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## **DEPARTMENT OF TRANSPORTATION**

### **Federal Aviation Administration**

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

**[Docket No. FAA-2019-0394; Product Identifier 2017-NE-36-AD; Amendment 39-19784; AD 2019-22-05]**

**RIN 2120-AA64**

### **Airworthiness Directives; General Electric Company Turbofan Engines**

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

**ACTION:** Final rule.

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**SUMMARY:** The FAA is superseding Airworthiness Directive (AD) 2017-23-06, for certain General Electric Company (GE) CF34-8C1, CF34-8C5, CF34-8C5A1, and CF34-8C5B1 engines. AD 2017-23-06 required an inspection of the bleed air manifold link rod assemblies and the supply, return, and drain fuel fittings on the operability bleed valve (OBV). This AD requires repetitive inspections of the OBV fuel tubes, OBV bleed air manifold link rod assemblies, and the OBV fuel fittings and replacement of OBVs or related hardware that fail inspection. In addition, this AD expands the applicability of these inspections to include additional GE CF34-8C model turbofan engines. This AD was prompted by multiple engine fires that have occurred as a result of malfunctions related to the OBV. The FAA is issuing this AD to address the unsafe condition on these products.

**DATES:** This AD is effective December 23, 2019.

The Director of the Federal Register approved the incorporation by reference of a certain publication listed in this AD as of December 23, 2019.

**ADDRESSES:** 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 <https://www.regulations.gov> by searching for and locating Docket No. FAA-2019-0394.

## **Examining the AD Docket**

You may examine the AD docket on the internet at <https://www.regulations.gov> by searching for and locating Docket No. FAA-2019-0394; or in person at Docket Operations 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 address for Docket Operations is U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE, Washington, DC 20590.

**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**

The FAA issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 to supersede AD 2017-23-06, Amendment 39-19100 (82 FR 52830, November 15, 2017), (“AD 2017-23-06”). AD 2017-23-06 applied to certain GE CF34-8C1, CF34-8C5, CF34-8C5A1, and CF34-8C5B1 engines. The NPRM published in the Federal Register on June 28, 2019 (84 FR 30956). The NPRM was prompted by multiple engine fires that have occurred as a result of malfunctions related to the OBV. The NPRM proposed to require repetitive inspections of the OBV fuel tubes, OBV bleed air manifold link rod assemblies, and the OBV fuel fittings and replacement of OBVs or related hardware that fail inspection. In addition, the NPRM proposed to expand the applicability of these inspections to include additional GE CF34-8C model turbofan engines. The FAA is issuing this AD to address the unsafe condition on these products.

### **Comments**

The FAA gave the public the opportunity to participate in developing this AD. The following presents the comments received on the NPRM and the FAA's response to each comment.

### **Request To Change the Inspection Intervals**

GE requested that the FAA extend the initial and repetitive inspection intervals to 16,000 flight hours (FHs) and 1,680 FHs, respectively, for engines equipped with OBV part number (P/N) 4123T71P05. GE reasoned that based on testing and analysis, OBV P/N 4123T71P05 is more resistant to wear than OBV P/N 4123T71P04, and earlier versions, if the installation support links are regularly inspected and maintained.

The FAA disagrees with extending the inspection intervals for engines equipped with OBV P/N 4123T71P05 because the FAA did not find GE's test and analysis data sufficient to justify the extended inspection intervals. The FAA did not change this AD.

### **Request To Update the Applicability**

The National Transportation Safety Board (NTSB) supported this AD and requested that the FAA consider similar rulemaking to include the GE CF34-8E model turbofan engines. The NTSB suggested that the unsafe condition exists on this engine and that the FAA should identify the higher-risk OBVs and publish an AD that mandates a repetitive inspection for the GE CF34-8E OBVs.

The FAA agrees to consider future rulemaking for the GE CF34-8E model turbofan engines because those engines have experienced the same unsafe condition addressed by the engine models of this AD. The FAA did not change this AD.

## Support for the AD

The Air Line Pilots Association International and an individual commenter expressed support for the AD as written.

## Conclusion

The FAA reviewed the relevant data, considered the comments received, and determined that air safety and the public interest require adopting this AD as proposed except for minor editorial changes. The FAA has determined that these minor changes:

Are consistent with the intent that was proposed in the NPRM for addressing the unsafe condition; and

Do not add any additional burden upon the public than was already proposed in the NPRM.

## Related Service Information Under 1 CFR Part 51

The FAA reviewed GE Service Bulletin (SB) CF34-8C S/B 75-0020, R04, dated May 10, 2019. The SB describes procedures for inspecting the bleed air manifold link rod assemblies; the supply, return, and drain fuel fittings; and the fuel tubes on the OBV. 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.

## Costs of Compliance

The FAA estimates that this AD affects 1,297 engines installed on airplanes of U.S. registry. The FAA estimates the following costs to comply with this AD:

### Estimated Costs

Action	Labor cost	Parts cost	Cost per product	Cost on U.S. operators
Inspection of OBV fuel tubes, assemblies, and fittings	1 work-hour × \$85 per hour = \$85	\$0	\$85	\$110,245

The FAA estimates the following costs to do any necessary replacements that would be required based on the results of the inspection. The FAA has no way of determining the number of aircraft that might need these replacements:

### On-Condition Costs

Action	Labor cost	Parts cost	Cost per product
Replace OBV	2 work-hours × \$85 per hour = \$170	\$17,230	\$17,400
Replace OBV support hardware	2.25 work-hours × \$85 per hour = \$191.25	3,595	3,786.25

## **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.

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**

The FAA has determined that 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) Will not affect intrastate aviation in Alaska, and
- (3) 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 removing Airworthiness Directive (AD) 2017-23-06, Amendment 39-19100 (82 FR 52830, November 15, 2017), and adding the following new AD:



**2019-22-05 General Electric Company:** Amendment 39-19784; Docket No. FAA-2019-0394; Product Identifier 2017-NE-36-AD.

**(a) Effective Date**

This AD is effective December 23, 2019.

**(b) Affected ADs**

This AD replaces AD 2017-23-06, Amendment 39-19100 (82 FR 52830, November 15, 2017).

**(c) Applicability**

This AD applies to all General Electric Company (GE) CF34-8C1, CF34-8C5, CF34-8C5A1, CF34-8C5B1, CF34-8C5A2, and CF34-8C5A3 model turbofan engines.

**(d) Subject**

Joint Aircraft System Component (JASC) Code 7531, Compressor bleed governor.

**(e) Unsafe Condition**

This AD was prompted by multiple engine fires that have occurred as a result of malfunctions related to the operability bleed valve (OBV). The FAA is issuing this AD to prevent failure of the OBV. The unsafe condition, if not addressed, could result in engine fire and damage to the airplane.

**(f) Compliance**

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

**(g) Required Actions**

(1) For CF34-8C1, CF34-8C5, CF34-8C5A1, and CF34-8C5B1 model turbofan engines with serial numbers (S/Ns): 965101 through 965670 inclusive; 194101 through 194999 inclusive; and 195101 through 195653 inclusive:

(i) Perform an inspection of the OBV bleed air manifold link rod assemblies and the OBV fuel fittings within 500 flight hours after November 30, 2017 (effective date of AD 2017-23-06), or before next flight after the effective date of this AD, whichever occurs later.

(ii) Within 880 flight hours since the previous inspection, 500 flight hours from the effective date of this AD, or 6,880 flight hours since new, whichever occurs later, inspect the OBV bleed air manifold link rod assemblies, the OBV fuel fittings, and the OBV fuel tubes.

(iii) Thereafter, perform additional repeat inspections of the OBV bleed air manifold link rod assemblies, the OBV fuel fittings, and the OBV fuel tubes within every 880 flight hours since the previous inspection.

(iv) Use the Accomplishment Instructions, Paragraph 3.B., of GE CF34-8C S/B 75-0020, R04, dated May 10, 2019 (“the SB”), to perform the inspections in paragraphs (g)(1)(i) through (iii) of this AD and, per the criteria for the results of inspections in Paragraph 3.B. of the SB, do the following:

(A) Replace any OBV or fuel tube that is leaking and tighten or replace any loose OBV fuel tube clamps with a part eligible for installation before further flight.

(B) Replace any worn OBV link rod assembly hardware within 50 flight cycles after the inspection required by paragraphs (g)(1)(i), (ii), or (iii) of this AD. The engine can be returned to service each day for up to the 50 flight cycles if the OBV fittings are inspected each day for fuel leaks and looseness and, if they do not require removal based on the criteria in Table 1, “OBV Inspection,” of GE SB CF34-8C S/B 75-0020, R04, dated May 10, 2019.

(2) For CF34-8C5B1 model turbofan engines with S/Ns not listed in paragraph (g)(1) of this AD and for all CF34-8C5A2 and CF34-8C5A3 model turbofan engines, perform the following:

(i) For engines with 6,000 flight hours or more since new on the effective date of this AD, perform an initial inspection of the OBV bleed air manifold link rod assemblies, OBV fuel fittings, and OBV fuel tubes within 880 flight hours after the effective date of this AD.

(ii) For engines with less than 6,000 flight hours since new on the effective date of this AD, perform an initial inspection of the OBV bleed air manifold link rod assemblies, OBV fuel fittings, and OBV fuel tubes within 880 flight hours time in service or 6,880 flight hours since new, whichever occurs later.

(iii) Thereafter, repeat the inspection of the OBV bleed air manifold link rod assemblies, OBV fuel fittings, and OBV fuel tubes within 880 flight hours since the last inspection.

(iv) Use the Accomplishment Instructions, Paragraph 3.B., of GE CF34-8C S/B 75-0020, R04, dated May 10, 2019, to perform the inspections in paragraphs (g)(2)(i) through (iii) of this AD.

(v) Replace any parts according to the criteria in paragraph (g)(1)(iv) of this AD after the inspection required by paragraphs (g)(2)(i), (ii), or (iii) of this AD.

(3) For all affected engines, the reporting instructions in GE SB CF34-8C S/B 75-0020, R04, dated May 10, 2019, are not required by this AD.

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

(1) For engines identified in paragraph (g)(1) of this AD, you may take credit for the inspection of the OBV bleed air manifold link rod assemblies and the OBV fuel fittings required by paragraph (g)(1)(i) of this AD if you performed this inspection before November 30, 2017 (the effective date of AD 2017-23-06) using GE SB CF34-8C SB 75-0019, Revision 01, dated October 24, 2017, or R00, dated August 4, 2017.

(2) For all affected engines, you may take credit for the inspection of the OBV bleed air manifold link rod assemblies and the OBV fuel fittings required by paragraph (g)(1)(i) or (g)(2)(i) of this AD if you performed this inspection before the effective date of this AD using GE SB CF34-8C SB 75-0020, Revision 03, dated December 14, 2018.

(3) You are still required to perform the repeat inspections and any replacements, as needed, required by paragraphs (g)(1)(ii) through (g)(1)(iv) 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 certification office, 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) General Electric Company (GE) Service Bulletin CF34-8C SB 75-0020, R04, dated May 10, 2019.

(ii) [Reserved]

(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 at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, email: fedreg.legal@nara.gov, or go to: <https://www.archives.gov/federal-register/cfr/ibr-locations.html>.

Issued in Burlington, Massachusetts, on November 6, 2019.

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