



適航指令發布單
Airworthiness Directive Issuance Form

民航局 AD 編號 AD number	CAA-2021-05-007	發布日期 Date issued	2021/5/24												
適用之航空產品 Applied to (models, serial numbers or part numbers, as applicable)	<p>CFM56-5B1, -5B1/2P, -5B1/3, -5B1/P, -5B2, -5B2/2P, -5B2/3, -5B2/P, -5B3/2P, -5B3/2P1, -5B3/3, -5B3/3B1, -5B3/P, -5B3/P1, -5B4, -5B4/2P, -5B4/2P1, -5B4/3, -5B4/3B1, -5B4/P, -5B4/P1, -5B5, -5B5/3, -5B5/P, -5B6, -5B6/2P, -5B6/3, -5B6/P, -5B7, -5B7/3, -5B7/P, -5B8/3, -5B8/P, -5B9/2P, -5B9/3, -5B9/P, CFM56-7B20, -7B20/2, -7B20/3, -7B20E, -7B22, -7B22/2, -7B22/3, -7B22/3B1, -7B22/B1, -7B22E, -7B22E/B1, -7B24, -7B24/2, -7B24/3, -7B24/3B1, -7B24/B1, -7B24E, -7B24E/B1, -7B26, -7B26/2, -7B26/3, -7B26/3B1, -7B26/3B2, -7B26/3B2F, -7B26/3F, -7B26/B1, -7B26/B2, -7B26E, -7B26E/B1, -7B26E/B2, -7B26E/B2F, -7B26E/F, -7B27, -7B27/2, -7B27/3, -7B27/3B1, -7B27/3B1F, -7B27/3B3, -7B27/3F, -7B27/B1, -7B27/B3, -7B27A, -7B27A/3, -7B27AE, -7B27E, -7B27E/B1, -7B27E/B1F, -7B27E/B3, and -7B27E/F model turbofan engines with a high-pressure turbine (HPT) inner stationary seal, part number (P/N) 1808M56G01 installed that has a serial number (S/N) listed in Planning Information, Paragraph 1.A., Table 1, of CFM Service Bulletin (SB) CFM56-5B S/B 72-0952, Revision 01, dated January 15, 2020, or in Planning Information, Paragraph 1.A., Table 1, CFM SB CFM56-7B S/B 72-1054, Revision 01, dated January 15, 2020, installed. and This AD does not apply to affected CFM CFM56-5B and CFM56-7B model turbofan engines with the affected HPT inner stationary seal installed if the seal has been repaired as specified in CFM56-5B Engine Shop Manual (ESM), 72-41-03, REPAIR 003, or CFM56-7B ESM, 72-41-03, REPAIR 003, after the year listed in Paragraph 1.A., Table 1, of CFM SB CFM56-5B S/B 72-0952, Revision 01, dated January 15, 2020, or Paragraph 1.A., Table 1, CFM SB CFM56-7B S/B 72-1054, Revision 01, dated January 15, 2020.</p>														
主旨摘要	This AD requires removal, inspection, and replacement of the affected HPT inner stationary seal and, depending on the findings, replacement of the rotating air HPT front seal, HPT rotor blades, and No. 3 ball bearing.														
民航局 CAA <input type="checkbox"/> 本國產品 Native products <input type="checkbox"/> 其他個案 Other	<div style="text-align: center;">設計國民航主管機構 Original Authorities</div> <table style="width: 100%;"><tr><td><input checked="" type="checkbox"/> FAA</td><td><input type="checkbox"/> Germany LBA</td></tr><tr><td><input type="checkbox"/> EASA</td><td><input type="checkbox"/> CAA-NL</td></tr><tr><td><input type="checkbox"/> Brazil</td><td><input type="checkbox"/> UK CAA</td></tr><tr><td><input type="checkbox"/> Transport Canada Civil Aviation</td><td><input type="checkbox"/> Japan CAB</td></tr><tr><td><input type="checkbox"/> DGAC</td><td><input type="checkbox"/> CAA of Israel</td></tr><tr><td></td><td><input type="checkbox"/> Other _____</td></tr></table>			<input checked="" type="checkbox"/> FAA	<input type="checkbox"/> Germany LBA	<input type="checkbox"/> EASA	<input type="checkbox"/> CAA-NL	<input type="checkbox"/> Brazil	<input type="checkbox"/> UK CAA	<input type="checkbox"/> Transport Canada Civil Aviation	<input type="checkbox"/> Japan CAB	<input type="checkbox"/> DGAC	<input type="checkbox"/> CAA of Israel		<input type="checkbox"/> Other _____
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	設計國 AD 編號 Original AD number	2021-10-09													
	<p>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) _</p> <p style="margin-left: 40px;">a. 生效日期另訂為(Re-specify the effective date as) : _____</p> <p style="margin-left: 40px;">b. 執行時限另訂為(Re-specify the compliance time or period as) : _____</p> <p>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)</p>														

備註 Note	ATA 72. Ref. CFM Service Bulletin CFM56-5B S/B 72-0952, Revision 01, dated January 15, 2020. and CFM Service Bulletin CFM56-7B S/B 72-1054, Revision 01, dated January 15, 2020.
註：	<ol style="list-style-type: none"> 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
Note：	<ol style="list-style-type: none"> 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

CAA Form ACS-P08-02

第一頁/共一頁

[Federal Register Volume 86, Number 96 (Thursday, May 20, 2021)]

[Rules and Regulations]

[Pages 27264-27268]

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

[FR Doc No: 2021-10607]

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2019-0568; Project Identifier 2019-NE-20-AD; Amendment 39-21542; AD 2021-10-09]

RIN 2120-AA64

Airworthiness Directives; CFM International, S.A. Turbofan Engines

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule.

SUMMARY: The FAA is adopting a new airworthiness directive (AD) for all CFM International, S.A. (CFM) CFM56-5B and CFM56-7B model turbofan engines with a certain high-pressure turbine (HPT) inner stationary seal installed. This AD was prompted by cracks found in the rotating air HPT front seal. This AD requires removal, inspection, and replacement of the affected HPT inner stationary seal and, depending on the findings, replacement of the rotating air HPT front seal, HPT rotor blades, and No. 3 ball bearing. The FAA is issuing this AD to address the unsafe condition on these products.

DATES: This AD is effective June 24, 2021.

The Director of the Federal Register approved the incorporation by reference of certain publications listed in this AD as of June 24, 2021.

ADDRESSES: 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, 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 at <https://www.regulations.gov> by searching for and locating Docket No. FAA-2019-0568.

Examining the AD Docket

You may examine the AD docket at <https://www.regulations.gov> by searching for and locating Docket No. FAA-2019-0568; 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: Christopher McGuire, Aviation Safety Engineer, ECO Branch, FAA, 1200 District Avenue, Burlington, MA 01803; phone: (781) 238-7120; fax: (781) 238-7199; email: chris.mcguire@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 CFM CFM56-5B and CFM56-7B model turbofan engines with a certain HPT inner stationary seal installed. The NPRM published in the Federal Register on September 20, 2019 (84 FR 49487). The NPRM was prompted by a report that two cracks were discovered on a CFM CFM56-5B model turbofan engine rotating air HPT front seal during a routine engine shop visit. After investigation, CFM determined that the HPT inner stationary seal, part number 1808M56G01, may not have received the correct braze heat treat cycle at the time of the honeycomb replacement. As a result, the affected HPT inner stationary seal could lead to a localized separation of the replaced honeycomb, which may reduce the life of the rotating air HPT front seal. In the NPRM, the FAA proposed to require removal, inspection, and replacement of the affected HPT inner stationary seal and, depending on the findings, replacement of the rotating air HPT front seal, HPT rotor blades, and No. 3 ball bearing. The FAA is issuing this AD to address the unsafe condition on these products.

Discussion of Final Airworthiness Directive

Comments

The FAA received comments from nine commenters. The commenters were Air Line Pilots Association, International (ALPA); American Airlines (AAL); Azur Aviation (Azur); The Boeing Company (Boeing); CFM; Delta Air Lines, Inc. (Delta); United Airlines (UAL); MTU Maintenance Canada (MTU) and Magnetic MRO. Four of the nine commenters requested changes that resulted in updates to this AD. Three commenters requested clarification on definitions. Two commenters requested updates to the service information. Two commenters expressed support for the AD. The following presents the comments received on the NPRM and the FAA's response to each comment.

Request To Clarify Parts That Can Be Returned to Service

Azur requested that the FAA clarify the parts that can be returned to service after removal. Azur reasoned that paragraph (g)(1) of this AD requires that an HPT inner stationary seal be removed from service and replaced with either a part that is not listed in the service information or a repaired part identified in paragraph (h)(2), Definitions, of this AD. In contrast, paragraphs (g)(3)(i) and (iii) of this AD, respectively, indicate only to remove the rotating air HPT front seal and No. 3 ball bearing from service and replace them with a "part eligible for installation."

Azur suggested adding one of the following to this AD to remove the ambiguity: (1) Remove "remove from service" from paragraph (g)(1) of this AD; (2) Identify rotating air HPT front seals and No. 3 ball bearings that are not eligible for installation; (3) Add an "Installation Prohibition" paragraph for the removed rotating air HPT front seal and No. 3 ball bearing; (4) Indicate what to do with the removed rotating air HPT front seal and No. 3 ball bearing in paragraphs (g)(3)(i) and (iii) of this AD, such as discard these parts; or (5) Identify instruction for the removed rotating air HPT front seals and No. 3 ball bearings.

Use of “remove from service” in this AD indicates that the rotating air HPT front seal and No. 3 ball bearing should no longer be installed on an engine. Therefore, neither the removed rotating air HPT front seal nor the removed No. 3 ball bearing can be repaired and returned to service. The FAA, however, updated paragraph (h), Definitions, of this AD, to clarify that a part eligible for installation for both a rotating air HPT front seal and a No. 3 ball bearing refers to parts that were not removed from service based on the findings of honeycomb separation of the HPT inner stationary seal. The FAA also updated paragraph (g)(1) of this AD to remove “remove from service” to clarify that the HPT inner stationary seal can be repaired and returned to service. The FAA also moved the definition of an HPT inner stationary seal that is eligible for installation from paragraph (g)(1) to paragraph (h)(1) of this AD.

Request To Update the Definition of Engine Shop Visit

AAL, Delta, and UAL requested updates or clarification of the definition of an “engine shop visit” provided in paragraph (h)(1) of this AD.

AAL requested that the FAA update the definition of an engine shop visit to clarify circumstances that are not an engine shop visit. AAL reasoned that CFM Service Bulletin (SB) CFM56-7B S/B 72-0972 provides guidance on when AD mandated actions can be accomplished to avoid undue burden on operators, specifically in circumstances when engines are inducted to the shop for quick corrective action, such as repair for foreign object damage.

UAL requested that the FAA update the definition of an engine shop visit to specify which major mating engine case flanges need to be separated to be an engine shop visit as defined. UAL stated that the ambiguity of the “major mating engine case flange” may result in an inspection of the HPT inner stationary seal for honeycomb separation when the core is not exposed, such as during fan case replacement.

Delta recommended that the manufacturer define “engine shop visit” in its service information.

The FAA agrees that the definition of an engine shop visit in this AD does not include the separation of engine flanges solely for the purpose of transportation of the engine or replacing the fan or propulsor without subsequent maintenance. All other separations of major mating engine case flanges are an engine shop visit, as defined, and require removal, replacement, and inspection of the HPT inner stationary seal as required by paragraphs (g)(1) and (2) of this AD. The FAA changed the definition of “engine shop visit” in paragraph (h) this AD to clarify the definition of an engine shop visit.

The FAA did not revise this AD in response to Delta's comment. The FAA notes, however, that in CFM Service Bulletin (SB) CFM56-5B S/B 72-0952, Revision 01, and CFM SB CFM56-7B S/B 72-1054, Revision 01, both dated January 15, 2020, the manufacturer updated the SBs to clarify that the quick turn shop visit type is not included in the SB's definition of “shop visit.”

Request To Change Inspection of HPT Rotor Blade To Remove Debris

AAL requested that the FAA change paragraph (g)(3)(ii) of this AD to “Remove the HPT rotor blade from service and inspect per CFM56-7B CFMI-TP.SM.10 Engine Shop Manual (ESM) 72-52-01-09 High Pressure Turbine Rotor Blades—Inspection 001 or replace with parts eligible for installation.” AAL reasoned that the HPT rotor blade collects various types of debris over its service life, so attempting to determine if the debris is honeycomb material based upon a general visual inspection is subjective and open to interpretation. Therefore, AAL suggested that removing the HPT rotor blades would ensure that the repair facility could remove the debris in the internal cavities and return the HPT rotor blades to service.

Since the NPRM was published, the manufacturer revised the service information, removing the inspection of the HPT rotor blade internal cavities for honeycomb metal debris. As a result, the FAA changed paragraph (g)(3)(ii) of this AD to eliminate the requirement to inspect the HPT rotor blade internal cavities for honeycomb metal debris. The FAA also removed the estimated cost associated with the inspection of the HPT rotor blade internal cavities for honeycomb metal debris from this AD.

Request To Clarify Reason To Replace No. 3 Ball Bearing

Magnetic MRO requested clarification for the reason to replace the No. 3 ball bearing if metal debris is found in the HPT blade cavities.

In the NPRM, the FAA proposed to require replacement of the No. 3 ball bearing if honeycomb separation was found during the inspection required by paragraph (g)(2) of this AD. The replacement of the No. 3 ball bearing is not linked to a finding of debris in the HPT rotor blade internal cavities but is required if honeycomb separation is found. Honeycomb separation results in increased secondary air flow impinging on the rotating air HPT front seal, which increases the axial load on the No. 3 ball bearing. This increased axial load impacts the durability of the No. 3 ball bearing. The FAA did not change this AD based on this comment. Request To Add a Terminating Action

AAL requested that the FAA update paragraph (g)(1) of this AD to include, "Accomplishment of these instructions are considered terminating action to this AD." AAL reasoned that this statement provides specific closure since the corrective action has been clearly defined and approved by the FAA. AAL suggested this maintenance action is not recurring and, as such, would constitute an appropriate terminating action.

The FAA disagrees with adding the terminating action statement. Performing the actions required by this AD achieves compliance with this AD. A statement of terminating action is unnecessary.

Request To Clarify Compliance

MTU commented that this AD describes actions to be performed if damage is found, but does not describe actions to be performed when damage is not found as specified in CFM SB CFM56-7B S/B 72-1054, Revision 01, dated January 15, 2020. MTU asked if the AD could reference action that needs to be performed when the engine is inducted and disassembled for reasons other than HPT inner stationary seal issue and damage (or no damage) is found.

The FAA disagrees with requiring actions that are not related to the unsafe condition described in this AD. The HPT inner stationary seal is not typically exposed unless the engine is undergoing an engine shop visit. However, if damage to the HPT inner stationary seal is found during inspections not related to this AD, the ESM provides criteria to determine appropriate action.

Request To Incorporate AC 20-176A in Service Information

AAL and Delta requested that CFM incorporate AC 20-176A into both CFM SB CFM56-5B S/B 72-0952, Revision 01, dated January 15, 2020, and CFM SB CFM56-7B S/B 72-1054, Revision 01, dated January 15, 2020, for the purpose of "... distinguishing which steps in an SB will have a direct effect on detecting, preventing, resolving, or eliminating the unsafe condition identified in an AD." The commenters reasoned that CFM should identify the steps required for compliance (RC) in the service information. AAL added that the RC designation reduces global AMOCs and streamlines the accomplishment of key tasks while meeting strict regulatory compliance.

The FAA agrees that adding the RC designation to the required service information steps provides clarity to the operators. CFM added the RC designation to CFM SB CFM56-5B S/B 72-0952, Revision 01, dated January 15, 2020, and CFM SB CFM56-7B S/B 72-1054, Revision 01, dated January 15, 2020. The FAA did not change this AD.

Request To Update References to the ESM

Delta requested that the FAA update paragraphs (c)(2) and (h)(2) of this AD to reference the CFM56-5B ESM and the CFM56-7B ESM entirely, rather than specific repair tasks within the ESMs. Delta reasoned that the CFM56-5B ESM and CFM56-7B ESM might change in future revisions.

The FAA disagrees with changing the references from the specific repair tasks. Paragraph (c)(2), Applicability, and paragraph (h)(2), Definitions, of this AD refer to specific repair tasks within CFM56-5B ESM and CFM56-7B ESM that are required to return a HPT inner stationary seal to service. The FAA did not change this AD, but will consider requests for AMOCs if the repair tasks change in future revisions of the ESM.

Comment on Revising Service Information

CFM stated that they would update CFM SB CFM56-5B S/B 72-0952 and CFM SB CFM56-7B S/B 72-1054 based on feedback from operators. CFM indicated it would update the definition of "shop visit" to clarify that replacing a fan disk is not considered a shop visit. CFM further indicated

that it would clarify that if honeycomb separation is found, then the HPT blades may be scrapped or overhauled. Finally, CFM noted that it would revise the SBs by adding “RC” to those tasks required for compliance.

The FAA notes that it has revised this AD by referring to CFM SB CFM56-5B S/B 72-0952, Revision 01, dated January 15, 2020, and CFM SB CFM56-7B S/B 72-1054, Revision 01, dated January 15, 2020. In addition, the FAA has reviewed the changes included in Revision 01 of these SBs and determined that these are clarifying changes only and impose no additional burden to operators.

Request To Allow Use of Later Revisions of Service Information

AAL and Delta requested that the FAA add the phrase “or later” when referencing the service information in this AD. AAL stated that specifying “or later” could prevent numerous requests for alternative methods of compliance (AMOCs) if the manufacturer revises the service information. AAL also stated that this request aligns with paragraph 2-3.d of Advisory Circular No. 20-176A, “Service Bulletins Related to Airworthiness Directives and Indicating FAA Approval on Service Documents,” dated June 16, 2014 (AC 20-176A).

The FAA disagrees with adding language that allows the use of later revisions of service information when performing the required actions of this AD. Later revisions of the service information have not been reviewed by the FAA. As noted, however, in a previous comment response, the FAA has revised this AD by referring to the latest published revisions of the referenced service information.

Support for No Reporting Requirement

AAL expressed support for the No Reporting Requirement in paragraph (i) of this AD.

Support for the AD

ALPA and Boeing expressed support for the AD as written.

Conclusion

The FAA reviewed the relevant data, considered any comments received, and determined that air safety requires adopting this AD as proposed. Accordingly, the FAA is issuing this AD to address the unsafe condition on these products. Except for minor editorial changes and any other changes described previously, this AD is adopted as proposed in the NPRM. None of the changes will increase the economic burden on any operator.

Related Service Information Under 1 CFR Part 51

The FAA reviewed CFM SB CFM56-5B S/B 72-0952, Revision 01, dated January 15, 2020, and CFM SB CFM56-7B S/B 72-1054, Revision 01, dated January 15, 2020. CFM SB CFM56-5B S/B 72-0952, Revision 01, describes procedures for repairing the CFM56-5B turbofan engine HPT inner stationary seal honeycomb. CFM SB CFM56-7B S/B 72-1054, Revision 01, describes procedures for repairing the CFM56-7B turbofan engine HPT inner stationary seal honeycomb. 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 ADDRESSES.

Costs of Compliance

The FAA estimates that this AD affects 210 engines installed on airplanes of U.S. registry. Operators have the option to replace or repair the affected HPT inner stationary seal. The part cost is for replacement with a repaired HPT inner stationary seal.

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
Replace HPT inner stationary seal	1 work-hour × \$85 per hour = \$85	\$7,910	\$7,995	\$1,678,950
Inspect HPT inner stationary seal	1 work-hour × \$85 per hour = \$85	\$0	\$85	\$17,850

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

On-Condition Costs

Action	Labor cost	Parts cost	Cost per product
Replace rotating air HPT front seal	1 work-hour × \$85 per hour = \$85	\$344,600	\$344,685
Replace HPT rotor blades (pair)	1 work-hour × \$85 per hour = \$85	\$31,000	\$31,085
Replace No. 3 ball bearing	1 work-hour × \$85 per hour = \$85	\$30,000	\$30,085

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:



2021-10-09 CFM International, S.A.: Amendment 39-21542; Docket No. FAA-2019-0568; Project Identifier 2019-NE-20-AD.

(a) Effective Date

This airworthiness directive (AD) is effective June 24, 2021.

(b) Affected ADs

None.

(c) Applicability

(1) This AD applies to all CFM International, S.A. (CFM) CFM56-5B1, -5B1/2P, -5B1/3, -5B1/P, -5B2, -5B2/2P, -5B2/3, -5B2/P, -5B3/2P, -5B3/2P1, -5B3/3, -5B3/3B1, -5B3/P, -5B3/P1, -5B4, -5B4/2P, -5B4/2P1, -5B4/3, -5B4/3B1, -5B4/P, -5B4/P1, -5B5, -5B5/3, -5B5/P, -5B6, -5B6/2P, -5B6/3, -5B6/P, -5B7, -5B7/3, -5B7/P, -5B8/3, -5B8/P, -5B9/2P, -5B9/3, -5B9/P, CFM56-7B20, -7B20/2, -7B20/3, -7B20E, -7B22, -7B22/2, -7B22/3, -7B22/3B1, -7B22/B1, -7B22E, -7B22E/B1, -7B24, -7B24/2, -7B24/3, -7B24/3B1, -7B24/B1, -7B24E, -7B24E/B1, -7B26, -7B26/2, -7B26/3, -7B26/3B1, -7B26/3B2, -7B26/3B2F, -7B26/3F, -7B26/B1, -7B26/B2, -7B26E, -7B26E/B1, -7B26E/B2, -7B26E/B2F, -7B26E/F, -7B27, -7B27/2, -7B27/3, -7B27/3B1, -7B27/3B1F, -7B27/3B3, -7B27/3F, -7B27/B1, -7B27/B3, -7B27A, -7B27A/3, -7B27AE, -7B27E, -7B27E/B1, -7B27E/B1F, -7B27E/B3, and -7B27E/F model turbofan engines with a high-pressure turbine (HPT) inner stationary seal, part number (P/N) 1808M56G01 installed that has a serial number (S/N) listed in Planning Information, Paragraph 1.A., Table 1, of CFM Service Bulletin (SB) CFM56-5B S/B 72-0952, Revision 01, dated January 15, 2020, or in Planning Information, Paragraph 1.A., Table 1, CFM SB CFM56-7B S/B 72-1054, Revision 01, dated January 15, 2020, installed.

(2) This AD does not apply to affected CFM CFM56-5B and CFM56-7B model turbofan engines with the affected HPT inner stationary seal installed if the seal has been repaired as specified in CFM56-5B Engine Shop Manual (ESM), 72-41-03, REPAIR 003, or CFM56-7B ESM, 72-41-03, REPAIR 003, after the year listed in Paragraph 1.A., Table 1, of CFM SB CFM56-5B S/B 72-0952, Revision 01, dated January 15, 2020, or Paragraph 1.A., Table 1, CFM SB CFM56-7B S/B 72-1054, Revision 01, dated January 15, 2020.

(d) Subject

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

(e) Unsafe Condition

This AD was prompted by cracks found in the rotating air HPT front seal. The FAA is issuing this AD to prevent failure of the HPT inner stationary seal and the rotating air HPT front seal. The unsafe condition, if not addressed, could result in uncontained release of the rotating air HPT front seal, 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) At the next engine shop visit after the effective date of this AD, remove the affected HPT inner stationary seal and replace with a HPT inner stationary seal that is eligible for installation.

(2) After removing the affected HPT inner stationary seal required by paragraph (g)(1), inspect the removed HPT inner stationary seal for honeycomb separation, as defined in the Accomplishment Instructions, paragraph 3.C.(1), in CFM SB CFM56-5B S/B 72-0952, Revision 01, dated January 15, 2020, or in CFM SB CFM56-7B S/B 72-1054, Revision 01, dated January 15, 2020.

(3) If honeycomb separation is found during the inspection required by paragraph (g)(2) of this AD, before further flight:

(i) Remove the rotating air HPT front seal from service and replace with a rotating air HPT front seal that is eligible for installation.

(ii) Remove the HPT rotor blades and replace them with HPT rotor blades eligible for installation.

(iii) Remove the No. 3 ball bearing from service and replace with a No. 3 ball bearing eligible for installation.

(h) Definitions

(1) For the purpose of this AD, an “engine shop visit” is the induction of an engine into the shop for maintenance involving the separation of pairs of major mating engine case flanges, except for the following situations, which do not constitute an engine shop visit.

(i) Separation of engine flanges solely for the purpose of transportation of the engine without subsequent maintenance.

(ii) Separation of engine flanges solely for the purpose of replacing the fan or propulsor without subsequent maintenance.

(2) For the purpose of this AD, an HPT inner stationary seal that is eligible for installation is an HPT inner stationary seal:

(i) That is not listed in Planning Information, Paragraph 1.A., Table 1, of CFM SB CFM56-5B S/B 72-0952, Revision 01, dated January 15, 2020, or in Planning Information, Paragraph 1.A., Table 1, CFM SB CFM56-7B S/B 72-1054, Revision 01, dated January 15, 2020; or

(ii) with a P/N 1808M56G01 and with a S/N listed in Paragraph 1.A., Table 1, of CFM SB CFM56-5B S/B 72-0952, Revision 01, dated January 15, 2020, or Paragraph 1.A., Table 1, CFM SB CFM56-7B S/B 72-1054, Revision 01, dated January 15, 2020, that has been repaired per CFM56-5B ESM, 72-41-03, REPAIR 003, or CFM56-7B ESM, 72-41-03, REPAIR 003, after the year listed in Paragraph 1.A., Table 1, of CFM SB CFM56-5B S/B 72-0952, Revision 01, dated January 15, 2020, or Paragraph 1.A., Table 1, CFM SB CFM56-7B S/B 72-1054, Revision 01, dated January 15, 2020.

(3) For the purpose of this AD, a rotating air HPT front seal that is eligible for installation is any rotating air HPT front seal that was not removed from service as a result of the inspection of the HPT inner stationary seal required by paragraph (g)(2) of this AD in which there was a finding of honeycomb separation.

(4) For the purpose of this AD, HPT rotor blades eligible for installation are new HPT rotor blades with zero flight hours since new or HPT rotor blades that have been inspected and returned to a serviceable condition using approved engine manual requirements.

(5) For the purpose of this AD, a No. 3 ball bearing eligible for installation is any No. 3 ball bearing that was not removed from service as a result of the inspection of the HPT inner stationary seal required by paragraph (g)(2) of this AD in which there was a finding of honeycomb separation.

(i) No Reporting Requirement

The reporting requirements contained within the SBs referenced in paragraph (g) of this AD are not required by this AD.

(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 Related Information. 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 Christopher McGuire, Aviation Safety Engineer, ECO Branch, FAA, 1200 District Avenue, Burlington, MA 01803; phone: (781) 238-7120; fax: (781) 238-7199; email: chris.mcguire@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) CFM Service Bulletin CFM56-5B S/B 72-0952, Revision 01, dated January 15, 2020.

(ii) CFM Service Bulletin CFM56-7B S/B 72-1054, Revision 01, dated January 15, 2020.

(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, 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.

(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, or go to: <https://www.archives.gov/federal-register/cfr/ibr-locations.html>.

Issued on April 29, 2021.

Lance T. Gant,

Director, Compliance & Airworthiness Division, Aircraft Certification Service.

[FR Doc. 2021-10607 Filed 5-19-21; 8:45 am]