

[Federal Register Volume 84, Number 249 (Monday, December 30, 2019)]

[Rules and Regulations]

[Pages 71770-71772]

From the Federal Register Online via the Government Publishing Office [www.gpo.gov]

[FR Doc No: 2019-27889]

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## **DEPARTMENT OF TRANSPORTATION**

### **Federal Aviation Administration**

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

**[Docket No. FAA-2019-0912; Product Identifier 2019-NE-33-AD; Amendment 39-21011; AD 2019-25-13]**

**RIN 2120-AA64**

#### **Airworthiness Directives; Engine Alliance Turbofan Engines**

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

**ACTION:** Final rule; request for comments.

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**SUMMARY:** The FAA is adopting a new airworthiness directive (AD) for all Engine Alliance (EA) GP7270 and GP7277 model turbofan engines with a certain low-pressure compressor (LPC) 1st-stage fan blade installed. This AD requires an ultrasonic inspection of the affected LPC 1st-stage fan blades and replacement of any affected fan blades that fail the inspection. This AD was prompted by a report of an in-flight shutdown (IFSD) of an engine due to the fracture of multiple fan blades. The FAA is issuing this AD to address the unsafe condition on these products.

**DATES:** This AD is effective January 14, 2020.

The Director of the Federal Register approved the incorporation by reference of a certain publication listed in this AD as of January 14, 2020.

The FAA must receive comments on this AD by February 13, 2020.

**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: U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE, Washington, DC 20590, between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

For service information identified in this final rule, contact Engine Alliance, 411 Silver Lane, East Hartford, CT, 06118; phone: 800-565-0140; email: [help24@pw.utc.com](mailto:help24@pw.utc.com); website: [www.engineallianceportal.com](http://www.engineallianceportal.com). You may view this service information at the FAA, Engine and

Propeller Standards 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-2019-0912.

### **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-2019-0912; 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 the Docket Operations is listed above. Comments will be available in the AD docket shortly after receipt.

**FOR FURTHER INFORMATION CONTACT:** Matthew Smith, Aerospace Engineer, ECO Branch, FAA, 1200 District Avenue, Burlington, MA 01803; phone: 781-238-7735; fax: 781-238-7199; email: [Matthew.C.Smith@faa.gov](mailto:Matthew.C.Smith@faa.gov).

### **SUPPLEMENTARY INFORMATION: Discussion**

The FAA received a report of an IFSD that occurred during a revenue flight on March 10, 2019. The IFSD resulted from the fracture of two LPC 1st-stage fan blades. After an analysis of these fractures, the manufacturer determined the fan blades experienced cracks that originated on the internal surface of the convex airfoil and propagated to the point of failure. The cracks originated in a microtexture area that can result in a low-cycle fatigue debit that may allow a crack to initiate and propagate to failure. This condition, if not addressed, could result in uncontained fan blade release, damage to the engine, and damage to the airplane. The FAA is issuing this AD to address the unsafe condition on these products.

### **Related Service Information Under 1 CFR Part 51**

The FAA reviewed EA Service Bulletin (SB) EAGP7-A72-426, dated September 30, 2019. The SB describes procedures for performing an ultrasonic inspection of the LPC 1st-stage fan blades. 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.

### **FAA's Determination**

The FAA is issuing this AD because the FAA 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 an ultrasonic inspection of the affected LPC 1st-stage fan blades and replacement of any affected fan blades that fail the inspection.

### **Interim Action**

The FAA considers this AD interim action. The root cause of the LPC 1st-stage fan blade fracture is still undetermined and the FAA will consider further rulemaking depending on the results of the investigation.

## FAA's Justification and Determination of the Effective Date

Since there are currently no domestic operators of this product, notice and opportunity for public comment before issuing this AD are unnecessary. In addition, for the reason stated above, the FAA finds 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, the FAA invites 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-2019-0912 and Product Identifier 2019-NE-33-AD at the beginning of your comments. The FAA specifically invites comments on the overall regulatory, economic, environmental, and energy aspects of this final rule. The FAA will consider all comments received by the closing date and may amend this final rule because of those comments.

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 final rule.

## Regulatory Flexibility Act

The requirements of the Regulatory Flexibility Act (RFA) do not apply when an agency finds good cause pursuant to 5 U.S.C. 553 to adopt a rule without prior notice and comment. Because the FAA has determined that it has good cause to adopt this rule without notice and comment, RFA analysis is not required.

## Costs of Compliance

The FAA estimates that this AD affects 0 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
Perform ultrasonic inspection for one set of blades	8 work-hours × \$85 per hour = \$680	\$0	\$680	\$0

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

### On-Condition Costs

Action	Labor cost	Parts cost	Cost per product
Replace fan blade	4 work-hours × \$85 per hour = \$340	\$190,000	\$190,340

## **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.

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**

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, and
- (2) Will not affect intrastate aviation in Alaska.

## **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 adding the following new airworthiness directive (AD):



**2019-25-13 Engine Alliance:** Amendment 39-21011; Docket No. FAA-2019-0912; Product Identifier 2019-NE-33-AD.

**(a) Effective Date**

This AD is effective January 14, 2020.

**(b) Affected ADs**

None.

**(c) Applicability**

This AD applies to Engine Alliance (EA) GP7270 and GP7277 model turbofan engines with low-pressure compressor (LPC) 1st-stage fan blades, part number (P/N) 5700531, 5702931, 5702931CL1, or 5702931CL2, installed.

**(d) Subject**

Joint Aircraft System Component (JASC) Code 7230, Turbine Engine Compressor Section.

**(e) Unsafe Condition**

This AD was prompted by a report of an in-flight shutdown of an engine due to the fracture of multiple LPC 1st-stage fan blades. The FAA is issuing this AD to prevent failure of the fan blade. The unsafe condition, if not addressed, could result in uncontained fan blade release, 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) For engines with affected LPC 1st-stage fan blades that have 3,250 or more flight cycles (FCs) since new as of the effective date of this AD, within 250 FCs after the effective date of this AD, perform an ultrasonic inspection of the LPC 1st-stage fan blades in accordance with the Accomplishment Instructions, "For Fan Blades Installed In An Engine," paragraph 1, or "For Fan Blades Not Installed In an Engine," paragraph 1, as applicable, of EA Service Bulletin (SB) EAGP7-A72-426, dated September 30, 2019.

(2) If the ultrasonic inspection of the affected fan blades results in a rejectable ultrasonic indication, remove the fan blade from service and replace with a part eligible for installation before further flight.

Note 1 to paragraph (g)(2): Guidance on determining a rejectable ultrasonic indication can be found in Non-Destructive Inspection Procedure, NDIP-1205, Revision 1–GP7000 1st Stage LPC Rotor (Fan) Blade Assembly Airfoil Ultrasonic Inspection for Cracks (Fan Blades installed or uninstalled), (“NDIP-1205”), dated September 23, 2019.

**(h) No Reporting Requirement**

No reporting requirement contained within NDIP-1205 is required by this AD.

**(i) Credit for Previous Actions**

You may take credit for the ultrasonic inspection required by paragraph (g)(1) of this AD if you performed the inspection before the effective date of this AD using NDIP-1205, Revision 1, dated September 23, 2019, or Original Issue, dated August 30, 2019.

**(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 certification office, send it to the attention of the person identified in paragraph (k) 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**

For more information about this AD, contact Matthew Smith, Aerospace Engineer, ECO Branch, FAA, 1200 District Avenue, Burlington, MA 01803; phone: 781-238-7735; fax: 781-238-7199; email: Matthew.C.Smith@faa.gov.

**(l) 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) Engine Alliance (EA) Service Bulletin EAGP7-A72-426, dated September 30, 2019.

(ii) [Reserved]

(3) For EA service information identified in this AD, contact Engine Alliance, 411 Silver Lane, East Hartford, CT 06118; phone: 800-565-0140; email: help24@pw.utc.com; website: [www.engineallianceportal.com](http://www.engineallianceportal.com).

(4) You may view this service information at the FAA, Engine and Propeller Standards Branch, 1200 District Avenue, Burlington, MA 01803. 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, email: [fedreg.legal@nara.gov](mailto:fedreg.legal@nara.gov), or go to: <https://www.archives.gov/federal-register/cfr/ibr-locations.html>.

Issued in Burlington, Massachusetts, on December 12, 2019.

Robert J. Ganley,  
Manager, Engine and Propeller Standards Branch, Aircraft Certification Service.