



Notification of a Proposal to issue an Airworthiness Directive

PAD No.: 23-124

Issued: 17 November 2023

Note: This Proposed Airworthiness Directive (PAD) is issued by EASA, acting in accordance with Regulation (EU) 2018/1139 on behalf of the European Union, its Member States and of the European third countries that participate in the activities of EASA under Article 129 of that Regulation.

In accordance with the EASA Continuing Airworthiness Procedures, the Executive Director is proposing the issuance of an EASA Airworthiness Directive (AD), applicable to the aeronautical product(s) identified below.

All interested persons may send their comments, referencing the PAD Number above, to the e-mail address specified in the 'Remarks' section, prior to the consultation date indicated.

Design Approval Holder's Name:

CFM INTERNATIONAL S.A.

Type/Model designation(s):

CFM56-5B, CFM56-5C and CFM56-7B engines

Effective Date: [TBD - standard: 14 days after AD issue date]

TCDS Number(s): EASA.E.003 and EASA.E.004

Foreign AD: Not applicable

Supersedure: This AD supersedes EASA AD 2020-0044 dated 03 March 2020.

ATA 72 – Engine – High-Pressure Turbine Inner Stationary Seal – Inspection

Manufacturer(s):

SAFRAN Aircraft Engines, formerly SNECMA (France); General Electric Aviation (United States)

Applicability:

CFM56-5B1, CFM56-5B1/2P, CFM56-5B1/3, CFM56-5B1/P, CFM56-5B2, CFM56-5B2/2P, CFM56-5B2/3, CFM56-5B2/P, CFM56-5B3/2P, CFM56-5B3/2P1, CFM56-5B3/3, CFM56-5B3/3B1, CFM56-5B3/P, CFM56-5B3/P1, CFM56-5B4, CFM56-5B4/2P, CFM56-5B4/2P1, CFM56-5B4/3, CFM56-5B4/3B1, CFM56-5B4/P, CFM56-5B4/P1, CFM56-5B5, CFM56-5B5/3, CFM56-5B5/P, CFM56-5B6, CFM56-5B6/2P, CFM56-5B6/3, CFM56-5B6/P, CFM56-5B7, CFM56-5B7/3, CFM56-5B7/P, CFM56-5B8/3, CFM56-5B8/P, CFM56-5B9/2P, CFM56-5B9/3 and CFM56-5B9/P engines, all serial numbers (s/n);

CFM56-5C2, CFM56-5C2/4, CFM56-5C2/F, CFM56-5C2/F4, CFM56-5C2/G, CFM56-5C2/G4, CFM56-5C2/P, CFM56-5C3/F, CFM56-5C3/F4, CFM56-5C3/G, CFM56-5C3/G4, CFM56-5C3/P, CFM56-5C4, CFM56-5C4/1, CFM56-5C4/P and CFM56-5C4/1P engines, all s/n; and

CFM56-7B20, CFM56-7B20/2, CFM56-7B20/3, CFM56-7B20E, CFM56-7B22, CFM56-7B22/2, CFM56-7B22/3, CFM56-7B22/3B1, CFM56-7B22/B1, CFM56-7B22E, CFM56-7B22E/B1, CFM56-7B24, CFM56-7B24/2, CFM56-7B24/3, CFM56-7B24/3B1, CFM56-7B24/B1, CFM56-7B24E,



CFM56-7B24E/B1, CFM56-7B26, CFM56-7B26/2, CFM56-7B26/3, CFM56-7B26/3B1, CFM56-7B26/3B2, CFM56-7B26/3B2F, CFM56-7B26/3F, CFM56-7B26/B1, CFM56-7B26/B2, CFM56-7B26E, CFM56-7B26E/B1, CFM56-7B26E/B2, CFM56-7B26E/B2F, CFM56-7B26E/F, CFM56-7B27, CFM56-7B27/2, CFM56-7B27/3, CFM56-7B27/3B1, CFM56-7B27/3B1F, CFM56-7B27/3B3, CFM56-7B27/3F, CFM56-7B27/B1, CFM56-7B27/B3, CFM56-7B27A, CFM56-7B27A/3, CFM56-7B27AE, CFM56-7B27E, CFM56-7B27E/B1, CFM56-7B27E/B1F, CFM56-7B27E/B3 and CFM56-7B27E/F engines, all s/n.

These engines are known to be installed on, but not limited to, Airbus A318, A319, A320, A321 and A340 aeroplanes, and Boeing 737-600, 737-700, 737-800, 737-900 and 737-900ER series aeroplanes.

Definitions:

For the purpose of this AD, the following definitions apply:

The applicable SB: CFM International S.A. (CFMI) Service Bulletin (SB) CFM56-5C SB 72-0796 revision (rev.) 02, CFM56-5B SB 72-0952 rev. 02 and CFM56-7B SB 72-1054 rev. 02, as applicable.

Affected seal: High-pressure turbine (HPT) inner stationary seals, having Part Number (P/N) 1808M56G01 and an s/n as listed in Table 1 of the applicable SB, except those that, after 31 December 2012, had a honeycomb replacement in accordance with the instructions of the applicable repair 003.

Applicable repair 003: CFM56-5B engine shop manual (ESM), 72-41-03, repair 003; CFM56-5C ESM, 72-41-03 repair 003; and CFM56-7B ESM, 72-41-03, repair 003, as applicable.

Groups: Group 1a engines are those that have an affected seal installed, except those which are Group 1b.

Group 1b engines are those that have an affected seal installed, which had a honeycomb replacement in accordance with the instructions of the applicable repair 003 accomplished between 01 January 2006 and 31 December 2012 (inclusive).

Group 2 engines are those that do not have an affected seal installed.

Engine shop visit: Induction of an engine into the shop for maintenance involving the separation of pairs of major mating engine case flanges. Separation of engine flanges solely for the purpose of transportation without subsequent maintenance does not constitute an engine shop visit.

Reason:

Occurrences have been reported of finding cracks in the rotating air HPT front seal. Subsequent investigations identified a batch of HPT inner stationary seals which, as a consequence of an in-service honeycomb replacement, could release material that leads to the damage to the rotating air HPT front seal.

This condition, if not corrected, could lead to uncontained release of the rotating air HPT front seal, damage to the engine, and damage to the aeroplane.



To address this potential unsafe condition, CFMI issued the original issue of the applicable SB, later revised, providing instructions to inspect the affected seals, and EASA issued AD 2020-0044 to require a one-time in-shop inspection of each affected seal, its replacement with a not affected one and, depending on inspection findings, accomplishment of applicable additional corrective actions.

Since that AD was issued, it was determined that certain HPT inner stationary seals, which had a honeycomb replacement accomplished between 2006 and 2012, and were identified as non-affected seals, also must be inspected. Consequently, CFMI revised the applicable SB, now at revision 02, to clarify that only those HPT inner stationary seals, which had the applicable repair 003 accomplished after 31 December 2012, are not affected parts.

For the reason described above, this AD retains the requirement of EASA AD 2020-0044, which is superseded, and requires inspection of an additional batch of HPT inner stationary seals.

Required Action(s) and Compliance Time(s):

Required as indicated, unless accomplished previously:

Inspection:

- (1) For Group 1a engines: During the next engine shop visit after 17 March 2020 [the effective date of EASA AD 2020-0044], inspect the affected seal in accordance with the instructions of the applicable SB.
- (2) For Group 1b engines: During the next engine shop visit after the effective date of this AD, inspect the affected seal in accordance with the instructions of the applicable SB.

Corrective Action(s):

- (3) If, during the inspection as required by paragraph (1) or (2) of this AD, as applicable, honeycomb separation is detected, before release to service of that engine, accomplish the actions as required by paragraphs (3.1) to (3.4) of this AD in accordance with the instructions of the applicable SB.
 - (3.1) Replace the affected seal with a not affected one (see Note 1 of this AD).
 - (3.2) Replace the rotating air HPT front seal with a serviceable one.
 - (3.3) Replace the HPT rotor blades with serviceable ones.
 - (3.4) Remove from service the No. 3 ball bearing.
- (4) If, during the inspection as required by paragraph (1) or (2) of this AD, as applicable, no honeycomb separation is detected, before release to service of that engine, replace the affected seal with a not affected one in accordance with the instructions of the applicable SB (see Note 1 of this AD).

Note 1: Following accomplishment of the applicable repair 003 after 31 December 2012, an HPT inner stationary seal is a not affected seal.



Credit:

- (5) Inspections and corrective actions, accomplished on an engine before the effective date of this AD in accordance with the original issue or of rev. 01 of the applicable SB, are acceptable to comply with the requirements of paragraphs (1) to (4) of this AD, as applicable, for that engine.

Parts Installation:

- (6) Do not install on any engine an affected seal, as required by paragraph (6.1) or (6.2) of this AD, as applicable.

(6.1) For Group 1a and Group 1b engines: After accomplishment of the corrective actions on the engine as required by paragraph (3) or (4) of this AD, as applicable.

(6.2) For Group 2 engines: From the effective date of this AD.

Ref. Publications:

CFM International S.A. CFM56-5C SB 72-0796 original issue dated 26 April 2019, or rev. 01 dated 15 January 2020, or rev. 02 dated 10 August 2022.

CFM International S.A. CFM56-5B SB 72-0952 original issue dated 23 April 2019, or rev. 01 dated 15 January 2020, or rev. 02 dated 10 August 2022.

CFM International S.A. CFM56-7B SB 72-1054 original issue dated 23 April 2019, or rev. 01 dated 17 January 2020, or rev. 02 dated 10 August 2022.

The use of later approved revisions of the above-mentioned documents is acceptable for compliance with the requirements of this AD.

Remarks:

1. This Proposed AD will be closed for consultation on 15 December 2023.
2. Enquiries regarding this PAD should be referred to the EASA Safety Information Section, Certification Directorate. E-mail: ADs@easa.europa.eu.
3. Information about any failures, malfunctions, defects or other occurrences, which may be similar to the unsafe condition addressed by this PAD, and which may occur, or have occurred on a product, part or appliance not affected by this PAD, can be reported to the [EU aviation safety reporting system](#). This may include reporting on the same or similar components, other than those covered by the design to which this PAD applies, if the same unsafe condition can exist or may develop on an aircraft with those components installed. Such components may be installed under an FAA Parts Manufacturer Approval (PMA), Supplemental Type Certificate (STC) or other modification.
4. For any question concerning the technical content of the requirements in this PAD, please contact: CFM International S.A., Customer Support Centre, Telephone: +33 1 64 14 88 66, Fax: +33 1 64 79 85 55, E-mail: cfm.csc@safrangroup.com,



or

CFM Inc., GE Aviation Fleet Support, Telephone: +1 513-552-3272 or +1 877-432-3272, E-mail:
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