# Emergency Airworthiness Directive

**AD No.: 2018-0093-E**

**Issued: 20 April 2018**

Note: This Emergency 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):**

CFM56-7B engines

Effective Date: 20 April 2018

TCDS Number(s): EASA.E.004

Foreign AD: Not applicable

Supersedure: This AD supersedes EASA AD 2018-0071 dated 26 March 2018.

## ATA 72 – Engine – Fan Blades – Inspection

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**Manufacturer(s):**

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

**Applicability:**

CFM56-7B20, CFM56-7B22, CFM56-7B22/B1, CFM56-7B24, CFM56-7B24/B1, CFM56-7B26, CFM56-7B26/B1, CFM56-7B26/B2, CFM56-7B27, CFM56-7B27/B1, CFM56-7B27/B3, CFM56-7B20/2, CFM56-7B22/2, CFM56-7B24/2, CFM56-7B26/2, CFM56-7B27/2, CFM56-7B20/3, CFM56-7B22/3, CFM56-7B22/3B1, CFM56-7B24/3, CFM56-7B24/3B1, CFM56-7B26/3, CFM56-7B26/3B1, CFM56-7B26/3B2, CFM56-7B27/3, CFM56-7B27/3B1, CFM56-7B27/3B1F, CFM56-7B27/3B3, CFM56-7B26/3F, CFM56-7B26/3B2F, CFM56-7B27/3F, CFM56-7B20E, CFM56-7B22E, CFM56-7B22E/B1, CFM56-7B24E, CFM56-7B24E/B1, CFM56-7B26E, CFM56-7B26E/B1, CFM56-7B26E/B2, CFM56-7B27E, CFM56-7B27E/B1, CFM56-7B27E/B3, CFM56-7B26E/F, CFM56-7B26E/B2F, CFM56-7B27E/F, CFM56-7B27E/B1F, CFM56-7B27A, CFM56-7B27AE and CFM56-7B27A/3 engines, all serial numbers.

These engines are known to be installed on, but not limited to, Boeing 737-600, 737-700, 737-800 and 737-900 aeroplanes.

**Definitions:**

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

**The S/B**: CFM International CFM56-7B Service Bulletin (S/B) 72-1033.

**Affected fan blade**: Fan blades, Part Number (P/N) 340-001-022-0, P/N 340-001-026-0, P/N 340-001-027-0, P/N 340-001-028-0, P/N 340-001-029-0, P/N 340-001-036-0, P/N 340-001-037-0, P/N 340-001-038-0, and P/N 340-001-039-0.

**Serviceable fan blade**: Fan blades that are not an affected fan blade; or an affected fan blade which is new; or an affected fan blade which has accumulated less than 20 000 engine cycles (EC) since new (first installation on an engine), or which, within the last 300 EC before installation, passed an inspection (no defects found) in accordance with the instructions of the S/B, or of CFM56-7B S/B 72-1019, or of CFM56-7B S/B 72-1024, or an eddy current inspection (ECI) in accordance with the applicable CFM International Engine Shop Manual (ESM) at Revision 55 (or later), task 72-21-01-200-001

## Reason:

An occurrence was reported of fan blade failure on a CFM56-7B engine. The released fan blade was initially contained by the engine case, but there was subsequent uncontained forward release of debris and separation of the inlet cowl. Preliminary investigation determined that the event was due to a fracture in the blade, which had initiated from the fan blade dovetail.

This condition, if not detected and corrected, could lead to fan blade failure, possibly resulting in uncontained forward release of debris, with consequent damage to the engine and the aeroplane.

To address this potential unsafe condition, CFM International initially issued CFM56-7B S/B 72-1019 (later revised) and CFM56-7B S/B No. 72-1024, providing inspection instructions, and EASA issued AD 2018-0071 requiring a one-time inspection of certain fan blades, and, depending on findings, accomplishment of applicable corrective action(s).

Since that AD was issued, a further failure of a fan blade of a CFM56-7B engine has been reported. Prompted by this event, CFM International issued CFM56-7B S/B 72-1033, providing instructions for initial and repetitive inspections of all fan blades.

For the reason stated above, this AD supersedes AD 2018-0071, requires initial and repetitive inspections of fan blades and, depending on findings, accomplishment of applicable corrective action(s).

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

Required as indicated, unless accomplished previously:

**Inspection**:

(1) Within the compliance time as defined in Table 1 of this AD, and, thereafter, at intervals not exceeding 3 000 EC, accomplish an ultrasonic inspection of each affected fan blade in accordance with the instructions of the S/B.

Table 1 – Initial Inspection of Affected Fan Blades (see Notes 1 and 2 of this AD)

| EC | Fan Blade Cycles | Compliance Time |
|---|---|---|
| 30 000 or more | any | Within 20 days after the effective date of this AD |
| Less than 30 000 | unknown | Within 133 days after the effective date of this AD |
| | 20 000 or more | |
| | Less than 20 000 | Before exceeding 20 000 fan blade cycles, or within 133 days after the effective date of this AD, whichever occurs later |

Note 1: The EC specified in Table 1 of this AD are those accumulated, on the effective date of this AD, by the engine since first installation on an aeroplane.

Note 2: The fan blade cycles specified in Table 1 of this AD are those accumulated, on the effective date of this AD, by the affected fan blade since new.

**Corrective Action(s)**:

(2) If, during any inspection as required by paragraph (1) of this AD, any discrepancy is detected on an affected fan blade, before next flight, or before release to service of the engine, as applicable, replace that affected fan blade with a serviceable fan blade in accordance with the instructions of the S/B.

**Credit**:

(3) Accomplishment of an ECI of an affected fan blade in accordance with the applicable CFM International ESM at Revision 55 (or later), task 72-21-01-200-001, is an acceptable alternative method to comply with the requirements of paragraph (1) of this AD, as applicable, for that affected fan blade.

(4) Inspections and corrective actions on an engine, accomplished before the effective date of this AD in accordance with the instructions of CFM56-7B S/B 72-1019 (any issue) or of CFM56-7B S/B 72-1024, as applicable, are acceptable to comply with the initial requirements of paragraphs (1) and (2) of this AD for that engine.

**Part installation:**

(5) From the effective date of this AD, it is allowed to install a fan blade on an engine, provided it is a serviceable fan blade, as defined in this AD.

**Terminating Action(s):**

(6) None.

**Ref. Publications:**

CFM International S.A. CFM56-7B S/B 72-1019 original issue dated 24 March 2017, or Revision 01 dated 13 June 2017.

CFM International S.A. CFM56-7B S/B 72-1024 original issue dated 26 July 2017.

CFM International S.A. CFM56-7B S/B 72-1033 original issue dated 20 April 2018.

The use of later approved revisions of the above-mentioned 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. The results of the safety assessment have indicated the need for immediate publication and notification, without the full consultation process.

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: 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. 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.