



[4910-13-P]

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2020-0555; Project Identifier AD-2020-00615-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) GEnx-1B64/P2, -1B67/P2, -1B70/P2, -1B70C/P2, -1B70/75/P2, -1B74/75/P2, -1B76/P2, -1B76A/P2, and GEnx-2B67/P 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 a certain stages 6-10 compressor rotor spool. This proposed AD would require the removal of certain HPT rotor stage 2 disk and the removal of a certain stages 6-10 compressor rotor spool before reaching their new life limits. 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: aviation.fleetsupport@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-2020-0555; 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. Comments will be available in the AD docket shortly after receipt.

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:

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-2020-0555; Project Identifier AD-2020-00615-E” 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.

Except for Confidential Business Information (CBI) 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 NPRM.

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 AD 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 AD, 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 AD. 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.

Discussion

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 a certain stages 6-10 compressor rotor spool. 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 a certain stages 6-10 compressor rotor spool. This AD requires removal of these affected parts before reaching the new life limits. This condition, if not addressed, could result in uncontained release of both the HPT rotor stage 2 disk and the stages 6-10 compressor rotor spool, damage to the engine, and damage to the aircraft.

Related Service Information

The FAA reviewed GE GENx-1B Service Bulletin (SB) 72-0473 R00, dated April 14, 2020; GE GENx-1B SB 72-0474 R00, dated April 14, 2020; and GE GENx-2B SB 72-0416 R00, dated April 14, 2020. GE GENx-1B SB 72-0473 R00 describes procedures for removing and replacing the HPT rotor stage 2 disks on GE GENx-1B model engines. GE GENx-1B SB 72-0474 R00 describes procedures for removing and replacing the stages 6-10 compressor rotor spool on GE GENx-1B model engines. GE GENx-2B SB 72-0416 R00 describes procedures for removing and replacing the HPT rotor stage 2 disks on GE GENx-2B model engines.

FAA's Determination

The FAA is proposing this AD because the Agency 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 require the removal of certain HPT rotor stage 2 disk and the removal of a certain stages 6-10 compressor rotor spool before reaching their new life limits.

Interim Action

The FAA considers this proposed AD interim action. The investigation into identifying the complete population of affected parts is on-going and the FAA will consider further rulemaking depending on the results of the investigation.

Costs of Compliance

The FAA estimates that this proposed AD affects two engines installed on airplanes of U.S. registry; one engine requiring the HPT rotor stage 2 disk replacement and one engine requiring the stages 6-10 compressor rotor spool replacement.

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	\$458,900	\$586,400	\$586,400
Remove and replace the stages 6-10 compressor rotor spool	600 work-hours x \$85 per hour = \$51,000	\$1,018,600	\$1,069,600	\$1,069,600

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-2020-0555; Project Identifier AD-2020-00615-E.

(a) Comments Due Date

The FAA must receive comments by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE Federal Register].

(b) Affected ADs

None.

(c) Applicability

This AD applies to all General Electric Company (GE) GEnx-1B64/P2, -1B67/P2, -1B70/P2, -1B70C/P2,-1B70/75/P2, -1B74/75/P2, -1B76/P2, -1B76A/P2, and GEnx-2B67/P model turbofan engines with an engine serial number (S/N) listed in Figure 1 to paragraph (c) of this AD.

Figure 1 to Paragraph (c) – Applicable Engine S/N

Engine S/N
956-771
956-899
956-944
958-395
958-408
958-414
958-423
959-612
959-616
959-757

(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 high-pressure turbine (HPT) rotor stage 2

disks and a certain stages 6-10 compressor rotor spool. The FAA is issuing this AD to prevent failure of the HPT rotor stage 2 disk and stages 6-10 compressor rotor spool. The unsafe condition, if not addressed, could result in uncontained release of both the HPT rotor stage 2 disk and the stages 6-10 compressor rotor spool, 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

After the effective date of this AD, before the parts accumulate the cycles since new (CSN) threshold listed in Table 1 to paragraph (g) of this AD, remove the affected HPT rotor stage 2 disk and the stages 6-10 compressor rotor spool from service and replace with parts eligible for installation.

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

Part Name	Part P/N	Part S/N	CSN Threshold
HPT rotor stage 2 disk	2383M86P02	TMT18D6T	1,000
HPT rotor stage 2 disk	2383M86P02	TMT18D6U	1,000
HPT rotor stage 2 disk	2383M86P02	TMT18JC4	1,000
HPT rotor stage 2 disk	2383M86P02	TMT18NGC	1,000
HPT rotor stage 2 disk	2383M86P02	TMT1985C	1,000
HPT rotor stage 2 disk	2383M86P02	TMT3UA34	2,800
HPT rotor stage 2 disk	2383M86P02	TMT3UA55	2,800
HPT rotor stage 2 disk	2383M86P02	TMT4CT46	2,000
HPT rotor stage 2 disk	2383M86P02	TMT4CT47	2,000
Stages 6-10 compressor rotor spool	2628M56G01	GWN10ECM	6,500

(h) Installation Prohibition

After the effective date of this AD, do not install the affected HPT rotor stage 2 disks or the stages 6-10 compressor rotor spool identified in Table 1 to paragraph (g) of this AD on an engine.

(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: 781-238-7199; email: Mehdi.Lamnyi@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: aviation.fleetsupport@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 June 1, 2020.

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

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