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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2018-0898; Product Identifier 2018-NE-29-AD; Amendment 39-19456; AD 2018-20-22]

RIN 2120-AA64

Airworthiness Directives; General Electric Company Turbofan Engines

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule; request for comments.

SUMMARY: We are adopting a new airworthiness directive (AD) for all General Electric Company (GE) GE90-110B1, GE90-113B, and GE90-115B turbofan engines with a certain case combustor assembly (combustion case) installed. This AD requires removal of affected combustion cases from service and their replacement with a part eligible for installation. This AD was prompted by the discovery of a quality escape at a manufacturing facility involving unapproved welds on combustion cases. We are issuing this AD to address the unsafe condition on these products.

DATES: This AD is effective November 13, 2018.

The Director of the Federal Register approved the incorporation by reference of certain publications listed in this AD as of November 13, 2018.

We must receive comments on this AD by December 10, 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, 1 Neumann Way, Cincinnati, OH 45215; telephone 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-2018-0898.

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-2018-0898; 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 street address for the Docket Operations (phone: 800-647-5527) is listed above. Comments will be available in the AD docket shortly after receipt.

FOR FURTHER INFORMATION CONTACT: Matthew Smith, Aerospace Engineer, ECO Branch, FAA, 1200 District Avenue, Burlington, MA 01803; phone: 781-238-7735; fax: 781-238-7199; email: matthew.c.smith@faa.gov.

SUPPLEMENTARY INFORMATION:

Discussion

We learned from GE of a quality escape that one of their suppliers, AECC Aero Science and Technology Co., Ltd., was performing welds on newly-manufactured components to correct errors introduced in their manufacturing process. These welds were not reviewed or approved by either GE or the FAA. GE's review of manufacturing records determined that these parts include combustion cases installed on GE GE90-100 turbofan engines. These combustion cases are life limited. The unapproved repairs reduced the material capability of these cases, which requires their removal prior to reaching their published Airworthiness Limitation Section life limit. This condition, if not addressed, could result in failure of the combustion case, engine fire, and damage to the airplane. We are issuing this AD to address the unsafe condition on these products.

Related Service Information Under 1 CFR Part 51

We reviewed GE GE90-100 Service Bulletin (SB) SB 72-0784 R00, dated May 4, 2018; GE SB GE90-100 S/B 72-0788, Revision 4, dated July 30, 2018; and GE SB GE90-100 SB 72-0793 R00, dated August 10, 2018. The SBs describe procedures for removing the affected combustion cases from the engine. GE SB GE90-100 SB 72-0784 R00 is effective for GE90-100 turbofan engines with the combustion case S/Ns listed in that SB. GE SB GE90-100 S/B 72-0788 is effective for GE90-100 turbofan engines with the combustion case S/Ns listed in that SB. GE SB GE90-100 SB 72-0793 R00 is effective for GE90-100 turbofan engines with the combustion case S/Ns listed in that SB. 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.

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 removal of the affected combustion cases from service and their replacement with a part eligible for installation.

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 the adoption of this rule because the compliance time for the required action is shorter than the time necessary for the public to comment and for us to publish the final rule. Certain combustion cases must be removed within 10 cycles after the effective date of this AD to ensure they do not fail. Therefore, we find good cause 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 FAA-2018-0898 and Product Identifier 2018-NE-29-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 six 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 |
|------------------------------------|---|------------|------------------|------------------------|
| Replacement of the combustion case | 20 work-hours × \$85 per hour = \$1,700 | \$623,700 | \$625,400 | \$3,752,400 |

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):



FAA
Aviation Safety

AIRWORTHINESS DIRECTIVE

www.faa.gov/aircraft/safety/alerts/
www.gpoaccess.gov/fr/advanced.html

2018-20-22 General Electric Company: Amendment 39-19456; Docket No. FAA-2018-0898; Product Identifier 2018-NE-29-AD.

(a) Effective Date

This AD is effective November 13, 2018.

(b) Affected ADs

None.

(c) Applicability

(1) This AD applies to General Electric Company (GE) GE90-110B1, GE90-113B, and GE90-115B turbofan engines with a case combustor assembly (combustion case), part number (P/N) 2063M37G01 or 2082M19G04, installed with combustion case serial number (S/N) listed in:

(i) Table 1 in paragraph 1.A., Planning Information, of GE GE90-100 Service Bulletin (SB) S/B 72-0788, Revision 4, dated July 30, 2018; or

(ii) Paragraph 1.A., Table 1 of GE SB GE90-100 SB 72-0793 R00, dated August 10, 2018; or

(iii) Paragraph 1.A., Planning Information, of GE SB GE90-100 SB 72-0784 R00, dated May 4, 2018.

(2) [Reserved.]

(d) Subject

Joint Aircraft System Component (JASC) Code 7250, Turbine Section.

(e) Unsafe Condition

This AD was prompted by the discovery of a quality escape at a manufacturing facility involving unapproved welds on combustion cases. We are issuing this AD to prevent failure of the combustion case. 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 combustion cases listed in Planning Information, Table 1, paragraph 1.A. of GE SB GE90-100 S/B 72-0788, Revision 4, dated July 30, 2018, except combustion cases with S/Ns FDBK3717, FDBK3872, or FDBK4849, remove the affected cases from service, using the cycles specified in Table 1 to paragraph (g) of this AD.

Table 1 to Paragraph (g) of this AD – Compliance Times

| Cycles Since New (CSN) of combustion case on Effective Date of this AD | Remove from Service (cycles after the effective date of this AD) |
|---|---|
| Less than 1000 | 150 cycles |
| 1001 to 2000 | 125 cycles |
| 2001 to 3000 | 100 cycles |
| 3001 to 4000 | 75 cycles |
| 4001 to 5000 | 50 cycles |
| 5001 or more | 25 cycles |

(2) For combustion cases with S/Ns listed in Table 3, paragraph 1.C., Planning Information, of GE SB GE90-100 S/B 72-0788, Revision 4, dated July 30, 2018, remove the affected cases from service before exceeding the Maximum In-Service CSN listed in Table 3, of GE SB GE90-100 S/B 72-0788, Revision 4, dated July 30, 2018.

(3) For combustion cases with S/Ns listed in paragraph 1.A., Planning Information, of GE SB GE90-100 SB 72-0784 R00, dated May 4, 2018, remove the affected cases from service within 10 cycles in service from the effective date of this AD.

(4) For combustion cases with S/Ns listed in Table 1, paragraph 1.A., Planning Information, of GE SB GE90-100 SB 72-0793 R00, dated August 10, 2018, remove the affected cases from service at the next engine shop visit.

(5) Replace the removed combustion case with a part eligible for installation before further flight.

(h) Definitions

(1) 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 flanges, except that the separation of engine flanges solely for the purposes of transportation of the engine, without subsequent engine maintenance, does not constitute an engine shop visit.

(2) For the purpose of this AD, a “part eligible for installation” is any combustion case not identified in paragraph (c)(1) of this AD or a combustion case listed in this AD that has been inspected and repaired by a method approved by the Manager, ECO Branch, FAA.

(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 Matthew Smith, Aerospace Engineer, ECO Branch, FAA, 1200 District Avenue, Burlington, MA 01803; phone: 781-238-7735; fax: 781-238-7199; email: matthew.c.smith@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) GE90-100 Service Bulletin (SB) SB 72-0784 R00, dated May 4, 2018.

(ii) GE SB GE90-100 S/B 72-0788, Revision 4, dated July 30, 2018.

(iii) GE SB GE90-100 SB 72-0793 R00, dated August 10, 2018.

(3) For service information identified in this AD, contact General Electric Company, GE Aviation, 1 Neumann Way, Cincinnati, OH 45215; telephone 513-552-3272; email: aviation.fleetsupport@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 October 18, 2018.

Karen M. Grant,
Acting Manager, Engine and Propeller Standards Branch,
Aircraft Certification Service.