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## **DEPARTMENT OF TRANSPORTATION**

### **Federal Aviation Administration**

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

**[Docket No. FAA-2017-0943; Product Identifier 2017-NE-34-AD; Amendment 39-19186; AD 2018-03-13]**

**RIN 2120-AA64**

### **Airworthiness Directives; General Electric Company 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 certain General Electric Company (GE) CT7-5A2, CT7-5A3, CT7-7A, CT7-7A1, CT7-9B, CT7-9B1, CT7-9B2, CT7-9C and CT7-9C3 model turboprop engines. This AD requires initial and repetitive visual inspection and fluorescent-penetrant inspection (FPI) of the main propeller shaft. This AD was prompted by the failure of a main propeller shaft. We are issuing this AD to address the unsafe condition on these products.

**DATES:** This AD is effective February 28, 2018.

The Director of the Federal Register approved the incorporation by reference of a certain publication listed in this AD as of February 28, 2018.

We must receive comments on this AD by March 30, 2018.

**ADDRESSES:** You may send comments, using the procedures found in 14 CFR 11.43 and 11.45, 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 final rule, contact General Electric Company, GE-Aviation, Room 285, 1 Neumann Way, Cincinnati, OH 45215; phone: 513-552-3272; fax: 513-552-

3329; email: geae.aoc@ge.com. You may view this service information at the FAA, Engine and Propeller Standards Branch, 1200 District Avenue, Burlington, MA 01803. For information on the availability of this material at the FAA, call 781-238-7759. It is also available on the internet at <http://www.regulations.gov> by searching for and locating Docket No. FAA-2017-0943.

## **Examining the AD Docket**

You may examine the AD docket on the internet at <http://www.regulations.gov> by searching for and locating Docket No. FAA-2017-0943; 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 final rule, 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:** Michael Richardson-Bach, Aerospace Engineer, ECO Branch, FAA, 1200 District Avenue, Burlington, MA 01803; phone: 781-238-7747; fax: 781-238-7199; email: michael.richardson-bach@faa.gov.

## **SUPPLEMENTARY INFORMATION:**

### **Discussion**

We received a report that a condition was found after an incident where the main propeller shaft on a GE CT7-9B failed in flight, resulting in the loss of the propeller. The condition is cracking initiating from undiscovered corrosion in the dowel pin hole on the flange of the main propeller shaft. This proposed AD would require visually inspecting the main propeller shaft for wear and corrosion and FPI for cracks. This condition, if not addressed, could result in failure of the main propeller shaft, resulting in in-flight loss of the propeller, loss of engine thrust control, and damage to the airplane. We are issuing this AD to address the unsafe condition on these products.

A similar propeller separation incident occurred in 1992 because of a material defect. The affected parts were purged from the field at that time.

### **Related Service Information Under 1 CFR Part 51**

We reviewed SPM 70-32-03, SPOT-FLUORESCENT PENETRANT INSPECTION, TASK 70-32-03-230-002, from the GE Commercial Engine Standard Practices Manual GEK 9250, Rev. 106, dated April 01, 2007. This procedure provides instruction for spot FPI.

We also reviewed MM 72-10-00, PROPELLER GEARBOX INSPECTION and MM 72-10-00, PROPELLER GEARBOX–CLEANING, from the GE CT7B Maintenance Manual SEI-576, Rev. 60, dated October 1, 2017. These procedures provides instructions for inspection and cleaning, respectively, of the main propeller shaft.

This service information is reasonably available because the interested parties have access to it through their normal course of business or by the means identified in the ADDRESSES section.

### **Other Related Service Information**

We reviewed GE Service Bulletin (SB) CT7-TP S/B 72-0531, dated June 22, 2017. The SB references standard procedures for initial and repetitive visual and FPI of the main propeller shaft for SF340 aircraft.

We also reviewed GE SB CT7-TP S/B 72-0533, dated October 3, 2017. The SB references standard procedures for initial and repetitive visual and FPI of the main propeller shaft for CN235 aircraft.

## 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.

## AD Requirements

This AD requires visually inspecting the main propeller shaft for wear and corrosion and FPI for cracks.

## Differences Between This AD and the Service Information

The inspection plan in this AD adds visual inspection and FPI to the repetitive inspections. This AD adds upper limits to the “inspect within” times to avoid conflicting times to inspect.

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

An unsafe condition exists that requires the immediate adoption of this AD without providing an opportunity for public comments prior to adoption. The FAA has found that the risk to the flying public justifies waiving notice and comment prior to adoption of this rule because the compliance time for the action is less than the time required for public comment. Therefore, we find that notice and opportunity for prior public comment are impracticable. In addition, for the reason stated above, we find 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 was not preceded by notice and an opportunity for public comment. However, we invite you to send any written data, views, or arguments about this final rule. Send your comments to an address listed under the ADDRESSES section. Include the docket number Docket No. FAA-2017-0943 and Product Identifier 2017-NE-34-AD at the beginning of your comments. We specifically invite comments on the overall regulatory, economic, environmental, and energy aspects of this final rule. We will consider all comments received by the closing date and may amend this final rule 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 final rule.

## Costs of Compliance

We estimate that this AD affects 176 engines installed on airplanes of U.S. registry. We estimate the following costs to comply with this AD:

### Estimated Costs

Action	Labor cost	Parts cost	Cost per product	Cost on U.S. operators
Initial FPI	2 work-hours × \$85 per hour = \$170	\$0	\$170	\$29,920

## **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.

This AD is issued in accordance with authority delegated by the Executive Director, Aircraft Certification Service, as authorized by FAA Order 8000.51C. In accordance with that order, issuance of ADs is normally a function of the Compliance and Airworthiness Division, but during this transition period, the Executive Director has delegated the authority to issue ADs applicable to engines, propellers, and associated appliances to the Manager, Engine and Propeller Standards Branch, Policy and Innovation Division.

## **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 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):



**2018-03-13 General Electric Company:** Amendment 39-19186; Docket No. FAA-2017-0943; Product Identifier 2017-NE-34-AD.

**(a) Effective Date**

This AD is effective February 28, 2018.

**(b) Affected ADs**

None.

**(c) Applicability**

This AD applies to General Electric Company (GE) CT7-5A2, CT7-5A3, CT7-7A, CT7-7A1, CT7-9B, CT7-9B1, CT7-9B2, CT7-9C and CT7-9C3 model turboprop engines with main propeller shaft, part number 77581-11, installed.

**(d) Subject**

Joint Aircraft System Component (JASC) Code 7210, Turbine Engine Reduction Gear.

**(e) Unsafe Condition**

This AD was prompted by the failure of a main propeller shaft. We are issuing this AD to prevent failure of the main propeller shaft. The unsafe condition, if not addressed, could result in in-flight loss of the propeller, loss of engine thrust control, and damage to the airplane.

**(f) Compliance**

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

**(g) Required Actions**

(1) For propeller gear boxes (PGBs) with 46,000 hours time since new (TSN) or more, perform cleaning, visual inspection, and fluorescent-penetrant inspection (FPI) within 150 hours time in service (TIS) after the effective date of this AD, or one month after the effective date of this AD, whichever occurs first.

(2) For PGBs with 40,000 hours TSN or more, but less than 46,000 hours TSN, perform cleaning, visual inspection, and FPI within 500 hours TIS after the effective date of this AD, not to exceed 46,150 TSN or four months after the effective date of this AD, whichever occurs first.

(3) For PGBs with 30,000 hours TSN or more, but less than 40,000 hours TSN, perform cleaning, visual inspection, and FPI within 1,000 hours TIS after the effective date of this AD, not to exceed 40,500 TSN or eight months after the effective date of this AD, whichever occurs first.

(4) For PGBs with less than 30,000 hours TSN, perform cleaning, visual inspection, and FPI at the next propeller removal, not to exceed 31,000 hours TSN.

(5) Perform the cleaning, visual inspection and FPI, as follows:

(i) Clean the main propeller shaft flange. Use the instructions in paragraph 5, “Main Propeller Shaft,” in MM 72-10-00, PROPELLER GEARBOX–CLEANING from GE CT7B Maintenance Manual SEI-576, Rev. 60, dated October 1, 2017.

(ii) Visually inspect the main propeller shaft for wear, corrosion, and cracking. Use the instructions in paragraph 5.A., “Main Propeller Shaft,” in MM 72-10-00, PROPELLER GEARBOX–INSPECTION from GE CT7B Maintenance Manual SEI-576, Rev. 60, dated October 1, 2017.

(iii) Spot-fluorescent-penetrant inspect the area on the main propeller shaft flange face within 0.5 inches radially adjacent to the dowel pin holes for cracks. Use the instructions in SPM 70-32-03, SPOT-FLUORESCENT PENETRANT–INSPECTION, Task 70-32-03-230-002 from GE GEK 9250, Commercial Engine Standard Practices Manual, Rev. 106, dated April 1, 2007.

(6) Repeat the cleaning, visual inspection, and FPI of the main propeller shaft at each removal of the propeller.

(7) Before further flight, remove from service any main propeller shaft found cracked, or with corrosion or wear beyond the limits specified in SPM 70-32-03, SPOT-FLUORESCENT PENETRANT–INSPECTION, Task 70-32-03-230-002, from GE GEK 9250, Commercial Engine Standard Practices Manual, Rev. 106, dated April 1, 2007.

#### **(h) Credit for Previous Actions**

Main propeller shafts that were replaced with new zero-time parts at an overhaul of the PGB within the last 10,000 hours TIS, or inspected in accordance with GE Service Bulletin (SB) CT7-TP S/B 72-0531, dated June 22, 2017, or GE SB CT7-TP S/B 72-0533, dated October 3, 2017, satisfy the requirements specified in paragraph (g)(5) of this AD.

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

(1) The Manager, ECO Branch, FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. In accordance with 14 CFR 39.19, send your request to your principal inspector or local Flight Standards District Office, as appropriate. If sending information directly to the manager of the ECO Branch, send it to the attention of the person identified in paragraph (j) of this AD. You may email your request to: ANE-AD-AMOC@faa.gov.

(2) Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the local flight standards district office/certificate holding district office.

#### **(j) Related Information**

For more information about this AD, contact Michael Richardson-Bach, Aerospace Engineer, ECO Branch, FAA, 1200 District Avenue, Burlington, MA 01803; phone: 781-238-7747; fax: 781-238-7199; email: michael.richardson-bach@faa.gov.

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

(1) The Director of the Federal Register approved the incorporation by reference (IBR) of the service information listed in this paragraph under 5 U.S.C. 552(a) and 1 CFR part 51.

(2) You must use this service information as applicable to do the actions required by this AD, unless the AD specifies otherwise.

(i) SPM 70-32-03, SPOT-FLUORESCENT PENETRANT INSPECTION, TASK 70-32-03-230-002, from the GE Commercial Engine Standard Practices Manual GEK 9250, Rev. 106, dated April 01, 2007.

(ii) MM 72-10-00, PROPELLER GEARBOX INSPECTION, from the GE CT7B Maintenance Manual SEI-576, Rev. 60, dated October 1, 2017.

(iii) MM 72-10-00, PROPELLER GEARBOX–CLEANING, from the GE CT7B Maintenance Manual SEI-576, Rev. 60, dated October 1, 2017.

(3) For GE service information identified in this AD, contact General Electric Company, GE-Aviation, Room 285, 1 Neumann Way, Cincinnati, OH 45215; phone: 513-552-3272; fax: 513-552-3329; email: geae.aoc@ge.com.

(4) You may view this service information at FAA, Engine and Propeller Standards Branch, 1200 District Avenue, Burlington, MA 01803. For information on the availability of this material at the FAA, call 781-238-7759.

(5) You may view this service information that is incorporated by reference at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202-741-6030, or go to: <http://www.archives.gov/federal-register/cfr/ibr-locations.html>.

Issued in Burlington, Massachusetts, on February 8, 2018.

Robert J. Ganley,  
Acting Manager, Engine and Propeller Standards Branch,  
Aircraft Certification Service.