



適航指令發布單

Airworthiness Directive Issuance Form

民航局 AD 編號 AD number	CAA-2019-02-013	發布日期 Date issued	2019/2/22
適用之航空產品 Applied to (models, serial numbers or part numbers, as applicable)	This AD applies to General Electric Company (GE) GEnx-1B54, -1B58, -1B64, -1B67, -1B70, -1B54/P1, -1B58/P1, -1B64/P1, -1B67/P1, -1B70/P1, -1B54/P2, -1B58/P2, -1B64/P2, -1B67/P2, -1B70/P2, -1B70C/P1, -1B70/72/P1, -1B70/75/P1, -1B74/75/P1, -1B75/P1, -1B70C/P2, -1B70/72/P2, -1B70/75/P2, -1B74/75/P2, -1B75/P2, -1B76/P2, -1B76A/P2, -1B78/P2, -2B67, -2B67B, and -2B67/P turbofan engines with a high-pressure turbine (HPT) stator case (HPT case), part number (P/N) 2302M90G04 installed, and with any serial number (S/N) listed in Table 1, 2, or 3, in the Planning Information section of GE Service Bulletin (SB) GEnx-2B S/B 72-0360, Revision 04, dated December 4, 2018, or GE SB GEnx-1B S/B 72-0424, Revision 04, dated December 3, 2018, installed.		
主旨摘要	This AD supersedes (AD) 2018-16-07. the main change is that the compliance time for the removal and replacement of certain HPT cases must be reduced.		
民航局 CAA <input type="checkbox"/> 本國產品 Native products <input type="checkbox"/> 其他個案 Other	設計國民航主管機構 Original Authorities <input checked="" type="checkbox"/> FAA <input type="checkbox"/> EASA <input type="checkbox"/> Brazil <input type="checkbox"/> Transport Canada Civil Aviation <input type="checkbox"/> DGAC <input type="checkbox"/> Germany LBA <input type="checkbox"/> CAA-NL <input type="checkbox"/> UK CAA <input type="checkbox"/> Japan CAB <input type="checkbox"/> CAA of Israel <input type="checkbox"/> Other _____		
	設計國 AD 編號 Original AD number	2019-02-01	
	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) : _____ 2. 使用人是否需要將 AD 執行結果向民航局提出報告?(Do 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	ATA 72.This AD replaces AD 2018-16-07, Amendment 39-19347 (83 FR 36724, July 31, 2018) ("AD 2018-16-07").		
註： Note：	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 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		

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[Rules and Regulations]

[Pages 2709-2713]

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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2019-0042; Product Identifier 2018-NE-25-AD; Amendment 39-19548; AD 2019-02-01]

RIN 2120-AA64

Airworthiness Directives; General Electric Company Turbofan Engines

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule; request for comments.

SUMMARY: We are superseding Airworthiness Directive (AD) 2018-16-07, which applied to certain General Electric Company (GE) GEnx turbofan engines. AD 2018-16-07 required removal and replacement of affected high-pressure turbine (HPT) stator cases (HPT cases). This AD retains those requirements, but reduces certain compliance times. This AD was prompted by the discovery of a quality escape at a manufacturing facility and a determination that the compliance time for the removal and replacement of certain HPT cases must be reduced. We are issuing this AD to address the unsafe condition on these products.

DATES: This AD is effective February 25, 2019.

The Director of the Federal Register approved the incorporation by reference of certain publications listed in this AD as of February 25, 2019.

We must receive any comments on this AD by March 25, 2019.

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 <http://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 final rule, 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, Engine and Propeller Standards Branch, 1200 District Avenue, Burlington, MA. You may view this service information at the FAA, Engine and Propeller Standards Branch, 1200 District Avenue, Burlington, MA. For information on the availability of this material at the FAA, call 781-238-7759. It is also available on the internet at <http://www.regulations.gov> by searching for and locating Docket No. FAA-2019-0042.

Examining the AD Docket

You may examine the AD docket on the internet at <http://www.regulations.gov> by searching for and locating Docket No. FAA-2019-0042; 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, the regulatory evaluation, any comments received, and other information. The street address for Docket Operations (phone: 800-647-5527) is in the ADDRESSES section. Comments will be available in the AD docket shortly after receipt.

FOR FURTHER INFORMATION CONTACT: Herman Mak, Aerospace Engineer, ECO Branch, FAA, 1200 District Avenue, Burlington, MA 01803; phone: 781-238-7147; fax: 781-238-7199; email: herman.mak@faa.gov.

SUPPLEMENTARY INFORMATION: Discussion

We issued AD 2018-16-07, Amendment 39-19347 (83 FR 36724, July 31, 2018) (“AD 2018-16-07”), for certain GE GENx-1B54, -1B58, -1B64, -1B67, -1B70, -1B54/P1, -1B58/P1, -1B64/P1, -1B67/P1, -1B70/P1, -1B54/P2, -1B58/P2, -1B64/P2, -1B67/P2, -1B70/P2, -1B70C/P1, -1B70/72/P1, -1B70/75/P1, -1B74/75/P1, -1B75/P1, -1B70C/P2, -1B70/72/P2, -1B70/75/P2, -1B74/75/P2, -1B75/P2, -1B76/P2, -1B76A/P2, -1B78/P2, -2B67, -2B67B, and -2B67/P turbofan engines. AD 2018-16-07 required removal of affected HPT cases from service and their replacement with a part eligible for installation. AD 2018-16-07 was prompted by the discovery of a quality escape at a manufacturing facility involving unapproved reworks on HPT cases. We issued AD 2018-16-07 to address failure of the HPT case, which could result in engine fire and damage to the airplane.

Actions Since AD 2018-16-07 was Issued

Since we issued AD 2018-16-07, we have received new data from the manufacturer and have determined that certain HPT cases may have a reduced fatigue life than previously determined. Because of this reduced fatigue life, the HPT cases must be removed and replaced at reduced compliance times. Failure to remove and replace the HPT cases within the reduced compliance times could result in failure of the HPT case resulting in the unsafe condition identified above.

Related Service Information Under 1 CFR Part 51

We reviewed GE Service Bulletin (SB) GENx-2B S/B 72-0360, Revision 04, dated December 4, 2018, and GE SB GENx-1B S/B 72-0424, Revision 04, dated December 3, 2018. This service information describes procedures for removing the affected HPT cases from the engine. GE SB GENx-1B S/B 72-0424 is effective for GENx-1B engines with the serial numbers of HPT cases listed therein. GE SB GENx-2B S/B 72-0360 is effective for GENx-2B engines with the serial numbers of HPT cases listed therein. 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.

Other Related Service Information

We reviewed Inspection 001, Subtask 72-52-01-230-001, of GENx-1B Cleaning, Inspection, and Repair Manual GEK112862, Rev 27, dated April 30, 2018, and GENx-2B Cleaning, Inspection, and Repair Manual GEK114120, Rev 20, dated April 30, 2018. These manuals provide guidance for conducting Class A fluorescent penetrant inspections.

FAA's Determination

We are issuing this AD because we 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.

AD Requirements

This AD requires removal of the affected HPT cases from service and their replacement with a part eligible for installation.

FAA's Justification and Determination of the Effective Date

An unsafe condition exists that requires the immediate adoption of this AD without providing an opportunity for public comments prior to adoption. The FAA has found that the risk to the flying public justifies waiving notice and comment prior to adoption of this rule because of a quality escape at a manufacturing facility involving unapproved rework on HPT cases, which could result in failure of the HPT case and subsequent engine fire and damage to the airplane. Additionally, the compliance time for the required action is shorter than the time necessary for the public to comment and for publication of the final rule. Therefore, we find good cause that notice and opportunity for prior public comment are impracticable. In addition, for the reasons stated above, we find that good cause exists for making this amendment effective in less than 30 days.

Comments Invited

This AD is a final rule that involves requirements affecting flight safety and was not preceded by notice and an opportunity for public comment. However, we invite you to send any written data, views, or arguments about this final rule. Send your comments to an address listed under the ADDRESSES section. Include the docket number FAA-2019-0042 and Product Identifier 2018-NE-25-AD at the beginning of your comments. We specifically invite comments on the overall regulatory, economic, environmental, and energy aspects of this final rule. We will consider all comments received by the closing date and may amend this final rule because of those comments.

We will post all comments we receive, without change, to <http://www.regulations.gov>, including any personal information you provide. We will also post a report summarizing each substantive verbal contact we receive about this final rule.

Costs of Compliance

We estimate that this AD affects 7 engines installed on airplanes of U.S. registry. We estimate 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 HPT cases	0 work-hours × \$85 per hour = \$0	\$362,400	\$362,400	\$2,536,800

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.

We are 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.

This AD is issued in accordance with authority delegated by the Executive Director, Aircraft Certification Service, as authorized by FAA Order 8000.51C. In accordance with that order, issuance of ADs is normally a function of the Compliance and Airworthiness Division, but during this transition period, the Executive Director has delegated the authority to issue ADs applicable to engines, propellers, and associated appliances to the Manager, Engine and Propeller Standards Branch, Policy and Innovation Division.

Regulatory Findings

We have determined that 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) Is not a "significant rule" under DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979),
- (3) Will not affect intrastate aviation in Alaska, and
- (4) 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.

Adoption of 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 removing Airworthiness Directive (AD) 2018-16-07, Amendment 39-19347 (83 FR 36724, July 31, 2018), and adding the following new AD:



2019-02-01 General Electric Company: Amendment 39-19548; Docket No. FAA-2019-0042; Product Identifier 2018-NE-25-AD.

(a) Effective Date

This AD is effective February 25, 2019.

(b) Affected ADs

This AD replaces AD 2018-16-07, Amendment 39-19347 (83 FR 36724, July 31, 2018) (“AD 2018-16-07”).

(c) Applicability

This AD applies to General Electric Company (GE) GENx-1B54, -1B58, -1B64, -1B67, -1B70, -1B54/P1, -1B58/P1, -1B64/P1, -1B67/P1, -1B70/P1, -1B54/P2, -1B58/P2, -1B64/P2, -1B67/P2, -1B70/P2, -1B70C/P1, -1B70/72/P1, -1B70/75/P1, -1B74/75/P1, -1B75/P1, -1B70C/P2, -1B70/72/P2, -1B70/75/P2, -1B74/75/P2, -1B75/P2, -1B76/P2, -1B76A/P2, -1B78/P2, -2B67, -2B67B, and -2B67/P turbofan engines with a high-pressure turbine (HPT) stator case (HPT case), part number (P/N) 2302M90G04 installed, and with any serial number (S/N) listed in Table 1, 2, or 3, in the Planning Information section of GE Service Bulletin (SB) GENx-2B S/B 72-0360, Revision 04, dated December 4, 2018, or GE SB GENx-1B S/B 72-0424, Revision 04, dated December 3, 2018, installed.

(d) Subject

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

(e) Unsafe Condition

This AD was prompted by the discovery of a quality escape at a manufacturing facility involving unapproved rework on HPT cases. We are issuing this AD to prevent failure of the HPT case and subsequent engine fire and damage to the airplane.

(f) Compliance

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

(g) Required Actions

(1) For HPT cases listed in Planning Information, Table 1 or 2, of GE SB GENx-2B S/B 72-0360, Revision 04, dated December 4, 2018, or GE SB GENx-1B S/B 72-0424, Revision 04, dated December 3, 2018, determine the lesser of the following: Cycles since new (CSN) or cycles since Class A fluorescent penetrant inspection (CSFPI) of the entire HPT case.

(2) Using the determination made in paragraph (g)(1) of this AD, remove from service the HPT case before exceeding the applicable cycles in service accrued after August 15, 2018, the effective date of AD 2018-16-07, as specified in Table 1 to paragraph (g)(2) of this AD. Replace the removed HPT case with a part eligible for installation.

Table 1 to paragraph (g)(2) of this AD – Compliance times

CSN or CSFPI of HPT case	Remove from service (cycles in service after August 15, 2018, the effective date of AD 2018-16-07)
Fewer than 1000	150 cycles
1000 to 2000	125 cycles
2001 to 3000	100 cycles
3001 to 4000	75 cycles
4001 to 5000	50 cycles
Greater than 5000	25 cycles

(3) For HPT cases listed in Planning Information, Table 3, of GE SB GENx-2B S/B 72-0360, Revision 04, dated December 4, 2018, determine the lesser of the following: CSN or CSFPI of the entire HPT case.

(4) Using the determination made in paragraph (g)(3) of this AD, remove from service the HPT case before exceeding the cycles in service specified in Table 2 to paragraph (g)(4) of this AD. Replace the removed HPT case with a part eligible for installation.

Table 2 to paragraph (g)(4) of this AD – Compliance times

CSN or CSFPI of HPT case	Remove from service (cycles in service after the effective date of this AD)
Fewer than 1000	1400 cycles
1000 to 1500	950 cycles
1501 to 2000	700 cycles
2001 to 3000	375 cycles
3001 to 4000	225 cycles
Greater than 4000	150 cycles

(5) For HPT cases listed in Planning Information, Table 3, of GE SB GENx-1B S/B 72-0424, Revision 04, dated December 3, 2018, determine the lesser of the following: CSN or CSFPI of the entire HPT case.

(6) Using the determination made in paragraph (g)(5) of this AD, remove from service the HPT case before exceeding the cycles in service specified in Table 3 to paragraph (g)(6) of this AD. Replace the removed HPT case with a part eligible for installation.

Table 3 to paragraph (g)(6) of this AD – Compliance times

CSN or CSFPI of HPT case	Remove from service (cycles in service after the effective date of this AD)
Fewer than 1000	700 cycles
1000 to 1500	600 cycles
1501 to 2000	400 cycles
2001 to 3000	200 cycles
3001 to 4000	120 cycles
Greater than 4000	75 cycles

(h) Installation Prohibition

After the effective date of this AD, do not install any affected HPT case onto any engine if the HPT case has been disassembled to piece-part level. Affected HPT cases are identified in paragraphs (g)(1), (g)(3), and (g)(5) of this AD. Piece-part level is defined as when the part is completely disassembled.

(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 Herman Mak, Aerospace Engineer, ECO Branch, FAA, 1200 District Avenue, Burlington, MA 01803; phone: 781-238-7147; fax: 781-238-7199; email: herman.mak@faa.gov.

(k) Material Incorporated by Reference

(1) The Director of the Federal Register approved the incorporation by reference (IBR) of the service information listed in this paragraph under 5 U.S.C. 552(a) and 1 CFR part 51.

(2) You must use this service information as applicable to do the actions required by this AD, unless the AD specifies otherwise.

(i) General Electric Company (GE) Service Bulletin (SB) GEnx-2B S/B 72-0360, Revision 04, dated December 4, 2018.

(ii) GE SB GEnx-1B S/B 72-0424, Revision 04, dated December 3, 2018.

(3) For GE 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.

(4) You may view this service information at the FAA, Engine and Propeller Standards Branch, 1200 District Avenue, Burlington, MA. For information on the availability of this material at the FAA, call 781-238-7759.

(5) You may view this service information that is incorporated by reference at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202-741-6030, or go to: <http://www.archives.gov/federal-register/cfr/ibr-locations.html>.

Issued in Burlington, Massachusetts, on February 1, 2019.
Robert J. Ganley,
Manager, Engine and Propeller Standards Branch,
Aircraft Certification Service.