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## **DEPARTMENT OF TRANSPORTATION**

### **Federal Aviation Administration**

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

**[Docket No. FAA-2015-6823; Directorate Identifier 2015-NE-38-AD; Amendment 39-18360; AD 2015-27-01]**

**RIN 2120-AA64**

#### **Airworthiness Directives; General Electric Company Turbofan 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 all General Electric Company (GE) GE90-76B, -77B, -85B, -90B, and -94B turbofan engines. This AD requires performing an eddy current inspection (ECI) or ultrasonic inspection (USI) of the high-pressure compressor (HPC) stage 8-10 spool and removing from service those parts that fail inspection. This AD was prompted by an uncontained failure of the HPC stage 8-10 spool, leading to an airplane fire. We are issuing this AD to prevent failure of the HPC stage 8-10 spool, uncontained rotor release, damage to the engine, and damage to the airplane.

**DATES:** This AD is effective January 27, 2016.

We must receive comments on this AD by February 26, 2016.

**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.

## **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-2015-6823; 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:** John Frost, Aerospace Engineer, Engine Certification Office, FAA, Engine & Propeller Directorate, 12 New England Executive Park, Burlington, MA 01803; phone: 781-238-7756; fax: 781-238-7199; email: [john.frost@faa.gov](mailto:john.frost@faa.gov).

## **SUPPLEMENTARY INFORMATION:**

### **Discussion**

We received a report of an HPC stage 8-10 spool uncontained failure resulting in an airplane fire. Ongoing investigations have determined that a crack initiated in the stage 8 aft web upper face of the HPC 8-10 spool and propagated until spool rupture. The root cause of the crack initiation is not yet known. This condition, if not corrected, could result in failure of the HPC stage 8-10 spool, uncontained rotor release, damage to the engine, and damage to the airplane. We are issuing this AD to correct the unsafe condition on these products.

### **Related Service Information**

We reviewed GE Service Bulletin (SB) No. GE90 S/B 72-1145, dated November 24, 2015. The SB describes procedures for one-time on-wing USI of the stage 8 web of the stage 8-10 spool. We also reviewed the following chapters of GE GE90 Engine Manual, GEK100700, Revision 66, dated September 1, 2015:

- Chapter 72-31-08, Special Procedure 003, piece-part level ECI,
- Chapter 72-00-31, Special Procedure 006, rotor assembly and module level ECI and,
- Chapter 72-00-31, Special Procedure 007, rotor assembly level USI.

### **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 accomplishing an ECI or USI of the stage 8 aft web upper face of the HPC stage 8-10 spool and removing from service those parts that fail inspection.

### **Interim Action**

We consider this AD interim action. GE is determining the root cause for the unsafe condition identified in this AD. Once a root cause is identified, we might consider additional rulemaking.

## **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 based on the reported engine failure. 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 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 AD. Send your comments to an address listed under the ADDRESSES section. Include "Docket No. FAA-2015-6823; Directorate Identifier 2015-NE-38-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 this AD affects 1 engine installed on an airplane of U.S. registry. We also estimate that it will take about 7 hours per engine to comply with this AD. The average labor rate is \$85 per hour. Required parts cost about \$780,000 per engine. Based on these figures, we estimate the total cost of the AD to U.S. operators to be \$780,595.

## **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 to the extent that it justifies making a regulatory distinction, 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):



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**2015-27-01 General Electric Company:** Amendment 39-18360; Docket No. FAA-2015-6823; Directorate Identifier 2015-NE-38-AD.

**(a) Effective Date**

This AD is effective January 27, 2016.

**(b) Affected ADs**

None.

**(c) Applicability**

This AD applies to General Electric Company (GE) GE90-76B, -77B, -85B, -90B, and -94B turbofan engines with high-pressure compressor (HPC) stage 8-10 spool, part number 1694M80G04, installed.

**(d) Unsafe Condition**

This AD was prompted by an uncontained failure of the HPC stage 8-10 spool, leading to an airplane fire. We are issuing this AD to prevent failure of the HPC stage 8-10 spool, uncontained rotor release, damage to the engine, and damage to the airplane.

**(e) Compliance**

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

(1) Perform an eddy current inspection or ultrasonic inspection of the stage 8 aft web upper face of the HPC stage 8-10 spool for cracks as follows:

(i) For HPC stage 8-10 spools with serial number (S/N) GWNHC086 or GWNHB875, inspect within 150 cycles-in-service (CIS), after the effective date of this AD.

(ii) For HPC stage 8-10 spools with S/N GWNHC154, GWNHA455, GWNHC153, or GWNHB516, inspect within 300 CIS, after the effective date of this AD.

(2) Remove from service any HPC stage 8-10 spool that fails the inspection required by paragraph (e)(1) of this AD and replace the spool with a spool eligible for installation.

**(f) Alternative Methods of Compliance (AMOCs)**

The Manager, Engine Certification Office, FAA, may approve AMOCs for this AD. Use the procedures found in 14 CFR 39.19 to make your request. You may email your request to: ANE-AD-AMOC@faa.gov.

**(g) Related Information**

For more information about this AD, contact John Frost, Aerospace Engineer, Engine Certification Office, FAA, Engine & Propeller Directorate, 12 New England Executive Park, Burlington, MA 01803; phone: 781-238-7756; fax: 781-238-7199; email: john.frost@faa.gov.

**(h) Material Incorporated by Reference**

None.

Issued in Burlington, Massachusetts, on December 21, 2015.  
Colleen M. D'Alessandro,  
Directorate Manager, Engine & Propeller Directorate,  
Aircraft Certification Service.