



## 適航指令發布單

### Airworthiness Directive Issuance Form

民航局 AD 編號 AD number	CAA-2020-10-001	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, -1B64/P1, -1B64/P2, -1B67, -1B67/P1, -1B67P2, -1B70, -1B70/75/P1, -1B70/75/P2, -1B70/P1, -1B70/P2, -1B70C/P1, -1B70C/P2, -1B74/75/P1, -1B74/75/P2, -1B76/P2, and -1B76A/P2 model turbofan engines.		
主旨摘要	This AD requires installation of electronic engine control software, version B205 or later.		
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 <div style="display: flex; justify-content: space-between;"> <div style="width: 48%;"> <input checked="" type="checkbox"/> FAA  <input type="checkbox"/> EASA  <input type="checkbox"/> Brazil  <input type="checkbox"/> Transport Canada Civil Aviation  <input type="checkbox"/> DGAC               </div> <div style="width: 48%;"> <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 _____               </div> </div>		
	設計國 AD 編號 Original AD number	2020-20-12	
	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](mailto: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](mailto:adcaa@mail.caa.gov.tw)

[Federal Register Volume 85, Number 191 (Thursday, October 1, 2020)]  
[Rules and Regulations]  
[Pages 61811-61813]  
From the Federal Register Online via the Government Publishing Office [www.gpo.gov]  
[FR Doc No: 2020-21484]

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## **DEPARTMENT OF TRANSPORTATION**

### **Federal Aviation Administration**

#### **14 CFR Part 39**

**[Docket No. FAA-2020-0443; Project Identifier AD-2020-00178-E; Amendment 39-21268; AD 2020-20-12]**

**RIN 2120-AA64**

### **Airworthiness Directives; General Electric Company Turbofan Engines**

**AGENCY:** Federal Aviation Administration (FAA), DOT.

**ACTION:** Final rule.

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**SUMMARY:** The FAA is adopting a new airworthiness directive (AD) for all General Electric Company (GE) GEnx-1B64, -1B64/P1, -1B64/P2, -1B67, -1B67/P1, -1B67P2, -1B70, -1B70/75/P1, -1B70/75/P2, -1B70/P1, -1B70/P2, -1B70C/P1, -1B70C/P2, -1B74/75/P1, -1B74/75/P2, -1B76/P2, and -1B76A/P2 model turbofan engines. This AD was prompted by reports of combustor case burn-through. This AD requires installation of electronic engine control (EEC) software, version B205 or later. The FAA is issuing this AD to address the unsafe condition on these products.

**DATES:** This AD is effective November 5, 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-2020-0443.

### **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-2020-0443; 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:**

### **Background**

The FAA issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 by adding an AD that would apply to all GE GENx-1B64, -1B64/P1, -1B64/P2, -1B67, -1B67/P1, -1B67P2, -1B70, -1B70/75/P1, -1B70/75/P2, -1B70/P1, -1B70/P2, -1B70C/P1, -1B70C/P2, -1B74/75/P1, -1B74/75/P2, -1B76/P2, and -1B76A/P2 model turbofan engines. The NPRM published in the Federal Register on May 6, 2020 (85 FR 26891). The NPRM was prompted by reports of combustor case burn-through. The NPRM proposed to require installation of EEC software, version B205 or later. 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 Supersede Existing AD**

American Airlines (AAL) suggested that the FAA change this AD to supersede docket number FAA-2019-0683, project identifier 2015-NE-02-AD (84 FR 63820, November 19, 2019) ("NPRM 2015-NE-02-AD"). NPRM 2015-NE-02-AD proposed removing EEC software version B195 and earlier from GENx-1B engines, along with an equivalent EEC software for GENx-2B engines to improve safeguards against ice crystal icing. EEC software version B205 incorporates all required changes that satisfy the intent of NPRM 2015-NE-02.

The FAA disagrees. The unsafe condition addressed by this AD was prompted by reports of combustor case burn-through. In contrast, the final rule to NPRM 2015-NE-02-AD, AD 2020-13-04, Amendment 39-21149 (85 FR 37000, June 19, 2020) ("AD 2020-13-04") was prompted by power loss in ice crystal icing conditions. Although the ice crystal icing required actions of AD 2020-13-04 are achieved through the update to EEC software version B205, the unsafe conditions that prompted each AD are different, and the corrective actions are independent. Further, AD 2020-13-04 affects more GENx model turbofan engines than this AD.

### **Request To Add Terminating Action**

AAL requested the FAA add that compliance with this AD is a terminating action to paragraphs (g) and (i) of AD 2013-24-01, Amendment 39-17675 (78 FR 70851, November 27, 2013) ("AD 2013-24-01"), similar to the terminating action in AD 2017-09-06, Amendment 39-18868 (82 FR 21111, May 5, 2017) ("2017-09-06"). AAL noted that NPRM 2015-NE-02-AD (AD 2020-13-04) indicated that it would supersede AD 2017-09-06, but did not provide a terminating action to paragraphs (g) and (i) of AD 2013-24-01, as was done in AD 2017-09-06. AAL commented that EEC software version B205 incorporated the software changes to address the unsafe ice crystal icing condition so compliance with paragraphs (g) and (i) of AD 2013-24-01 should no longer be required.

The FAA disagrees. As indicated in a comment response to NPRM 2015-NE-02-AD, the FAA disagreed with adding a terminating action in AD 2020-13-04 because the FAA's approval of alternative methods of compliance to AD 2013-24-01 made a terminating action unnecessary in AD-2020-13-04. In this AD, the FAA finds that adding a terminating action is not justified as this AD

does not address the unsafe ice crystal icing condition of AD 2020-13-04, AD 2017-09-06, and AD 2013-24-01. Therefore, no change to this AD is needed.

### **Request To Add Boeing Service Information**

Qantas Airways Limited (Qantas) commented that GE GENx-1B Service Bulletin (SB) 73-0085 R00, dated December 23, 2019, describes procedures for installing the EEC software version B205. Qantas further noted that procedures for on-wing installation of EEC software version B205 is described in Boeing B787-81205 SB-730057-00, Issue 001, dated December 23, 2019; Boeing B787-81205 SB-730057-00, Issue 002, dated February 28, 2020; or later FAA approved revisions. The FAA interprets Qantas' comment as a request to add Boeing B787-81205 SB-730057-00, Issue 001, dated December 23, 2019, and Issue 002, dated February 28, 2020; and later FAA approved revisions, to the Related Service Information section of this AD.

The FAA disagrees with adding the Boeing service information to this AD as Related Service Information as that service information is not necessary to satisfy the requirements of this AD. This AD requires the installation of the EEC software version B205 or later without imposing an installation method. The EEC software can be installed either at the engine-level or on-wing at the aircraft-level using FAA-approved procedures.

### **Request To Clarify Applicability**

United Airlines (UAL) requested the FAA to clarify if EEC software version B205 or later must be installed on spare EECs or only on engines installed on aircraft, prior to operation.

An operator of a product that does not meet the requirements of an applicable airworthiness directive is in violation of 14 CFR 39.7. The intent of this AD is to prevent operation of any affected engine installed on an aircraft with EEC software, version B200 or earlier. The requirements of this AD do not apply to spare engines and spare EECs, as they cannot be operated unless installed on an aircraft. No change to this AD is needed.

### **Support for the AD**

The Boeing Company and the Air Line Pilots Association, International, expressed support for the AD as written. AAL supports the intent of the AD.

### **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 as proposed except for 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.

### **Related Service Information**

The FAA reviewed GE GENx-1B SB 73-0085 R00, dated December 23, 2019. The SB describes procedures for installing the EEC software version B205.

### **Costs of Compliance**

The FAA estimates that this AD affects 176 engines installed on airplanes of U.S. registry. 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
Install EEC software version B205 or later	1 work-hour × \$85 per hour = \$85	\$0	\$85	\$14,960

### 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):



# **AIRWORTHINESS DIRECTIVE**

[www.faa.gov/aircraft/safety/alerts/](http://www.faa.gov/aircraft/safety/alerts/)  
[www.gpoaccess.gov/fr/advanced.html](http://www.gpoaccess.gov/fr/advanced.html)

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**2020-20-12 General Electric Company:** Amendment 39-21268; Docket No. FAA-2020-0443;  
Project Identifier AD-2020-00178-E.

**(a) Effective Date**

This AD is effective November 5, 2020.

**(b) Affected ADs**

None.

**(c) Applicability**

This AD applies to General Electric Company GENx-1B64, -1B64/P1, -1B64/P2, -1B67, -1B67/P1, -1B67P2, -1B70, -1B70/75/P1, -1B70/75/P2, -1B70/P1, -1B70/P2, -1B70C/P1, -1B70C/P2, -1B74/75/P1, -1B74/75/P2, -1B76/P2, and -1B76A/P2 model turbofan engines.

**(d) Subject**

Joint Aircraft System Component (JASC) Code 7240, Turbine Engine Combustion Section.

**(e) Unsafe Condition**

This AD was prompted by two reports of combustor case burn-through. The FAA is issuing this AD to prevent failure of the fuel nozzle. The unsafe condition, if not addressed, could result in damage to the combustor case, engine fire, and damage to the airplane.

**(f) Compliance**

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

**(g) Required Actions**

Within 120 days after the effective date of this AD, install electronic engine control (EEC) software that is eligible for installation.

**(h) Definition**

For the purpose of this AD, EEC software that is eligible for installation is EEC software that is version B205 or later.

**(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.

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

[FR Doc. 2020-21484 Filed 9-30-20; 8:45 am]