[4910-13-P]

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2021-0831; Project Identifier AD-2021-00712-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-1B and GEnx-2B model turbofan engines. This proposed AD was prompted by the manufacturer's report of two findings of sheared compressor discharge pressure (CDP) bolts during engine shop visits. This proposed AD would require initial and repetitive inspections of the CDP bolted joint and, depending on the findings, a piece part inspection of the stages 6-10 compressor rotor spool, CDP seal, and high-pressure turbine (HPT) rotor stage 1 disk. As a terminating action, this proposed AD would require operators to reassemble the CDP bolted joint using a specific torque wrench. 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, 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 at https://www.regulations.gov by searching for and locating Docket No. FAA-2021-0831; 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: Alexei Marqueen, Aviation Safety Engineer, ECO Branch, FAA, 1200 District Avenue, Burlington, MA 01803; phone: (781) 238-7178; fax: (781) 238-7199; email: Alexei.T.Marqueen@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 ADDRESSES. Include "Docket No. FAA-2021-0831; Project Identifier AD-2021-00712-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 proposal 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 agency will also post a report summarizing each substantive verbal contact received about this NPRM.

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 Alexei Marqueen, Aviation Safety 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 by the manufacturer of two findings of sheared CDP bolts at engine shop visits during disassembly of the CDP bolted joint on GEnx-1B70/75/P2 and GEnx-2B67/P model turbofan engines. Subsequent investigation by the manufacturer determined that the fracture and liberation of the CDP bolts was caused by the inadvertent over-torque condition of the bolts during assembly and reassembly with a 11C4525P01 torque fixture or during assembly with a 11C4629P01 torque wrench. In one finding, the fractured CDP bolt caused damage to the stages 6-10 compressor rotor spool, CDP seal, and HPT rotor stage 1 disk. This condition, if not addressed, could result in damage to the engine and damage to the airplane.

FAA's Determination

The FAA is issuing this NPRM after determining that the unsafe condition described previously is likely to exist or develop on other products of the same type design.

Related Service Information under 1 CFR Part 51

The FAA reviewed GE GEnx-1B Service Bulletin (SB) 72-0495 R00, dated May 11, 2021, (GEnx-1B SB 72-0495) and GE GEnx-2B SB 72-0433 R00, dated May 11,

2021 (GEnx-2B S/B 72-0433). GEnx-1B SB 72-0495 describes procedures for the inspection of the CDP bolted joint components on GEnx-1B model turbofan engines. GEnx-2B SB 72-0433 describes procedures for the inspection of the CDP bolted joint components on GEnx-2B model turbofan engines. 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 ADDRESSES.

Proposed AD Requirements in this NPRM

This proposed AD would require initial and repetitive inspections of the CDP bolted joint and, depending on the findings, a piece part inspection of the stages 6-10 compressor rotor spool, CDP seal, and HPT rotor stage 1 disk. As a terminating action, this proposed AD would require operators to reassemble the CDP bolted joint using a 11C4888P01 torque wrench.

Costs of Compliance

The FAA estimates that this AD, if adopted as proposed, would affect 320 engines installed on airplanes 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
Inspection of CDP bolted joint	1 work-hour x $85 per hour = $85	$0	$85	$27,200

The FAA estimates the following costs to do any necessary additional inspections that would be required based on the results of the proposed inspection. The agency has no way of determining the number of aircraft that might need these inspections.

On-condition costs

Action	Labor Cost	Parts Cost	Cost per product
Piece part inspection of stages 6-10 compressor rotor spool	56 work-hours x $85 per hour = $4,760	$0	$4,760
Piece part inspection of CDP seal	22 work-hours x $85 per hour = $1,870	$0	$1,870

Piece part inspection of HPT rotor stage 1 disk	59 work-hours x $85 per hour = $5,015	$0	$5,015

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) Would not affect intrastate aviation in Alaska, and

(3) Would 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: **General Electric Company**: Docket No. FAA-2021-0831; Project Identifier AD-2021-00712-E.

(a) Comments Due Date

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

(b) Affected ADs

None.

(c) Applicability

This AD applies to General Electric Company (GE) GEnx-1B64, GEnx-1B64/P1, GEnx-1B64/P2, GEnx-1B67, GEnx-1B67/P1, GEnx-1B67/P2, GEnx-1B70, GEnx-1B70/75/P1, GEnx-1B70/75/P2, GEnx-1B70/P1, GEnx-1B70/P2, GEnx-1B70C/P1, GEnx-1B70C/P2, GEnx-1B74/75/P1, GEnx-1B74/75/P2, GEnx-1B76/P2, GEnx-1B76A/P2, GEnx-2B67, GEnx-2B67B, and GEnx-2B67/P model turbofan engines with a compressor discharge pressure (CDP) bolted joint assembled or reassembled with the 11C4525P01 torque fixture or assembled with the 11C4629P01 torque wrench.

(d) Subject

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

(e) Unsafe Condition

This AD was prompted by a report from the manufacturer of two findings of sheared CDP bolts during engine shop visits. The FAA is issuing this AD to prevent

fracture of the CDP bolt. The unsafe condition, if not addressed, could result in damage to the engine and damage to the airplane.

(f) Compliance

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

(g) Required Actions

(1) At the next engine shop visit after the effective date of this AD, perform an inspection of the CDP bolted joint for fractured or missing material using the Accomplishment Instructions, paragraph 3.A.(2) of GE GEnx-1B Service Bulletin (SB) 72-0495 R00, dated May 11, 2021 (GEnx-1B SB 72-0495) (for GEnx-1B models) or Accomplishment Instructions, paragraph 3.A.(2) of GE GEnx-2B SB 72-0433 R00, dated May 11, 2021, (GEnx-2B SB 72-0433) (for GEnx-2B models).

(2) Repeat the inspection required by paragraph (g)(1) of this AD at every engine shop visit.

(3) If a fractured or missing bolt or nut is found during any inspection required by paragraph (g)(1) or (2) of this AD, before further flight, perform piece part inspections in accordance with the Instructions for Continued Airworthiness of the stages 6-10 compressor rotor spool, CDP seal, and high-pressure turbine rotor stage 1 disk.

(h) Terminating Action

As terminating action to the repetitive inspections required by paragraph (g)(2) of this AD, reassemble the CDP bolted joint using the 11C4888P01 torque wrench, in accordance with the Accomplishment Instructions, paragraph 3.B.(1) of GEnx-1B SB 72-0495 (for GEnx-1B models) or the Accomplishment Instructions, paragraph 3.B.(1) of GEnx-2B SB 72-0433 (for GEnx-2B models).

(i) Definition

For the purpose of this AD, an “engine shop visit” is the induction of an engine into the shop for maintenance involving a module exposure in which the mid fan shaft removal exposes the CDP bolted joint.

(j) 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 ECO Branch, send it to the attention of the person identified in paragraph (k)(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.

(k) Related Information

(1) For more information about this AD, contact Alexei Marqueen, Aviation Safety Engineer, ECO Branch, FAA, 1200 District Avenue, Burlington, MA 01803; phone: (781) 238-7178; fax: (781) 238-7199; email: Alexei.T.Marqueen@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 September 21, 2021.

Gaetano A. Sciortino, Deputy Director for Strategic Initiatives,
Compliance & Airworthiness Division,
Aircraft Certification Service.
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