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## **DEPARTMENT OF TRANSPORTATION**

### **Federal Aviation Administration**

#### **14 CFR Part 39**

**[Docket No. FAA-2011-1298; Directorate Identifier 2011-NE-39-AD; Amendment 39-16888; AD 2011-25-12]**

**RIN 2120-AA64**

#### **Airworthiness Directives; Pratt & Whitney Canada Turboprop Engines**

**AGENCY:** Federal Aviation Administration (FAA), DOT.

**ACTION:** Final rule; request for comments.

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**SUMMARY:** We are adopting a new airworthiness directive (AD) for Pratt & Whitney Canada PT6A-15AG, -27, -28, -34, -34AG, -34B, and -36 series turboprop engines. This AD requires the removal of certain affected part manufacturer approval (PMA) replacement Timken Alcor Aerospace Technologies, Inc. (TAATI) first stage reduction sun gears and/or the interacting planetary gear sets from the propeller reduction gearbox assembly. This AD was prompted by a failure report of a certain TAATI PMA sun gear, installed since December 22, 2008. We are issuing this AD to prevent failure of the sun gear, which will result in an engine in-flight shut down, possible uncontained engine failure, aircraft damage, and serious injuries.

**DATES:** This AD is effective December 28, 2011.

The Director of the Federal Register approved the incorporation by reference of a certain publication listed in the AD as of December 28, 2011.

We must receive any comments on this AD by January 27, 2012.

**ADDRESSES:** You may send comments by any of the following methods:

- Federal eRulemaking Portal: Go to <http://www.regulations.gov>. Follow the instructions for submitting comments.
- Fax: (202) 493-2251.
- Mail: U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE., Washington, DC 20590.
- Hand Delivery: U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE., Washington, DC 20590, between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

For service information identified in this AD, contact Timken Alcor Aerospace Technologies, Inc., 3110 N. Oakland, Mesa, Arizona 85215; phone: (480) 632-1039; Web site:

<http://www.timken.com/mro>. You may review copies of the referenced service information at the FAA, Engine & Propeller Directorate, 12 New England Executive Park, Burlington, MA. For information on the availability of this material at the FAA, call (781) 238-7125.

## **Examining the AD Docket**

You may examine the AD docket on the Internet at <http://www.regulations.gov>; or in person at the Docket Management Facility between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this AD, the regulatory evaluation, any comments received, and other information. The street address for the Docket Office (phone: (800) 647-5527) is in the ADDRESSES section. Comments will be available in the AD docket shortly after receipt.

**FOR FURTHER INFORMATION 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; email: [paul.craig@faa.gov](mailto:paul.craig@faa.gov).

## **SUPPLEMENTARY INFORMATION:**

### **Discussion**

On October 12, 2011, we issued AD 2011-20-51, Amendment 39-16843 (76 FR 64001, October 17, 2011), for Pratt & Whitney Canada PT6A-15AG, -27, -28, -34, -34AG, -34B, and -36 series turboprop engines having a TAATI PMA replacement first stage reduction sun gear, part number (P/N) E3024765, installed.

### **Actions Since AD 2011-20-51 (76 FR 64001, October 17, 2011) Was Issued**

Since we issued AD 2011-20-51, we received a report of another failure of a sun gear not listed in that AD. Analysis has revealed that additional PMA replacement TAATI gears, installed since December 22, 2008, have the same failure potential as the gears affected by that AD. The additional gears are identified as follows:

- Replacement first stage reduction sun gears, P/N E3024765, serial numbers (S/Ns) PC5-051 through PC5-089, and S/Ns SG36-051 through SG36-120, including the associated planetary gears in propeller reduction gearbox assembly.
- Replacement planetary gear sets, P/N E3101455-02, S/Ns EE-051 through EE-197, S/Ns EE-4051 through EE-4094, and S/N EE-4113, including the associated sun gear in the propeller reduction gearbox assembly.

### **FAA's Determination**

We are issuing this AD because we evaluated all the relevant information and determined that the unsafe condition described previously is likely to exist or develop in other products of the same type design.

### **AD Requirements**

This AD requires the removal of affected sun gears and planetary gear sets described previously.

### **FAA's Justification and Determination of the Effective Date**

An unsafe condition exists that requires the immediate adoption of this AD. The FAA has found that the risk to the flying public justifies waiving notice and comment prior to adoption of this rule

because of the short compliance time required in this AD to remove any affected parts from service. Therefore, we find that notice and opportunity for prior public comment are impracticable and that good cause exists for making this amendment effective in less than 30 days.

### **Comments Invited**

This AD is a final rule that involves requirements affecting flight safety, and we did not provide you with notice and an opportunity to provide your comments before it becomes effective. However, we invite you to send any written data, views, or arguments about this AD. Send your comments to an address listed under the ADDRESSES section. Include the docket number FAA-2011-1298 and directorate identifier 2011-NE-39-AD at the beginning of your comments. We specifically invite comments on the overall regulatory, economic, environmental, and energy aspects of this AD. We will consider all comments received by the closing date and may amend this AD because of those comments.

We will post all comments we receive, without change, to <http://www.regulations.gov>, including any personal information you provide. We will also post a report summarizing each substantive verbal contact we receive about this AD.

### **Costs of Compliance**

We estimate that the inspection in this AD will affect about 5,000 engines installed on airplanes of U.S. registry. We also estimate that disassembly of reduction gearboxes will affect about 50 engines, and the gear removal will affect about 40 engines. We also estimate that it will take about 1 work-hour per engine for inspecting the engine records. We also estimate that for about 10 engines, records identifying the gear S/N for each gearbox do not exist, so that it will take about 10 work-hours to inspect gears for affected S/Ns and then to reassemble the reduction gearbox. We also estimate that it would take about 16 work-hours for parts replacement. The average labor rate is \$85 per work-hour. Required parts for one engine will cost about \$14,500. Based on these figures, we estimate the cost of the AD on U.S. operators to be \$1,067,900.

### **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.

### **Regulatory Findings**

This AD will not have federalism implications under Executive Order 13132. This AD will not have a substantial direct effect on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify that this AD:

- (1) Is not a "significant regulatory action" under Executive Order 12866,
- (2) Is not a "significant rule" under DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979),

- (3) Will not affect intrastate aviation in Alaska, and
- (4) Will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

**List of Subjects in 14 CFR Part 39**

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

**Adoption of the Amendment**

Accordingly, under the authority delegated to me by the Administrator, the FAA amends part 39 of the Federal Aviation Regulations (14 CFR part 39) as follows:

**PART 39–AIRWORTHINESS DIRECTIVES**

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

**§ 39.13 [Amended]**

2. The FAA amends § 39.13 by adding the following new airworthiness directive (AD):



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**2011-25-12 Pratt & Whitney Canada:** Amendment 39-16888; Docket No. FAA-2011-1298; Directorate Identifier 2011-NE-39-AD.

**(a) Effective Date**

This AD is effective December 28, 2011.

**(b) Affected ADs**

None.

**(c) Applicability**

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 the first stage reduction sun gear or planetary gear set replacement since December 22, 2008, and having a:

- (1) 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) PC5-051 through PC5-089, or S/Ns SG36-051 through SG36-120, installed; or
- (2) TAATI PMA replacement planetary gear set, P/N E3101455-02, S/Ns EE-051 through EE-197, or S/Ns EE-4051 through EE-4094, or S/N EE-4113, installed.

**(d) Unsafe Condition**

This AD was prompted by a failure report of a certain TAATI PMA sun gear, installed since December 22, 2008. We are issuing this AD to prevent failure of the sun gear, which will result in an engine in-flight shut down, possible uncontained engine failure, aircraft damage, and serious injuries.

**(e) Compliance**

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

**(f) Chip Detector Inspections**

- (1) Within 10 operating hours after the effective date of this AD:
  - (i) Inspect the chip detector on the propeller reduction gearbox assembly for metal debris.
  - (ii) Do the inspections in accordance with paragraph 1 of the Accomplishment Instructions of Timken Alcor Aerospace Technologies, Inc. Alert Service Bulletin No. T-804, Revision B, dated November 7, 2011. If the amount of metal debris found exceeds the allowable limits then, before further flight, permanently remove from service the affected gears as specified in paragraph (g) of this AD.
- (2) Repeat the chip detector inspections within every 25 additional operating hours thereafter, until the affected gears are removed from service.

### **(g) Gear Removals From Service**

Within 60 operating hours or 365 days after the effective date of this AD, whichever occurs first, permanently remove from service the PMA replacement TAATI first stage reduction sun gear and the interacting planetary gears, and the PMA replacement TAATI planetary gear sets and interacting gears, listed in paragraph (c) of this AD, from the propeller reduction gearbox assembly.

### **(h) Installation Prohibition**

(1) After the effective date 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 PC5-051 through PC5-089, or S/Ns SG36-051 through SG36-120, or the associated planetary gears in the propeller reduction gearbox assembly.

(2) After the effective date of this AD, do not install on any airplane, any engine or power section module with a TAATI PMA planetary gear set, P/N E3101455-02, S/Ns EE-051 through EE-197, or S/Ns EE-4051 through EE-4094, or S/N EE-4113, or the associated first stage sun gear in the propeller reduction gearbox assembly.

### **(i) Gears Are Matched Sets**

The sun gear and planetary gear sets as-installed are considered to be matched sets. Therefore, the sun gear and planetary gear sets associated as mating parts with an affected gear in the propeller reduction gearbox assembly must also be permanently removed from service.

### **(j) Alternative Methods of Compliance (AMOCs)**

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.

### **(k) Related Information**

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; email: paul.craig@faa.gov.

### **(l) Material Incorporated by Reference**

You must use the following service information to do the chip detector inspections required by this AD, unless the AD specifies otherwise. The Director of the Federal Register approved the incorporation by reference under 5 U.S.C. 552(a) and 1 CFR part 51 of the following service information on the date specified:

(1) Timken Alcor Aerospace Technologies, Inc. Alert Service Bulletin No. T-804, Revision B, dated November 7, 2011, approved for IBR December 28, 2011.

(2) For service information identified in this AD, contact Timken Alcor Aerospace Technologies, Inc., 3110 N. Oakland, Mesa, Arizona 85215; phone: (480) 632-1039; Web site: <http://www.timken.com/mro>.

(3) You may review copies of the service information at the FAA, New England Region, 12 New England Executive Park, Burlington, MA. For information on the availability of this material at the FAA, call (781) 238-7125.

(4) You may also review copies of the service information that is incorporated by reference at the National Archives and Records Administration (NARA). For information on the availability of this

material at an NARA facility, call (202) 741-6030 or go to: <http://www.archives.gov/federal-register/cfr/ibr-locations.html>.

Issued in Burlington, Massachusetts, on December 1, 2011.

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