



[4910-13-P]

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2020-0733; Project Identifier AD-2020-00990-E; Amendment 39-21286; AD 2020-21-13]

RIN 2120-AA64

Airworthiness Directives; General Electric Company Turbofan Engines

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule.

SUMMARY: The FAA is adopting a new airworthiness directive (AD) for certain General Electric Company (GE) GE90-110B1 and GE90-115B model turbofan engines. This AD was prompted by the detection of melt-related freckles in the billet, which may reduce the life limits of certain high-pressure turbine (HPT) rotor stage 2 disks and certain rotating compressor discharge pressure (CDP) HPT seals. This AD requires the replacement of the affected HPT rotor stage 2 disks and rotating CDP HPT seals. The FAA is issuing this AD to address the unsafe condition on these products.

DATES: This AD is effective [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

ADDRESSES: For service information identified in this final rule, contact General Electric Company, 1 Neumann Way, Cincinnati, OH 45215; phone: (513) 552-3272; email: aviation.fleetsupport@ae.ge.com; website: www.ge.com. You may view this service information at the FAA, Airworthiness Products Section, Operational Safety 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-2020-0733.

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-2020-0733; 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, 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: Mehdi Lamnyi, Aerospace Engineer, ECO Branch, FAA, 1200 District Avenue, Burlington, MA 01803; phone: 781-238-7743; fax: 781-238-7199; email: Mehdi.Lamnyi@faa.gov.

SUPPLEMENTARY INFORMATION:

Discussion

The FAA issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 by adding an AD that would apply to certain GE GE90-110B1 and GE90-115B model turbofan engines. The NPRM published in the *Federal Register* on August 13, 2020 (85 FR 49322). The NPRM was prompted by the detection of melt-related freckles in the billet, which may reduce the life limits of certain HPT rotor stage 2 disks and certain rotating CDP HPT seals. The NPRM proposed to require the replacement of certain HPT rotor stage 2 disks and certain rotating CDP HPT seals. 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 final rule. The FAA has considered the comments received. Boeing Commercial Airplanes supported the NPRM. The Air Line Pilots Association and United Airlines reviewed the NPRM and have no objections.

Conclusion

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

Related Service Information

The FAA reviewed GE Service Bulletin GE90-100 S/B 72-0845, Revision 1, dated July 17, 2020. The service information describes procedures for the removal of affected HPT rotor stage 2 disks and rotating CDP HPT seals from service.

Interim Action

The FAA considers this AD an interim action. This issue is still under investigation by the manufacturer and, depending on the results of that investigation, the FAA may consider further rulemaking action.

Costs of Compliance

The FAA estimates that this AD will affect 1 engine installed on an airplane 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
Remove and replace the HPT rotor stage 2 disk	1,500 work-hours x \$85 per hour = \$127,500	\$565,600	\$693,100	\$693,100
Remove and replace the rotating CDP HPT Seal	600 work-hours x \$85 per hour = \$51,000	\$209,900	\$260,900	\$0

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.

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) 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 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):

2020-21-13 General Electric Company: Amendment 39-21286; Docket No. FAA-2020-0733; Project Identifier AD-2020-00990-E.

(a) Effective Date

This AD is effective [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

(b) Affected ADs

None.

(c) Applicability

This AD applies to General Electric Company GE90-110B1 and GE90-115B model turbofan engines with:

- (1) A high-pressure turbine (HPT) rotor stage 2 disk, part number (P/N) 2505M73P03, and serial number (S/N) TMT1BA38 or TMT1BA41, installed; or
- (2) A rotating compressor discharge pressure (CDP) HPT seal, P/N 2479M03P01, and S/N GEE1H7GH or GEE1H7JJ, installed.

(d) Subject

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

(e) Unsafe Condition

This AD was prompted by the detection of melt-related freckles in the billet, which may reduce the life limits of certain HPT rotor stage 2 disks and certain rotating CDP HPT seals. The FAA is issuing this AD to prevent uncontained release of both the HPT rotor stage 2 disk and the rotating CDP HPT seal. The unsafe condition, if not addressed, could result in damage to the engine and damage to the aircraft.

(f) Compliance

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

(g) Required Actions

(1) Before the affected HPT rotor stage 2 disk or the rotating CDP HPT seal listed in Table 1 to paragraph (g) of this AD (“Table 1”) accumulates the cycles since new (CSN) threshold in Table 1, or at the next engine shop visit, whichever occurs first after the effective date of this AD, remove the affected part from service and replace it with a part eligible for installation.

(2) If the affected HPT rotor stage 2 disk or rotating CDP HPT seal has already exceeded the CSN threshold in Table 1, remove the affected part before further flight and replace with a part eligible for installation.

Table 1 to Paragraph (g): Affected Parts and CSN Threshold

Part Name	Part Number	Part S/N	CSN Threshold
Rotating CDP HPT seal	2479M03P01	GEE1H7GH	3,500
Rotating CDP HPT seal	2479M03P01	GEE1H7JJ	3,500
HPT rotor stage 2 disk	2505M73P03	TMT1BA38	2,418
HPT rotor stage 2 disk	2505M73P03	TMT1BA41	1,466

(h) Definitions

(1) For the purpose of this AD, a part eligible for installation is any HPT stage 2 disk or rotating CDP HPT seal with an S/N that is not listed in Table 1.

(2) 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.

(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 Mehdi Lamnyi, Aerospace Engineer, ECO Branch, FAA, 1200 District Avenue, Burlington, MA 01803; phone: 781-238-7743; fax: 781-238-7199; email: Mehdi.Lamnyi@faa.gov.

(k) Material Incorporated by Reference

None.

Issued on October 6, 2020.

Lance T. Gant, Director,
Compliance & Airworthiness Division,
Aircraft Certification Service.

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