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[4910-13-P]

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2019-0683; Product Identifier 2015-NE-02-AD;]

RIN 2120-AA64

Airworthiness Directives; General Electric Company Turbofan Engines

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Notice of proposed rulemaking (NPRM).

SUMMARY: The FAA proposes to supersede Airworthiness Directive (AD) 2017-09-06, which applies to all General Electric Company (GE) GEnx-1B and GEnx-2B model turbofan engines. AD 2017-09-06 requires updating electronic engine control (EEC) full authority digital electronic control (FADEC) software and replacing a certain fan hub frame assembly part installed on GEnx-2B turbofan engines. Since the FAA issued AD 2017-09-06, GE has developed a design change to remove the unsafe condition. This proposed AD would require removal from service of certain EEC FADEC software on GEnx-1B and GEnx-2B model turbofan engines and would also require replacing the affected fan hub frame assembly booster outlet guide vanes. The FAA is proposing this AD to address the unsafe condition on these products.

DATES: The FAA must receive comments on this proposed AD by **[INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER]**.

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 https://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: Deliver to Mail address above between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

For service information identified in this NPRM, contact General Electric Company, GE Aviation, Room 285, 1 Neumann Way, Cincinnati, OH 45215; phone: 513-552-3272; 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.

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-2019-0683; 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 NPRM, the regulatory evaluation, any comments received, and other information. The street address for Docket Operations is listed above. Comments will be available in the AD docket shortly after receipt.

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:

Comments Invited

The FAA invites you to send any written relevant data, views, or arguments about this proposed AD. Send your comments to an address listed under the ADDRESSES section. Include "Docket No. FAA-2019-0683; Product Identifier 2015-NE-02-AD" at the beginning of your comments. The FAA specifically invites comments on the overall

regulatory, economic, environmental, and energy aspects of this NPRM. The FAA will consider all comments received by the closing date and may amend this NPRM because of those comments.

The FAA will post all comments received, without change, to https://www.regulations.gov, including any personal information you provide. The FAA will also post a report summarizing each substantive verbal contact received about this proposed AD.

Discussion

The FAA issued AD 2017-09-06, Amendment 39-18868 (82 FR 21111, May 5, 2017), ("AD 2017-09-06"), for all GE GEnx-1B and GEnx-2B model turbofan engines. AD 2017-09-06 requires replacing certain EEC FADEC software with versions eligible for installation. AD 2017-09-06 also requires removing from service certain GE GEnx-2B67, -2B67B, and -2B67/P fan hub stator assembly booster outlet guide vanes. AD 2017-09-06 resulted from reports of GEnx-1B and GEnx-2B model turbofan engines experiencing power loss in ice crystal icing (ICI) conditions. The FAA issued AD 2017-09-06 to prevent engine failure, loss of thrust control, and damage to the airplane.

Actions Since AD 2017-09-06 Was Issued

Since the FAA issued AD 2017-09-06, the FAA learned that the required actions in that AD do not adequately address the unsafe condition. Engine rollback still occurs as ICI mitigation software installed as required by AD 2017-09-06 does not activate during the climb phase of airplane flight. In response, GE developed revised software that will activate while the airplane is climbing. This AD requires removing from service certain EEC FADEC software.

Related Service Information

The FAA reviewed GE GEnx-1B Service Bulletin (SB) 73-0082 R00, dated July 9, 2019, and GE GEnx-2B SB 73-0077 R00, dated October 29, 2018. The service

information describes procedures for installation of new EEC FADEC software on GEnx-1B and GEnx-2B model turbofan engines. The FAA also reviewed GE GEnx-2B SB 72-0241 R00, dated March 16, 2016. The service information describes removal and installation procedures for the fan hub stator assembly booster outlet guide vane.

FAA's Determination

The FAA is proposing 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.

Proposed AD Requirements

This proposed AD would retain certain requirements of AD 2017-09-06. This proposed AD would continue to require replacement of certain fan hub stator assembly booster outlet guide vanes installed on GE GEnx-2B67, -2B67B, and -2B67/P engines. This proposed AD would also require removing from service certain EEC FADEC software versions installed on GE GEnx-1B and GEnx-2B model turbofan engines.

Costs of Compliance

The FAA estimates that this proposed AD affects 110 engines installed on airplanes of U.S. registry. The FAA estimates that 15 engines will require replacement of the fan hub stator assembly booster outlet guide vanes.

The FAA estimates the following costs to comply with this proposed AD:

Estimated costs

Action	Labor cost	Parts cost	Cost per product	Cost on U.S. operators
Remove EEC software	1 work-hour X $85 per hour = $85	$0	$85	$9,350

Replace fan hub stator assembly booster outlet guide vanes	60 work-hours X $85 per hour = $5,100	$387,800	$392,900	$5,893,500

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 proposed AD would not have federalism implications under Executive Order 13132. This proposed AD would 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 the proposed regulation:

(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.

The Proposed Amendment

Accordingly, under the authority delegated to me by the Administrator, the FAA proposes to amend 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) 2017-09-06, Amendment 39-18868 (82 FR 21111, May 5, 2017), and adding the following new AD:

General Electric Company: Docket No. FAA-2019-0683; Product Identifier 2015-NE-02-AD.

(a) Comments Due Date

The FAA must receive comments on this AD action by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

(b) Affected ADs

This AD replaces AD 2017-09-06, Amendment 39-18868 (82 FR 21111, May 5, 2017).

(c) Applicability

This AD applies to all General Electric Company (GE) GEnx-1B and GEnx-2B model turbofan engines.

(d) Subject

Joint Aircraft System Component (JASC) Code 7600, Engine Controls.

(e) Unsafe Condition

This AD was prompted by reports of GEnx-1B and GEnx-2B model turbofan engines experiencing power loss in ice crystal icing conditions. The FAA is issuing this AD to prevent engine failure. The unsafe condition, if not addressed, could result in loss of thrust control and damage to the airplane.

(f) Compliance

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

(g) Required Actions

(1) Within 120 days after the effective date of this AD, for GE GEnx-1B model turbofan engines, remove electronic engine control (EEC) full authority digital engine control (FADEC) software, version B195 or earlier, from the engine and from service.

(2) Within 120 days after the effective date of this AD, for GE GEnx-2B model turbofan engines, remove EEC FADEC software, version C085 or earlier, from the engine and from service.

(3) At the next engine shop visit after June 9, 2017 (the effective date of AD 2017-09-06), or before further flight, whichever occurs later, remove from service all GE GEnx-2B67, -2B67B, and -2B67/P fan hub stator assembly booster outlet guide vanes, part number B1316-00720, and replace with a part eligible for installation.

(h) 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 which do not constitute an engine shop visit:

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

(2) Separation of engine flanges solely for the purpose of replacing the fan or propulsor without subsequent maintenance does not constitute an engine shop visit.

(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)(1) 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

(1) 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.

(2) For service information identified in this AD, contact General Electric Company, GE Aviation, Room 285, 1 Neumann Way, Cincinnati, OH 45215; phone: 513-552-3272; email: geae.aoc@ge.com. You may view this referenced 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.

Issued in Burlington, Massachusetts, on November 12, 2019.

Robert J. Ganley,

Manager, Engine and Propeller Standards Branch,

Aircraft Certification Service.

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