

[Federal Register Volume 83, Number 231 (Friday, November 30, 2018)]

[Rules and Regulations]

[Pages 61529-61531]

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

[FR Doc No: 2018-26026]

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## **DEPARTMENT OF TRANSPORTATION**

### **Federal Aviation Administration**

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

**[Docket No. FAA-2018-0869; Product Identifier 2018-NE-32-AD; Amendment 39-19435; AD 2018-20-01]**

**RIN 2120-AA64**

#### **Airworthiness Directives; CFM International S.A. Turbofan Engines**

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

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

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**SUMMARY:** We are adopting a new airworthiness directive (AD) for all CFM International S.A. (CFM) LEAP-1B21, LEAP-1B23, LEAP-1B25, LEAP-1B27, LEAP-1B28, LEAP-1B28B1, LEAP-1B28B2, LEAP-1B28B2C, LEAP-1B28B3, LEAP-1B28BBJ1, and LEAP-1B28BBJ2 turbofan engines with a certain high-pressure turbine (HPT) stator case (HPT cases) installed. This AD requires removal of affected HPT cases from service and their replacement with a part eligible for installation. This AD was prompted by the discovery of a quality escape at a manufacturing facility involving unapproved welds on HPT cases. We are issuing this AD to address the unsafe condition on these products.

**DATES:** This AD is effective December 17, 2018.

The Director of the Federal Register approved the incorporation by reference of a certain publication listed in this AD as of December 17, 2018.

We must receive comments on this AD by January 14, 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: 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 CFM International Inc., Aviation Operations Center, 1 Neumann Way, M/D Room 285, Cincinnati, OH 45125; phone: 877-432-3272; fax: 877-432-3329; email: aviation.fleetsupport@ge.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 <http://www.regulations.gov> by searching for and locating Docket No. FAA-2018-0869.

### **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-2018-0869; 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 (phone: 800-647-5527) is listed above. Comments will be available in the AD docket shortly after receipt.

**FOR FURTHER INFORMATION CONTACT:** Christopher McGuire, Aerospace Engineer, ECO Branch, FAA, 1200 District Avenue, Burlington, MA 01803; phone: 781-238-7120; fax: 781-238-7199; email: [chris.mcguire@faa.gov](mailto:chris.mcguire@faa.gov).

### **SUPPLEMENTARY INFORMATION:**

#### **Discussion**

We learned from CFM of a quality escape at one of their suppliers, AECC Aero Science and Technology Co., Ltd., which was performing welds on newly-manufactured components to correct errors introduced in their manufacturing process. These welds were not reviewed or approved by either CFM or the FAA. CFM's review of manufacturing records determined that these parts include HPT cases installed on CFM LEAP-1B turbofan engines. These HPT cases are life limited. The unapproved repairs reduced the material capability of these cases which requires their removal prior to reaching their published Airworthiness Limitation Section life limit. This condition, if not addressed, could result in failure of the HPT case, engine fire, and damage to the airplane. We are issuing this AD to address the unsafe condition on these products.

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

We reviewed CFM Service Bulletin (SB) LEAP-1B-72-00-0193-01A-930A-D, Issue 003, dated November 5, 2018. The SB describes procedures for removing the affected HPT cases from the engine. 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**

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 the adoption of this rule because the compliance time for the required action is shorter than the time necessary for the public to comment and for us to publish the final rule. Certain HPTs cases must be removed within 200 cycles after the effective date of this AD to ensure they do not fail. Therefore, we find good cause that notice and opportunity for prior public comment are impracticable. In addition, for the reason 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-2018-0869 and Product Identifier 2018-NE-32-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 two 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
Remove HPT case and FPI of forward flange	1000 work-hour × \$85 per hour = \$85,000	\$179,400	\$264,400	\$528,800

We estimate the following costs to do any necessary replacements that would be required based on the results of the inspection. We have no way of determining the number of aircraft that might need this replacement:

**On-Condition Costs**

Action	Labor cost	Parts cost	Cost per product
Replace combustion case assembly	10 work-hours × \$85 per hour = \$850	\$558,800	\$559,650

## **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**

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 adding the following new airworthiness directive (AD):



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**2018-20-01 CFM International S.A.:** Amendment 39-19435; Docket No. FAA-2018-0869; Product Identifier 2018-NE-32-AD.

**(a) Effective Date**

This AD is effective December 17, 2018.

**(b) Affected ADs**

None.

**(c) Applicability**

This AD applies to CFM International S.A. (CFM) LEAP-1B21, LEAP-1B23, LEAP-1B25, LEAP-1B27, LEAP-1B28, LEAP-1B28B1, LEAP-1B28B2, LEAP-1B28B2C, LEAP-1B28B3, LEAP-1B28BBJ1, and LEAP-1B28BBJ2 turbofan engines with a high-pressure turbine (HPT) stator case (HPT case), part number (P/N) 2541M81G01 installed, and with any HPT case serial number (S/N) listed in Table 1 or Table 2 of Planning Information, paragraph 3.A., of CFM Service Bulletin (SB) LEAP-1B-72-00-0193-01A-930A-D, Issue 003, dated November 5, 2018.

**(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 welds on HPT cases. We are issuing this AD to prevent failure of the HPT case. The unsafe condition, if not addressed, could result in 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) After the effective date of this AD, remove the affected HPT case from service no later than the number of cycles in service specified in Table 1 or Table 2 of Planning Information, paragraph 3.A., of CFM SB LEAP-1B-72-00-0193-01A-930A-D, Issue 003, dated November 5, 2018.

(2) After removing the HPT case as required in paragraph (g)(1) of this AD, and before further flight, determine if the combustor diffuser nozzle (CDN) case, P/N 2548M30G01 to 2548M30G07, inclusive, and with any CDN case S/N listed in Table 1 or Table 2 of Planning Information, paragraph 3.A., of CFM SB LEAP-1B-72-00-0193-01A-930A-D, Issue 003, dated November 5, 2018, needs to be replaced as follows:

(i) Inspect the HPT case forward flange outer diameter using the Accomplishment Instructions, paragraphs 5.B.(1), 5.B.(2), and 5.B.(4) of CFM SB LEAP-1B-72-00-0193-01A-930A-D, Issue 003, dated November 5, 2018.

(ii) If, during the inspection required by paragraph (g)(2)(i) of this AD, you find an HPT case forward flange cracked across the full axial length of the outer diameter, remove the CDN case, P/N 2548M30G01 to 2548M30G07, inclusive, from service and, before further flight, replace with a part eligible for installation.

#### **(h) 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 (i) 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.

#### **(i) Related Information**

For more information about this AD, contact Christopher McGuire, Aerospace Engineer, ECO Branch, FAA, 1200 District Avenue, Burlington, MA 01803; phone: 781-238-7120; fax: 781-238-7199; email: chris.mcguire@faa.gov.

#### **(j) 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) CFM Service Bulletin LEAP-1B-72-00-0193-01A-930A-D, Issue 003, dated November 5, 2018.

(ii) [Reserved]

(3) For CFM service information identified in this AD, contact CFM International Inc., Aviation Operations Center, 1 Neumann Way, M/D Room 285, Cincinnati, OH 45125; phone: 877-432-3272; fax: 877-432-3329; email: aviation.fleetsupport@ge.com.

(4) You may view this service information at 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, call 202-741-6030, or go to: <http://www.archives.gov/federal-register/cfr/ibr-locations.html>.

Issued in Burlington, Massachusetts, on November 26, 2018.

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