



[4910-13-P]

**DEPARTMENT OF TRANSPORTATION**

**Federal Aviation Administration**

**14 CFR Part 39**

**[Docket No. FAA-2020-0733; Project Identifier AD-2020-00990-E]**

**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 adopt a new airworthiness directive (AD) for certain General Electric Company (GE) GE90-110B1 and GE90-115B model turbofan engines. This proposed 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 proposed AD would require replacement of the affected HPT rotor stage 2 disks and rotating CDP HPT seals. 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 30 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, 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.

### **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 NPRM, any comments received, and other information. The street address for Docket Operations is listed above.

**FOR FURTHER INFORMATION CONTACT:** Mehdi Lamnyi, Aerospace Engineer, ECO Branch, FAA, 1200 District Avenue, Burlington, MA 01803; phone: (781) 238-7743; fax: (781) 238-7999; email: Mehdi.Lamnyi@faa.gov.

### **SUPPLEMENTARY INFORMATION:**

#### **Comments Invited**

The FAA invites you to send any written relevant data, views, or arguments about this proposal. Send your comments to an address listed under the ADDRESSES section. Include “Docket No. FAA-2020-0733; Project Identifier AD-2020-00990-E” at the beginning of your comments. The most helpful comments reference a specific portion of the proposal, explain the reason for any recommended change, and include supporting data. The FAA will consider all comments received by the closing date and may amend this NPRM because of those comments.

The FAA has been informed that GE has communicated with affected operators regarding the proposed corrective action for this unsafe condition. As a result, affected operators are already aware of the proposed corrective action and, in some cases, have already performed the actions proposed in this AD. Therefore, the FAA has determined that a 30-day comment period is appropriate given the proposed short cyclic compliance period to correct the unsafe condition on the affected GE90 model turbofan engines.

Except for Confidential Business Information as described in the following paragraph, and other information as described in 14 CFR 11.35, 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 proposal.

#### **Confidential Business Information**

Confidential Business Information (CBI) is commercial or financial information that is both customarily and actually treated as private by its owner. Under the Freedom of Information Act (FOIA) (5 U.S.C. 552), CBI is exempt from public disclosure. If your comments responsive to this NPRM contain commercial or financial information that is customarily treated as private, that you actually treat as private, and that is relevant or responsive to this NPRM, it is important that you clearly designate the submitted comments as CBI. Please mark each page of your submission containing CBI as “PROPIN.” The FAA will treat such marked submissions as confidential under the FOIA, and they will not be placed in the public docket of this NPRM. Submissions containing CBI should be sent to Mehdi Lamnyi, Aerospace Engineer, ECO Branch, FAA, 1200 District Avenue, Burlington, MA 01803. Any commentary that the FAA receives which is not specifically designated as CBI will be placed in the public docket for this rulemaking.

## **Background**

The FAA was notified of the detection of melt-related freckles in the billet during the forging inspection of HPT disks, which may reduce the life limits of certain HPT rotor stage 2 disks and certain rotating CDP HPT seals. The inspection process in place at the time of production did not identify these freckles. The manufacturer determined the need to reduce the life limits of the affected HPT rotor stage 2 disks and rotating CDP HPT seals. This AD requires removal of these affected parts before reaching their new life limits. This condition, if not addressed, could result in uncontained release of both the HPT rotor stage 2 disk and the rotating CDP HPT seal, damage to the engine, and damage to the aircraft.

## **FAA's Determination**

The FAA is proposing this AD because the agency has determined the unsafe condition described previously is likely to exist or develop in other products of the same type design.

## **Related Service Information**

The FAA reviewed GE Service Bulletin (SB) GE90-100 S/B 72-0845, Revision 01, dated July 17, 2020. The SB describes procedures for removal of the HPT rotor stage 2 disk and the rotating CDP HPT seal from service. 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.

## **Proposed AD Requirements**

This proposed AD would require replacement of certain HPT rotor stage 2 disks and certain rotating CDP HPT seals.

## **Interim Action**

The FAA considers this proposed 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, as proposed, would affect 1 engine installed on an airplane of U.S. registry.

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 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

The FAA 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 this 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 adding the following new airworthiness directive

(AD):

**General Electric Company:** Docket No. FAA-2020-0733; Project Identifier AD-2020-00990-E.

#### **(a) Comments Due Date**

The FAA must receive comments by [INSERT DATE 30 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**

<b>Part Name</b>	<b>Part Number</b>	<b>Part S/N</b>	<b>CSN Threshold</b>
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) Definition**

(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 to paragraph (g).

(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)(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 Mehdi Lamnyi, Aerospace Engineer, ECO Branch, FAA, 1200 District Avenue, Burlington, MA 01803; phone: (781) 238-7743; fax: (781) 238-7999; email: Mehdi.Lamnyi@faa.gov.

(2) For service information identified in this AD, 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 referenced 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.

Issued on August 6, 2020.

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

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