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## **DEPARTMENT OF TRANSPORTATION**

### **Federal Aviation Administration**

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

**[Docket No. FAA-2018-0633; Product Identifier 2018-NE-22-AD; Amendment 39-19470; AD 2018-21-12]**

**RIN 2120-AA64**

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

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

**ACTION:** Final rule.

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**SUMMARY:** We are adopting a new airworthiness directive (AD) for certain General Electric Company (GE) GENx-2B67, -2B67B, and -2B67/P turbofan engines. This AD was prompted by low-cycle fatigue (LCF) cracking of the fuel manifold leading to an engine fire. This AD requires removal from service of certain fuel manifolds at the next engine shop visit and their replacement with parts eligible for installation. We are issuing this AD to address the unsafe condition on these products.

**DATES:** This AD is effective January 4, 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; email: aviation.fleetsupport@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-2018-0633.

#### **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-2018-0633; 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 (phone: 800-647-5527) 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:** Herman Mak, Aerospace Engineer, ECO Branch, FAA, 1200 District Avenue, Burlington, MA 01803; phone: 781-238-7147; fax: 781-238-7199; email: herman.mak@faa.gov.

**SUPPLEMENTARY INFORMATION:**

**Discussion**

We issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 by adding an AD that would apply to certain GE GENx-2B67, -2B67B, and -2B67/P turbofan engines. The NPRM published in the Federal Register on August 3, 2018 (83 FR 38086). The NPRM was prompted by LCF cracking of the fuel manifold leading to an engine fire. The NPRM proposed to require removal from service of certain fuel manifolds at the next engine shop visit and their replacement with parts eligible for installation. We are issuing this AD to address the unsafe condition on these products.

**Revision to Related Service Information**

GE published GENx-2B Service Bulletin (SB) 73-0038 R03, dated August 17, 2018, to provide operators with instructions for replacing the lower fuel manifold system when in the intermixed configuration. This SB eliminates the need to replace the top main and lower fuel manifolds in the shop.

**Comments**

We gave the public the opportunity to participate in developing this final rule. We have considered the comment received. The Boeing Company supported the NPRM.

**Conclusion**

We reviewed the relevant data, considered the comment received, and determined that air safety and the public interest require adopting this final rule as proposed.

**Related Service Information**

We reviewed GE GENx-2B SB 73-0038 R02, dated November 19, 2015, and GENx-2B SB 73-0038 R03, dated August 17, 2018. GE GENx-2B SB 73-0038 R02, dated November 19, 2015 describes procedures for removing and replacing the fuel manifold system with parts eligible for installation. GE GENx-2B SB 73-0038 R03, dated August 17, 2018 describes procedures for replacing the fuel manifold system when in the intermixed configuration.

**Costs of Compliance**

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

**Estimated Costs**

<b>Action</b>	<b>Labor cost</b>	<b>Parts cost</b>	<b>Cost per product</b>	<b>Cost on U.S. operators</b>
Replace fuel manifolds	220 work-hours × \$85 per hour = \$18,700	\$119,485	\$138,185	\$276,370

## **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):



**2018-21-12 General Electric Company:** Amendment 39-19470; Docket No. FAA-2018-0633; Product Identifier 2018-NE-22-AD.

**(a) Effective Date**

This AD is effective January 4, 2019.

**(b) Affected ADs**

None.

**(c) Applicability**

This AD applies to General Electric Company (GE) GEnx-2B67, -2B67B, and -2B67/P turbofan engines with top main fuel manifolds, part numbers (P/Ns) 2419M11G01, 2561M11G01, or 2546M11G01, or lower fuel manifolds, P/Ns 2419M12G01, 2561M12G01, or 2546M12G01, installed.

**(d) Subject**

Joint Aircraft System Component (JASC) Code 7310, Engine Fuel Distribution.

**(e) Unsafe Condition**

This AD was prompted by low-cycle fatigue cracking of the fuel manifold leading to an engine fire. We are issuing this AD to prevent the failure of the fuel manifold. The unsafe condition, if not addressed, could result in failure of the fuel manifold, engine fire, and damage to the airplane.

**(f) Compliance**

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

**(g) Required Actions**

At the next engine shop visit, remove the applicable fuel manifolds from service and replace with parts eligible for installation.

**(h) Installation Prohibition**

After the effective date of this AD, do not install top main fuel manifolds, P/Ns 2419M11G01, 2561M11G01, or 2546M11G01, or lower fuel manifolds, P/Ns 2419M12G01, 2561M12G01, or 2546M12G01.

**(i) Definition**

For the purpose of this AD, an “engine shop visit” is the induction of an engine into the shop for maintenance involving the separation of pairs of major mating engine case flanges, except for the following situations, which do not constitute an engine shop visit:

(1) Separation of engine flanges solely for the purposes of transportation of the engine without subsequent maintenance.

(2) Separation of engine flanges solely for the purposes of replacing the fan or propulsor without subsequent maintenance.

**(j) 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 (k) 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.

**(k) Related Information**

For more information about this AD, contact Herman Mak, Aerospace Engineer, ECO Branch, FAA, 1200 District Avenue, Burlington, MA 01803; phone: 781-238-7147; fax: 781-238-7199; email: herman.mak@faa.gov.

**(l) Material Incorporated by Reference**

None.

Issued in Burlington, Massachusetts, on November 27, 2018.

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