



[4910-13-P]

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2016-9592; Directorate Identifier 2016-NE-30-AD]

RIN 2120-AA64

Airworthiness Directives; CFM International S.A. Turbofan Engines

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Notice of proposed rulemaking (NPRM).

SUMMARY: We propose to adopt a new airworthiness directive (AD) for certain CFM International S.A. (CFM) CFM56-3, -3B, and -3C turbofan engines. This proposed AD was prompted by a report of dual-engine loss of thrust control that resulted in an air turn back. This proposed AD would require initial and repetitive checks of the variable stator vane (VSV) actuation system in the high-pressure compressor (HPC). We are proposing this AD to correct the unsafe condition on these products.

DATES: We must receive comments on this proposed AD by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

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 NPRM, 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 FAA, Engine & Propeller Directorate, 1200 District Avenue, Burlington, MA. For information on the availability of this material at the FAA, call 781-238-7125.

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-2016-9592; or in person at the Docket Management Facility between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this proposed AD, the regulatory evaluation, any comments received, and other information. The street address for the Docket Office (phone: 800-647-5527) is in the ADDRESSES section. Comments will be available in the AD docket shortly after receipt.

FOR FURTHER INFORMATION CONTACT: David Bethka, Aerospace Engineer, Engine Certification Office, FAA, Engine & Propeller Directorate, 1200 District Avenue, Burlington, MA 01803; phone: 781-238-7129; fax: 781-238-7199; email: david.bethka@faa.gov.

SUPPLEMENTARY INFORMATION:

Comments Invited

We invite you to send any written relevant data, views, or arguments about this proposal. Send your comments to an address listed under the ADDRESSES section. Include “Docket No. FAA-2016-9592; Directorate Identifier 2016-NE-30-AD” at the beginning of your comments. We specifically invite comments on the overall regulatory, economic, environmental, and energy aspects of this proposed AD. We will consider all

comments received by the closing date and may amend this proposed AD 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 proposed AD.

Discussion

We received a report of a dual-engine loss of thrust control that resulted in an air turn back. Investigation determined that loss of thrust control was the result of restricted movement of the VSV actuation rings in the HPC stator case. This restricted movement resulted from resistance caused by corrosion in the VSV bores. This condition, if not corrected, could result in failure of the VSV actuators, loss of engine thrust control, and reduced control of the airplane.

Related Service Information

We reviewed CFM Service Bulletin (SB) CFM56-3 S/B 72-1169, Revision 01, dated April 25, 2016. This SB describes procedures for examining the VSV bores on the inside of the HPC case. We also reviewed CFM CFM56-3 Engine Shop Manual (ESM) 72-32-01, Repair 031, dated February 8, 2016. This repair provides guidance on reaming and applying anti-corrosion paint to the VSV bores.

FAA's Determination

We are proposing 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.

Proposed AD Requirements

This proposed AD would require initial and repetitive checks of stage 1, stage 2, and stage 3 of the HPC VSV actuation system.

Differences Between this Proposed AD and the Service Information

CFM SB CFM56-3 S/B 72-1169, Revision 01, dated April 25, 2016, only recommends inspection of CFM56-3 engines if 50% or more of their operation occurs in tropical rainforest climate zones and the utilization rate is less than 150 hours per month. We find that corrosion could occur in other climate zones, and would be a function of hours as well as utilization. We also find it is not practical to base AD requirements on geography and, to a lesser extent, utilization. Therefore, we are proposing that this AD be applicable to all CFM56-3 engines not previously repaired as described in CFM CFM56-3 3 ESM 72-32-01, Repair 031, dated February 8, 2016. In addition, CFM SB CFM56-3 S/B 72-1169 requires that repair be performed within 5 flight cycles if the pull force is measured to be greater than 100 lbs. Given that pull force greater than 100 lbs may result in loss of thrust control, we are proposing in this AD that repair be done prior to further flight.

Costs of Compliance

We estimate that this proposed AD affects 460 engines installed on airplanes of U.S. registry.

We estimate the following costs to comply with this proposed AD:

Estimated costs

Action	Labor cost	Parts cost	Cost per product	Cost on U.S. operators
Inspection of the HPC VSV actuation system	2 work-hours X \$85 per hour = \$170	\$0	\$170	\$78,200

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.

Regulatory Findings

We determined that this proposed AD would not have federalism implications under Executive Order 13132. This proposed AD would 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 this proposed regulation:

- (1) Is not a "significant regulatory action" under Executive Order 12866,
- (2) Is not a "significant rule" under the DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979),
- (3) Will not affect intrastate aviation in Alaska to the extent that it justifies making a regulatory distinction, 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.

The Proposed Amendment

Accordingly, under the authority delegated to me by the Administrator, the FAA proposes to amend 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):

CFM International S.A.: Docket No. FAA-2016-9592; Directorate Identifier 2016-NE-30-AD.

(a) Comments Due Date

We must receive comments by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

(b) Affected ADs

None.

(c) Applicability

This AD applies to CFM International S.A. (CFM) CFM56-3, -3B, and -3C turbofan engines.

(d) Subject

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

(e) Unsafe Condition

This AD was prompted by a report of dual engine loss of thrust control that resulted in an air turn back. We are issuing this AD to prevent failure of the variable

stator vane (VSV) actuators, loss of engine thrust control, and reduced control of the airplane.

(f) Compliance

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

Within 12 months after the effective date of this AD:

(1) Inspect the affected engines to determine if the compressor front stator case is marked with “RP031” adjacent to the part number. If the case is marked with “RP031,” no further action required. If the case is not marked with “RP031,” follow the remaining steps in paragraph (f) of this AD.

(2) Perform an initial pull force check of stage 1, stage 2, and stage 3 of the compressor VSV actuation system.

(i) If any stage requires more than 100 lbs force to move the actuation ring, ream the VSV bores and apply anti-corrosion coating to stage 1, 2, and 3, prior to further flight.

(ii) If any stage requires more than 75 lbs and less than or equal to 100 lbs force to move the actuation ring, repeat the inspection within 3 months since last inspection.

(iii) If all stages require 75 lbs force or less to move the actuation rings, repeat the inspection within 12 months since last inspection.

(3) Thereafter, continue to perform repetitive pull force checks of stage 1, 2, and 3 of the compressor VSV actuation system and disposition as specified in paragraphs (2)(i) through (2)(iii) of this AD.

(g) Optional Terminating Action

Reaming the VSV bores and applying anti-corrosion coating, as specified in paragraph (f)(2)(i) of this AD, is terminating action to the repetitive inspections required by paragraph (f)(3) of this AD.

(h) Alternative Methods of Compliance (AMOCs)

The Manager, Engine Certification Office, FAA, may approve AMOCs for this AD. Use the procedures found in 14 CFR 39.19 to make your request. You may email your request to: ANE-AD-AMOC@faa.gov.

(i) Related Information

(1) For more information about this AD, contact David Bethka, Aerospace Engineer, Engine Certification Office, FAA, Engine & Propeller Directorate, 1200 District Avenue, Burlington, MA 01803; phone: 781-238-7129; fax: 781-238-7199; email: david.bethka@faa.gov.

(2) CFM Service Bulletin CFM56-3 S/B 72-1169, Revision 01, dated April 25, 2016, and CFM CFM56-3 Engine Shop Manual 72-32-01, Repair 031, dated February 8, 2016, can be obtained from CFM using the contact information in paragraph (i)(3) of this proposed AD.

(3) For 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 the FAA, Engine & Propeller Directorate, 1200 District Avenue, Burlington, MA. For information on the availability of this material at the FAA, call 781-238-7125.

Issued in Burlington, Massachusetts, on February 28, 2017.

Carlos A. Pestana,
Acting Assistant Manager, Engine & Propeller Directorate,
Aircraft Certification Service.
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