



Notification of a Proposal to issue an Airworthiness Directive

PAD No.: 20-178

Issued: 06 November 2020

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 engines

Effective Date: [TBD – Standard: 14 days after AD issue date]

TCDS Number(s): EASA.E.003

Foreign AD: Not applicable

Supersedure: This AD supersedes EASA AD 2016-0039 dated 29 February 2016.

ATA 72 – Engine – Low Pressure Turbine Rear Frames – Inspection / Replacement

Manufacturer(s):

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

Applicability:

CFM56-5B1, CFM56-5B1/P, CFM56-5B2, CFM56-5B2/P, CFM56-5B3/P, CFM56-5B3/P1, CFM56-5B4, CFM56-5B4/P, CFM56-5B4/P1, CFM56-5B5, CFM56-5B5/P, CFM56-5B6, CFM56-5B6/P, CFM56-5B7, CFM56-5B7/P, CFM56-5B8/P and CFM56-5B9/P engines, all serial numbers.

These engines are known to be installed on, but not limited to, Airbus A318, A319, A320 and A321 aeroplanes.

Definitions:

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

The SB: CFM International S. A. (CFMI) CFM56-5B Service Bulletin (SB) 72-0850.

Affected part: Turbine rear frames (TRF), having Part Number (P/N) 338-102-907-0 or P/N 338-102-908-0.



Serviceable part: Any TRF which is not an affected part; or an affected part on which no cumulative crack having a length of 0.25 inches or more (see Note 2 of this AD) is found at any TRF mount strut location.

Reason:

The design approval holder performed an analysis of the service lives of certain TRF, P/N 338-102-907-0 and P/N 338-102-908-0, installed on the low-pressure turbine (LPT) frame assembly of CFM56-5B engines. This resulted in the need to correct the lives of those parts.

This condition, if not detected and corrected, could lead to failure of a TRF on the LPT frame assembly, possibly resulting in engine separation, with consequent reduced control of the aeroplane and injury to persons on the ground; or damage to the engine, with consequent damage to the aeroplane.

To address this potential unsafe condition, CFMI issued the SB to provide inspection instructions, and EASA issued AD 2016-0039, to require repetitive inspections of affected parts and, depending on findings, replacement with serviceable parts, as defined in this AD.

Since that AD was issued, an error was detected in the compliance time (Table 2).

For the reason described above, this AD retains the requirements of EASA AD 2016-0039, which is superseded, but requires accomplishment of the repetitive inspections on Post-SB 72-0308 (corporate) engines at reduced intervals.

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

Required as indicated, unless accomplished previously:

Initial Inspection:

- (1) Within the compliance time specified in Table 1 of this AD, as applicable to engine configuration (commercial or corporate operation), accomplish an on-wing or in-shop eddy current inspection (ECI) or a fluorescent penetrant inspection (FPI) of the mount struts of each affected part installed on the LPT assembly, in accordance with the instructions of paragraph 3.B (ECI) or paragraph 3.C (FPI) of the SB.

Table 1 – Initial Inspection

| Engine Configuration | Compliance Time |
|--|---|
| Post-SB 72-0308 (corporate) | Before exceeding 25 000 cycles since new (CSN) on the TRF of the LPT frame assembly, or within 150 cycles after 01 March 2016 [the effective date of EASA AD 2016-0039], whichever occurs later |
| Pre-SB 72-0308 or post-SB 72-0309 (commercial) | Before exceeding 32 000 CSN on the TRF of the LPT frame assembly, or within 150 cycles after 01 March 2016 [the effective date of EASA AD 2016-0039], whichever occurs later |
| Any configuration, if TRF CSN are unknown | Within 150 cycles after 01 March 2016 [the effective date of EASA AD 2016-0039] |



Note 1: CFM56-5B SB 72-0308 provides instructions to modify an engine for 'corporate' aeroplane operation. Conversely, CFM56-5B SB 72-0309 provides instructions to modify an engine for 'commercial' aeroplane operation.

Repetitive Inspections:

- (2) Within the compliance times specified in Table 2 or Table 3 of this AD, as applicable, depending on engine configuration and findings, re-inspect the engine in accordance with the instructions of paragraph 3.B (ECI) or paragraph 3.C (FPI) of the SB.

Table 2 – Post-SB 72-0308 (corporate) engines

| Finding(s) | Inspection Interval |
|---|---|
| No cracks found on each of the three TRF mount struts | Within 1 670 cycles after the initial inspection, or before exceeding 25 000 CSN on the TRF of the LPT assembly, whichever occurs later, and, thereafter, at intervals not to exceed 1 670 cycles since last inspection (CSLI). The first repeat inspection accomplished after the effective date of this AD may be deferred up to 150 cycles after the effective date of this AD. |
| Cumulative crack length (see Note 2 of this AD) found at each TRF mount strut location is none, or less than 0.20 inches | Within 1 670 CSLI |
| Cumulative crack length (see Note 2 of this AD) found at any TRF mount strut location is equal to or more than 0.20 inches, but less than 0.25 inches | Within 280 CSLI |

Note 2: After any cracks are repaired, the TRF mount strut repaired crack lengths should not be included in the cumulative crack length.

Table 3 – Pre-SB 72-0308 or post-SB 72-0309 (commercial) engines

| Finding(s) | Inspection Interval |
|---|--|
| No cracks found on each of the three TRF mount struts | Within 2 500 CSLI, or before exceeding 32 000 CSN on the TRF of the LPT assembly, whichever occurs later, and, thereafter, at intervals not to exceed 2 500 CSLI |
| Cumulative crack length (see Note 2 of this AD) found at each TRF mount strut location is none, or less than 0.20 inches | Within 2 500 CSLI |
| Cumulative crack length (see Note 2 of this AD) found at any TRF mount strut location is equal to or more than 0.20 inches, but less than 0.25 inches | Within 370 CSLI |



Corrective Action(s):

- (3) If, during any inspection as required by paragraph (1) or (2) of this AD, as applicable, the cumulative length of cracks (see Note 2 of this AD) found at any TRF mount strut location is 0.25 inches or more, before next flight, or before release to service of the engine, as applicable, replace the TRF with a serviceable part, as defined in this AD.

Terminating action(s):

- (4) Replacement of a TRF on an engine, as required by paragraph (3) of this AD, with an affected part, does not constitute terminating action for the repetitive inspections as required by this AD for that engine.
- (5) Replacement of a TRF on an engine, as required by paragraph (3) of this AD, with a TRF which is not an affected part, constitutes terminating action for the repetitive inspections as required by this AD for that engine, provided that, following that replacement, no affected part is (re)installed on that engine.

Part(s) installation:

- (6) From the effective date of this AD, it is allowed to install on any engine an affected part, provided that it is a serviceable part, as defined in this AD, and that, following installation, that engine is inspected as required by this AD.

Engine Conversion:

- (7) Concurrently with modification (conversion) of an engine from pre-SB 72-0308 to post-SB 72-0308, or from post-SB 72-0308 to post-SB 72-0309, as applicable, adjust the compliance time(s) for the repeat inspections as required by paragraph (2) of this AD for that engine, as specified in Table 2 or Table 3 of this AD, as applicable.

Ref. Publications:

CFMI CFM56-5B SB 72-0308 Revision 5 dated 12 October 2007.

CFMI CFM56-5B SB 72-0309 Revision 5 dated 12 October 2007.

CFMI CFM56-5B SB 72-0850 dated 19 December 2012 and Revision 1 dated 16 August 2018.

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 04 December 2020.
2. Enquiries regarding this PAD should be referred to the EASA Programming and Continued Airworthiness 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, as applicable:

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.

CFM Inc. Aviation Operations Centre, Telephone: +1 513-552-3272, or +1 877-432-3272,
Fax: +1 877-432-3329, E-mail: geae.aoc@ge.com, or aviation.fleetsupport@ge.com.

