



適航指令發布單
Airworthiness Directive Issuance Form

民航局 AD 編號 AD number	CAA-2020-09-011	發布日期 Date issued	2020/10/7												
適用之航空產品 Applied to (models, serial numbers or part numbers, as applicable)	General Electric Company 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.														
主旨摘要	This AD requires 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.														
民航局 CAA <input type="checkbox"/> 本國產品 Native products <input type="checkbox"/> 其他個案 Other	<div style="text-align: center;">設計國民航主管機構 Original Authorities</div> <table style="width: 100%;"><tr><td><input checked="" type="checkbox"/> FAA</td><td><input type="checkbox"/> Germany LBA</td></tr><tr><td><input type="checkbox"/> EASA</td><td><input type="checkbox"/> CAA-NL</td></tr><tr><td><input type="checkbox"/> Brazil</td><td><input type="checkbox"/> UK CAA</td></tr><tr><td><input type="checkbox"/> Transport Canada Civil Aviation</td><td><input type="checkbox"/> Japan CAB</td></tr><tr><td><input type="checkbox"/> DGAC</td><td><input type="checkbox"/> CAA of Israel</td></tr><tr><td colspan="2"><input type="checkbox"/> Other _____</td></tr></table>			<input checked="" type="checkbox"/> FAA	<input type="checkbox"/> Germany LBA	<input type="checkbox"/> EASA	<input type="checkbox"/> CAA-NL	<input type="checkbox"/> Brazil	<input type="checkbox"/> UK CAA	<input type="checkbox"/> Transport Canada Civil Aviation	<input type="checkbox"/> Japan CAB	<input type="checkbox"/> DGAC	<input type="checkbox"/> CAA of Israel	<input type="checkbox"/> Other _____	
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<input type="checkbox"/> Other _____															
	設計國 AD 編號 Original AD number	2020-20-11													
	1. 直接採用原 AD 之內容?(Is the original AD directly adopted?) <input checked="" type="checkbox"/> 是(Yes) <input type="checkbox"/> 否(No) _ a. 生效日期另訂為(Re-specify the effective date as) : _____ b. 執行時限另訂為(Re-specify the compliance time or period as) : _____ <input type="checkbox"/> 2. 使用人是否需要將 AD 執行結果向民航局提出報告?(Do <input type="checkbox"/> Users need to report the status of compliance to the CAA?) <input type="checkbox"/> 是(Yes) <input checked="" type="checkbox"/> 否(No)														
備註 Note	None														

註： 1. AD 內容後附。
2. 航空器產品使用人得向民航局提出豁免、替代符合方法、執行時限之展延之申請。
3. 如有任何問題，請聯絡交通部民用航空局初始適航科。Tel：(02)2349-6331~3, Fax：(02)2545-8464, e-mail：adcaa@mail.caa.gov.tw

Note： 1. The AD text is enclosed.
2. Exemption, an alternative method of compliance or adjustment of the compliance time may be proposed to the CAA for approval.
3. For further information, please contact Civil Aeronautics Administration on Tel：(02)2349-6331~3, Fax：(02)2545-8464, e-mail：adcaa@mail.caa.gov.tw

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2020-0555; Project Identifier AD-2020-00615-E; Amendment 39-21267; AD 2020-20-11]

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) 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 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 AD requires 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 issuing this AD to address the unsafe condition on these products.

DATES: This AD is effective November 3, 2020.

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-2020-0555.

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 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 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. The NPRM published in the Federal Register on June 8, 2020 (85 FR 35021). 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 a certain stages 6-10 compressor rotor spool. The NPRM proposed to 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 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 following presents the comments received on the NPRM and the FAA's response to each comment.

Request to List Part and Serial Numbers

GE requested that both the affected part and serial numbers be listed in the Applicability section of this AD instead of the affected engine serial numbers.

The FAA agrees. The FAA recognizes that affected HPT rotor stage 2 disks could be moved from one engine to another engine. The intent of this AD is to mandate the removal of the affected parts from service, regardless of the engine on which they are installed. The FAA is revising the Applicability section of this AD as suggested by the commenter. This change does not expand the scope of this AD because the number of affected engines installed on airplanes of U.S. registry remains the same in this final rule compared to what was published in the NPRM.

Support for the AD

The Air Line Pilots Association, International; the Boeing Company; and United Airlines Engineering expressed support for the AD as written.

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 with the changes described previously and minor editorial changes. The FAA has determined that these minor changes:

- Are consistent with the intent that was proposed in the NPRM for addressing the unsafe condition; and
- Do not add any additional burden upon the public than was already proposed in the NPRM.

The FAA also determined that these changes will not increase the economic burden on any operator or increase the scope of this final rule.

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.

Costs of Compliance

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

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
Removal and replacement of the HPT rotor stage 2 disk	1,500 work-hours × \$85 per hour = \$127,500	\$458,900	\$586,400	\$586,400
Removal and replacement of the stages 6-10 compressor rotor spool	600 work-hours × \$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

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):



2020-20-11 General Electric Company: Amendment 39-21267; Docket No. FAA-2020-0555; Project Identifier AD-2020-00615-E.

(a) Effective Date

This AD is effective November 3, 2020.

(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:

- (1) a high-pressure turbine (HPT) rotor stage 2 disk, part number (P/N) 2383M86P02, having one of the following serial numbers (S/Ns): TMT18D6T, TMT18D6U, TMT18JC4, TMT18NGC, TMT1985C, TMT3UA34, TMT3UA55, TMT4CT46, or TMT4CT47, installed; or
- (2) a stages 6-10 compressor rotor spool, P/N 2628M56G01, S/N GWN10ECM, 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 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) 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 September 24, 2020.

Lance T. Gant,

Director, Compliance & Airworthiness Division, Aircraft Certification Service.

[FR Doc. 2020-21450 Filed 9-28-20; 8:45 am]