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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2013-0407; Directorate Identifier 2012-NE-22-AD; Amendment 39-17710; AD 2013-26-01]

RIN 2120-AA64

Airworthiness Directives; CFM International S.A. Turbofan Engines

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule.

SUMMARY: We are adopting a new airworthiness directive (AD) for all CFM International (CFM) S.A. CFM56-3 and CFM56-7B series turbofan engines with certain accessory gearboxes (AGBs) not equipped with a handcranking pad "oil dynamic seal" assembly. This AD was prompted by 42 events of total loss of engine oil from CFM56 series turbofan engines while in flight. This AD requires an independent inspection to verify re-installation of the handcranking pad cover after removal of the pad cover for maintenance until installation of a handcranking pad oil dynamic seal assembly. We are issuing this AD to prevent loss of engine oil while in flight, which could result in engine failure, loss of thrust control, and damage to the airplane.

DATES: This AD is effective February 3, 2014.

ADDRESSES: 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: geae.aoc@ge.com. You may view this service information at the FAA, Engine & Propeller Directorate, 12 New England Executive Park, 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-2013-0407; 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 AD, the regulatory evaluation, any comments received, and other information. The address for the Docket Office (phone: 800-647-5527) is Document Management Facility, 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: Antonio Cancelliere, Aerospace Engineer, Engine Certification Office, FAA, Engine & Propeller Directorate, 12 New England Executive Park, Burlington, Massachusetts, 01803; phone: 781-238-7751; fax: 781-238-7199; email: antonio.cancelliere@faa.gov.

SUPPLEMENTARY INFORMATION:

Discussion

We issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 to include an AD that would apply to the specified products. The NPRM published in the Federal Register on June 10, 2013 (78 FR 34605). The NPRM proposed to require an independent inspection to verify re-installation of the handcranking pad cover after removal of the pad cover for maintenance until installation of a handcranking pad oil dynamic seal assembly.

Comments

We gave the public the opportunity to participate in developing this AD. The following presents the comments received on the proposal and the FAA's response to each comment.

Request To Make Optional Terminating Action Mandatory

The National Transportation Safety Board comments that the FAA should make the installation of an oil dynamic seal assembly a mandatory, rather than an optional, terminating action, as has the European Aviation Safety Agency (EASA) and the Civil Aviation Administration of China.

The FAA agrees that the loss of engine oil from unsecured handcranking pad covers can be addressed with the introduction of a dynamic seal. The FAA has structured its approach to achieving that goal, however, through a combination of inspections and part replacement, which allows each affected operator to manage its own maintenance schedule. The FAA believes that this approach will not have as great an economic effect on the affected operators as mandating a part replacement. The FAA also finds that the level of safety achieved with its approach to this unsafe condition is acceptable, and believes that operators will eventually incorporate the dynamic seal to terminate the required inspections.

Request To Revise Optional Terminating Action

American Airlines (AAL) requested that we revise paragraph (g) of the AD (the Terminating Action paragraph) to minimize the effects of differences in the AGB disassembly and assembly procedures between those specified in the engine shop manual and current or subsequent service bulletins. AAL noted that this method of specifying the terminating action would preclude the need for Alternative Method of Compliance (AMOC) requests.

We agree in part. We revised the Terminating Action paragraph by removing the requirement to follow specific service bulletins (SBs). Guidance on CFM CFM56 SBs and engine manual can now be found in the Related Information section of this AD.

Request To Include FAA-Approved Maintenance Program in Compliance

Airlines for America asked that we include in paragraph (f) of this AD, a time period in which an approved maintenance program must be revised to include an Independent Inspection. Airlines for

America also asked that we clarify that documentation for each inspection on every airplane need not be made if relying on the insertion of an Independent Inspection in the aircraft Continuous Airworthiness Maintenance Program (CAMP).

We agree in part, and have made paragraphs (f)(1) and (f)(2) of this AD disjunctive in order to clarify that either an Independent Inspection is required after each maintenance involving the handcranking pad cover or that operators insert an Independent Inspection requirement in their aircraft CAMP. We do point out that if an operator relies on paragraph (f)(1) of this AD, a maintenance record entry is required to record compliance with this AD after each time the handcranking pad cover is removed and re-installed. If an operator relies on paragraph (f)(2) of this AD however, only one record entry is required to document that the CAMP has been modified as required. After the CAMP has been modified, the operator need only document actions as required by the CAMP.

We have not, however, added a time period within which operators must make a change to their CAMP. This AD itself states that it will become effective 35 days after publication in the Federal Register. After that date, operators must comply with either paragraph (f)(1), (f)(2), or (g) of this AD.

Request To Clarify Inspection Options

Delta Airlines (Delta) requested that we clarify that both apparent options—an independent inspection or addition of the inspection as a Required Inspection Item into the operator's approved CAMP—in compliance with paragraph (f) of this AD are indeed options for meeting the requirements of this AD.

We agree that further clarification was needed. As explained with the response to the Airlines for America comment, we have made paragraphs (f)(1) and (f)(2) of this AD disjunctive to clarify that an operator either perform an Independent Inspection each time the handcranking pad cover is removed and re-installed, or insert in its aircraft CAMP a requirement for an Independent Inspection.

Request To Delay Issuance of This AD

Delta requested that we delay issuance of this AD until CFM issues revisions to CFM SB CFM56-7B S/B 72-0564, Revision 3, dated May 25, 2011, and CFM SB CFM56-7B S/B 27-0879, Revision 1, dated April 12, 2012. Delay in publication of this AD would minimize the burden of AMOC requests on operators, CFM, and the FAA. It would also allow CFM to modify these SBs to correct tooling references and to modify impingement test requirements.

We partially agree. We agree that we need not mandate use of specific SB versions to accomplish the terminating action. We have therefore, removed those SB references from paragraph (g) of this AD and moved those references to paragraph (j), Related Information, of this AD. This will eliminate the need for requests for AMOCs should the manufacturer modify its SBs. Accordingly, we need not delay issuance of this AD until any particular SB version is published.

Request To Allow Acceptable Maintenance Procedures To Install Seal

Delta requested that we allow operators or maintenance facilities to install oil dynamic seal assemblies using the SBs referenced in the NPRM (78 FR 34605, June 10, 2013) along with other acceptable maintenance procedures rather than mandating that all work be performed in accordance with the referenced SBs.

We agree. We moved the references to the SBs from the compliance section of this AD to the Related Information section of this AD.

Request To Define Compliance Time

Delta asked that we specifically define the compliance time in which operators have after the effective date of this AD to put the inspection program in place.

We disagree. As stated earlier, this AD will become effective as indicated in the DATES section. As of that date, operators must comply with this AD by either following paragraph (f)(1) of this AD for each time maintenance is performed to remove and re-install the handcranking pad cover, or (f)(2) of this AD to insert an Independent Inspection requirement in their aircraft CAMP, or (g) of this AD by replacing the AGB that incorporates an oil dynamic seal assembly. No further compliance time need be allowed. We did not change this AD.

Request To Harmonize With EASA AD 2012-0209

RyanAir requested that we harmonize differences between the NPRM (78 FR 34605, June 10, 2013) and EASA AD 2012-0209, dated October 8, 2012. RyanAir identified differences between the EASA AD and the NPRM in the areas of applicability, terminating action, service information, and compliance language.

We disagree. We believe that references in the Applicability section of this AD to specific AGB part numbers not equipped with the oil dynamic seal assembly will avoid the need to revise this AD in the future should additional approved AGBs be available for installation. We did not change this AD.

Support for This AD

The Boeing Company and United Airlines support this AD as proposed (78 FR 34605, June 10, 2013).

Conclusion

We reviewed the relevant data, considered the comments received, and determined that air safety and the public interest require adopting this AD with the changes described previously.

We also determined that these changes will not increase the economic burden on any operator or increase the scope of this AD.

Costs of Compliance

We estimate that this AD will affect 2,702 CFM56-3 and CFM56-7B engines installed on airplanes of U.S. registry. We also estimate that it will take about 1 hour to perform the independent inspection required by this AD. The average labor rate is \$85 per hour. We estimate that normal maintenance will require the AGB handcranking pad cover to be removed every 1,300 flights cycles. Based on an average use of these model engines of approximately 6,000,000 flight cycles per year, we estimate that an independent inspection would be required about 4,615 times per year. Therefore, assuming that an operator does not already have an Independent Inspection of the AGB handcranking pad cover in its approved aircraft maintenance program, we estimate the cost of this AD for U.S. operators to be \$392,275.

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

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 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.

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):



2013-26-01 CFM International S.A.: Amendment 39-17710; Docket No. FAA-2013-0407; Directorate Identifier 2012-NE-22-AD.

(a) Effective Date

This AD is effective February 3, 2014.

(b) Affected ADs

None.

(c) Applicability

This AD applies to CFM International S.A. CFM56-3 series and CFM56-7B series turbofan engines equipped with the following accessory gearbox (AGB) part numbers (P/Ns):

(1) For CFM56-3 engines: 335-300-103-0, 335-300-105-0, 335-300-106-0, 335-300-107-0, 335-300-108-0, 335-300-109-0, or 335-300-110-0.

(2) For CFM56-7B engines (except CFM56-7B27A, CFM56-7B27A/3, and CFM56-7B27AE engines): 340-046-503-0, 340-046-504-0, or 340-046-505-0.

(3) For CFM56-7B27A, CFM56-7B27A/3, and CFM56-7B27AE engines: 340-188-601-0 or 340-188-603-0.

(d) Unsafe Condition

This AD was prompted by 42 events of total loss of engine oil while in flight. We are issuing this AD to prevent loss of engine oil while in flight, which could result in engine failure, loss of thrust control, and damage to the airplane.

(e) Compliance

Unless already done, do the actions in paragraphs (f) or (g) of this AD.

(f) Inspection of the AGB Handcranking Pad Cover

(1) Perform an Independent Inspection to verify re-installation of the AGB handcranking pad cover after any maintenance that involves the removal and re-installation of the AGB handcranking cover, or

(2) Insert an Independent Inspection as a required inspection item in the approved continuous airworthiness maintenance program for the aircraft.

(g) Optional Terminating Action

As an optional terminating action to the inspection requirement of paragraph (f) of this AD, install an AGB that is not listed in paragraph (c) of this AD that incorporates the oil dynamic seal assembly.

(h) Definition

For the purpose of this AD, an Independent Inspection means a second inspection by a qualified individual who was not involved in the original re-installation of the AGB handcranking pad cover following maintenance to confirm that the cover is installed correctly.

(i) 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.

(j) Related Information

(1) For more information about this AD, contact Antonio Cancelliere, Aerospace Engineer, Engine Certification Office, FAA, Engine & Propeller Directorate, 12 New England Executive Park, Burlington, Massachusetts, 01803; phone: 781-238-7751; fax: 781-238-7199; email: antonio.cancelliere@faa.gov.

(2) CFM International S.A. Service Bulletin (SB) No. CFM56-7B S/B 72-0564, Revision 3, dated May 25, 2011, and SB No. CFM56-7B S/B 27-0879, Revision 1, dated April 12, 2012, which are not incorporated by reference in this AD, provide guidance on obtaining an AGB that incorporates an oil dynamic seal assembly. The CFM56 engine manuals, which are also not incorporated by reference in this AD, include instructions on assembling and disassembling the AGB.

(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: geae.aoc@ge.com.

(4) You may view this service information at the FAA, Engine & Propeller Directorate, 12 New England Executive Park, Burlington, MA. For information on the availability of this material at the FAA, call 781-238-7125.

(k) Material Incorporated by Reference

None.

Issued in Burlington, Massachusetts, on December 16, 2013.
Frank P. Paskiewicz,
Acting Director,
Aircraft Certification Service.