



Airworthiness Directive

AD No.: 2016-0039

Issued: 29 February 2016

Note: This Airworthiness Directive (AD) is issued by EASA, acting in accordance with Regulation (EC) 216/2008 on behalf of the European Union, its Member States and of the European third countries that participate in the activities of EASA under Article 66 of that Regulation.

This AD is issued in accordance with Regulation (EU) 748/2012, Part 21.A.3B. In accordance with Regulation (EU) 1321/2014 Annex I, Part M.A.301, the continuing airworthiness of an aircraft shall be ensured by accomplishing any applicable ADs. Consequently, no person may operate an aircraft to which an AD applies, except in accordance with the requirements of that AD, unless otherwise specified by the Agency [Regulation (EU) 1321/2014 Annex I, Part M.A.303] or agreed with the Authority of the State of Registry [Regulation (EC) 216/2008, Article 14(4) exemption].

Design Approval Holder's Name:

CFM INTERNATIONAL S.A.

Type/Model designation(s):

CFM56-5B engines

Effective Date: 01 March 2016

TCDS Number(s): EASA.E.003

Foreign AD: Not applicable

Supersedure: None

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

Manufacturer(s):

SNECMA (France), General Electric Aircraft Engines (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.

Reason:

The design approval holder performed an analysis of the service lives of certain turbine rear frames (TRF), part number (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, CFM International S.A. (CFM) issued CFM56-5B Service Bulletin (SB) No. 72-0850 (hereafter referred to as 'the SB' in this AD) to provide inspection instructions.

For the reasons described above, this AD requires repetitive inspections of affected TRFs and, depending on findings, replacement with serviceable parts.

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 TRF having P/N 338-102-907-0 or P/N 338-102-908-0, as applicable, 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 the effective date of this AD, 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 the effective date of this AD, whichever occurs later
Any configuration, if TRF CSN are unknown	Within 150 cycles after the effective date of this AD

Note 1: CFM56-5B SB No. 72-0308 provides instructions to modify an engine for 'corporate' aeroplane operation. Conversely, CFM56-5B SB No. 72-0309 provides instructions to modify an engine for 'commercial' aeroplane operation.

Repeat 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)	Interval
No cracks found on any 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 2 500 cycles since last inspection (CSLI)
Cumulative crack length (see Note 2 of this AD) found at any TRF mount strut location is 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 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 any 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 any TRF mount strut location is 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:

- (4) If during any inspection as required by paragraph (1) or (2) of this AD, 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.
- (5) Replacement of a TRF on an engine, as required by paragraph (4) of this AD, if the P/N of the replacement TRF is P/N 338-102-907-0 or P/N 338-102-908-0, does not constitute terminating action for the repetitive inspections as required by this AD for that engine.



Installation of a Replacement Part:

- (6) From the effective date of this AD, it is allowed to install on any engine a TRF, having P/N 338-102-907-0 or P/N 338-102-908-0, provided 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:

CFM International S. A. CFM56-5B SB No. 72-0308 Revision 5, dated 12 October 2007.

CFM International S. A. CFM56-5B SB No. 72-0309 Revision 5, dated 12 October 2007.

CFM International S. A. CFM56-5B SB No. 72-0850, dated 19 December 2012.

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

Remarks:

1. If requested and appropriately substantiated, EASA can approve Alternative Methods of Compliance for this AD.
2. Based on the required actions and the compliance time, EASA have decided to issue a Final AD with Request for Comments, postponing the public consultation process until after publication.
3. Enquiries regarding this AD should be referred to the EASA Safety Information Section, Certification Directorate. E-mail: ADs@easa.europa.eu.
4. For any question concerning the technical content of the requirements in this AD, please contact, as applicable:

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