DATE:
AD #: 2024-05-51

Emergency Airworthiness Directive (AD) 2024-05-51 is sent to owners and operators of General Electric Company (GE) Model CT7-2E1, CT7-2F1, CT7-8A, CT7-8E, CT7-8F5 engines, and various restricted category helicopters with GE Model T700-GE-700, -701A, -701C, -701D/CC, -701D, -401, -401C, CT7-2D or CT7-2D1 engines installed.

Background

This emergency AD was prompted by at least four reports of failures of the torque reference tube magnetic insert braze joint of the power turbine drive shaft assembly within the last several months. This condition, if not addressed, could result in improper torque and engine speed indications, which in combination with specific phases of flight, could create an unacceptably high flight crew workload in maintaining control of the aircraft, and result in consequent loss of control of the aircraft.

Relevant Service Information

The FAA reviewed GE Alert Service Bulletin (ASB) CT7-2E1 S/B 72-A0034, dated February 26, 2024, and GE ASB CT7-8 S/B 72-A0118, Revision 01, dated February 26, 2024, which, among other actions, specify procedures for a phase array ultrasonic inspection of the torque reference tube magnetic insert braze joint of the power turbine drive shaft assembly for inadequate braze coverage. This service information also specifies repair or replacement of the power turbine drive shaft assembly if necessary.

FAA's Determination

The FAA is issuing this AD because the agency has determined the unsafe condition described previously is likely to exist or develop in other products of these same type designs.

AD Requirements

This AD requires a phase array ultrasonic inspection of the torque reference tube magnetic insert braze joint of the power turbine drive shaft assembly for inadequate braze coverage, and repair or replacement of the power turbine drive shaft assembly if necessary.

Interim Action

The FAA considers this AD to be an interim action. The manufacturer is currently investigating the root cause of the unsafe condition identified in this AD. If final action is later identified, the FAA might consider further rulemaking.

Justification for Immediate Adoption and Determination of the Effective Date

Section 553(b)(3)(B) of the Administrative Procedure Act (APA) (5 U.S.C. 551 *et seq.*) authorizes agencies to dispense with notice and comment procedures for rules when the agency, for

"good cause," finds that those procedures are "impracticable, unnecessary, or contrary to the public interest." Under this section, an agency, upon finding good cause, may issue a final rule without providing notice and seeking comment prior to issuance. Further, section 553(d) of the APA authorizes agencies to make rules effective in less than thirty days, upon a finding of good cause.

An unsafe condition exists that requires the immediate adoption of this emergency AD to all known U.S. owners and operators of these engines. The FAA has found that the risk to the flying public justifies foregoing notice and comment prior to adoption of this rule because failure of the torque reference tube magnetic insert braze joint of the power turbine drive shaft assembly could result in improper torque and engine speed indications, which in combination with specific phases of flight, could create an unacceptably high flight crew workload in maintaining control of the aircraft, and result in consequent loss of control of the aircraft. Since this condition happens rapidly and without warning, the inspection and any necessary repair or replacement must be accomplished before further flight. Thus, the FAA has determined that the affected torque reference tube magnetic insert braze joint of the power turbine drive shaft assembly must be inspected, and repaired or replaced if necessary, before further flight. Accordingly, notice and opportunity for prior public comment are impracticable and contrary to the public interest pursuant to 5 U.S.C. 553(b)(3)(B).

In addition, the FAA finds that good cause exists pursuant to 5 U.S.C. 553(d) for making this amendment effective in less than 30 days, for the same reasons the FAA found good cause to forego notice and comment.

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.

The FAA is 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

The FAA is issuing this AD under 49 U.S.C. Section 44701 according to the authority delegated to me by the Administrator.

2024-05-51 General Electric Company, and Various Restricted Category Helicopters: Project Identifier AD-2024-00139-E,R.

(a) Effective Date

This emergency AD is effective upon receipt.

(b) Affected ADs

None.

(c) Applicability

This AD applies to the following products:

(1) General Electric Company (GE) Model CT7-2E1, CT7-2F1, CT7-8A, CT7-8E, CT7-8F5 engines, with any power turbine (PT) drive shaft assembly part number 5123T91G01, 5123T91G02, and 5128T51G01 installed, and the following conditions:

(i) A PT drive shaft assembly with less than 100 hours-time since new (TSN) or 100 hours-time since replacement (TSR) of the torque reference tube, as applicable, as of the effective date of this AD; and

(ii) An engine serial number, PT module serial number, or PT shaft assembly serial number listed in GE Alert Service Bulletin (ASB) CT7-2E1 S/B 72-A0034, dated February 26, 2024 (CT7-2E1 S/B 72-A0034); or GE ASB CT7-8 S/B 72-A0118, Revision 01, dated February 26, 2024 (CT7-8 S/B 72-A0118, Revision 01).

(2) Restricted category helicopters specified in paragraphs (c)(2)(i) through (ix) of this AD, with GE Model T700-GE-700, -701A, -701C, -701D/CC, -701D, -401, -401C, CT7-2D or CT7-2D1 engines installed, with a PT drive shaft assembly that was installed in the engine after January 1, 2020 and has less than 100 hours-TSN or 100 hours-TSR, as applicable. PT drive shaft assemblies manufactured or repaired after January 1, 2024 are not affected by this AD.

(i) Model EH-60A helicopters; current type certificate holders include, but are not limited to, Delta Enterprise; Heliqwest International Inc.; Pickering Aviation, Inc.; and Sixtyhawk TC, LLC.

(ii) Model HH-60L helicopters; current type certificate holders include, but are not limited to, Capitol Helicopters Inc.; Central Copters Inc.; and Sixtyhawk TC, LLC.

(iii) Model S-70 helicopters; current type certificate holders include, but are not limited to, Sikorsky Aircraft Corporation.

(iv) Model S-70A helicopters; current type certificate holders include, but are not limited to, Sikorsky Aircraft Corporation.

(v) Model S-70C helicopters; current type certificate holders include, but are not limited to, Sikorsky Aircraft Corporation.

(vi) Model S-70C(M) helicopters; current type certificate holders include, but are not limited to, Sikorsky Aircraft Corporation.

(vii) Model S-70C(M1) helicopters; current type certificate holders include, but are not limited to, Sikorsky Aircraft Corporation.

(viii) Model S-70M helicopters; current type certificate holders include, but are not limited to, Sikorsky Aircraft Corporation.

(ix) Model UH-60A helicopters; current type certificate holders include, but are not limited to, ACE Aeronautics LLC; Billings Flying Service, Inc; Blackhawk Mission Equipment; Capitol Helicopters Inc.; Carson Helicopters; Delta Enterprise; Heliqwest International Inc.; High Performance Helicopters Corp.; Northwest Rotorcraft, LLC; Pickering Aviation, Inc.; PJ Helicopters Inc; Reeder Flying Service Inc.; Sixtyhawk TC, LLC; Skydance Blackhawk Operations LLC; Timberline Helicopters, Inc.; and Unical Air Inc.

(d) Subject

Joint Aircraft System Component (JASC) Code 7200, Engine (Turbine/Turboprop); 7250, Turbine Section.

(e) Unsafe Condition

This AD was prompted by at least four reports of failures of the torque reference tube magnetic insert braze joint of the power turbine drive shaft assembly within the last several months. The FAA is issuing this AD to prevent failure of the power turbine drive shaft reference torque tube magnetic insert braze joint. The unsafe condition, if not addressed, could result in improper torque and engine speed indications, which in combination with specific phases of flight, could create an unacceptably high flight crew workload in maintaining control of the aircraft, and result in consequent loss of control of the aircraft.

(f) Compliance

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

(g) Required Actions

(1) For GE Model CT7-2E1, CT7-2F1, CT7-8A, CT7-8E, CT7-8F5 engines: Before further flight, do a phase array ultrasonic inspection of the torque reference tube magnetic insert braze joint of the power turbine drive shaft assembly for inadequate braze coverage in accordance with the Accomplishment Instructions, paragraph 3.A.(2) of CT7-2E1 S/B 72-A0034, or CT7-8 S/B 72-A0118, Revision 01, as applicable.

(2) For engines installed on the restricted category aircraft specified in paragraphs (c)(2)(i) through (ix) of this AD: Before further flight, do a phase array ultrasonic inspection of the torque reference tube magnetic insert braze joint of the power turbine drive shaft assembly for inadequate braze coverage using a method approved by the Manager, AIR-520 Continued Operational Safety Branch, FAA.

(3) If during any inspection required by paragraphs (g)(1) or (2) of this AD, any braze coverage of the torque reference tube magnetic insert braze joint is found to be less than 42 percent, before further flight, repair or replace the power turbine drive shaft assembly.

(i) Special Flight Permit

A special flight permit may be issued in accordance with 14 CFR 21.197 and 21.199 to operate the aircraft to a location where the phase array ultrasonic inspection can be performed, provided no passengers are onboard.

(j) Alternative Methods of Compliance (AMOCs)

(1) The Manager, AIR-520 Continued Operational Safety 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 AIR-520 Continued Operational Safety Branch, send it to the attention of the person identified in paragraph (k)(1) of this AD and email 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.

(k) Additional Information

(1) For further information about this AD, contact: Barbara Caufield, Aviation Safety Engineer, FAA, 2200 South 216th Street, Des Moines, WA 98198; phone: (781) 238-7146; email: barbara.caufield@faa.gov.

(2) For service information identified in this AD, contact: General Electric Company, 1 Neumann Way, Cincinnati, OH 45215; phone: (513) 552-3272; email: aviation.fleetsupport@ge.com; website: ge.com. You may view this referenced service information at the FAA, Airworthiness Products Section, Operational Safety Branch, 1200 District Avenue, Burlington, MA 01803. For information on the availability of this material at the FAA, call (817) 222-5110.

Issued on February 28, 2024.

Caitlin Locke, Director,
Compliance & Airworthiness Division,
Aircraft Certification Service.