternative Methods of Compliance (AMOCs)

(h) The Manager, Los Angeles Aircraft Certification Office, FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19.

Related Information

(i) For further information about this AD, contact: Paul Craig, Aerospace Engineer, Los Angeles Aircraft Certification Office, FAA, 3960 Paramount Blvd., Suite 100, Lakewood, CA 90712; phone: 562-627-5252; fax: 562-627-5210; e-mail: paul.craig@faa.gov.

Issued in Burlington, Massachusetts, on September 15, 2011.

Peter A. White,
Manager Engine & Propeller Directorate,
Aircraft Certification Service.