

Airworthiness Directive

AD No.: 2024-0225**Issued:** 26 November 2024

Note: This Airworthiness Directive (AD) 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.

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, or Annex Vb Part ML.A.301, as applicable, 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 Annex Vb Part ML.A.303, as applicable] or agreed with the Authority of the State of Registry [Regulation (EU) 2018/1139, Article 71 exemption].

Design Approval Holder's Name:

CFM INTERNATIONAL S.A.

Type/Model designation(s):

LEAP-1A engines

Effective Date: 10 December 2024**TCDS Number(s):** EASA.E.110**Foreign AD:** Not applicable**Supersedure:** This AD supersedes EASA AD 2023-0108 dated 26 May 2023.

ATA 72 – Engine – Forward Outer Seal, High-Pressure Compressor Stages 6-10 Compressor Rotor Spools and High-Pressure Turbine Rotor Stage 1 Disks – Replacement

Manufacturer(s):

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

Applicability:

LEAP-1A23, LEAP-1A24, LEAP-1A24E1, LEAP-1A26, LEAP-1A26CJ, LEAP-1A26E1, LEAP-1A29, LEAP-1A29CJ, LEAP-1A30, LEAP-1A32, LEAP-1A33, LEAP-1A33B2, LEAP-1A35A engines, all serial numbers (s/n).

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

Definitions:

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

The SB: CFM International (CFM) Service Bulletin (SB), LEAP-1A-72-00-0470-01A-930A-D Issue 003, CFM SB LEAP-1A-72-00-0493-01A-930A-D Issue 002, CFM SB LEAP-1A-72-00-0496-01A-930A-D, and CFM SB LEAP-1A-72-00-0507-01A-930A-D as applicable.

The SB tables: Tables 1 and 2 of CFM SB LEAP-1A-72-00-0470-01A-930A-D issue 003; Tables 1 and 2 of CFM SB LEAP-1A-72-00-0493-01A-930A-D issue 002; Tables 1 through 9 (inclusive) of CFM SB LEAP-1A-72-00-0496-01A-930A-D; and Tables 1 and 2 of CFM SB LEAP-1A-72-00-0507-01A-930A-D.

Affected part: Forward outer seals, high-pressure compressor (HPC) Stage 6-10 spools (compressor rotor stages 6-10 spools) and high-pressure turbine (HPT) rotor stage 1 disks (HPT stage 1 disks), having a Part Number (P/N) and s/n as listed in the SB tables.

Serviceable part: Any forward outer seal, HPC Stage 6-10 spool or HPT rotor stage 1 disk, eligible for installation, that is not an affected part.

Groups: Group 1 engines are those that have an affected part installed.
Group 2 engines are those that do not have an affected part installed.

Reason:

Three HPT rotor disks from a different engine type have been found to contain iron inclusions. This has been attributed to specific deficiencies in the manufacturing process. Iron inclusion may lead to reduced mechanical properties and failure of an affected part prior to achieving its approved life as published in the Airworthiness Limitations Section of the Engine Manual. Following investigations, it has been determined that also other parts, including forward outer seals and HPC Stage 6-10 spools, were manufactured using the same processes, and may also have reduced mechanical properties due to iron inclusion.

This condition, if not corrected, could lead to failure of affected parts, possibly resulting in high-energy debris release, with consequent damage to, and reduced control of, the aeroplane.

To address this potential unsafe condition, CFM published SB LEAP-1A-72-00-0470-01A-930A-D, SB LEAP-1A-72-00-0493-01A-930A-D and SB LEAP-1A-72-00-0496-01A-930A-D to provide replacement instructions for certain affected parts, and EASA issued AD 2023-0108, to require replacement of those affected parts and to prohibit (re)installation.

Since that AD was issued, additional parts have been determined to be affected, and CFM issued SB LEAP-1A-72-00-0507-01A-930A-D, to provide a list of the newly identified affected parts and instructions for replacement.

For the reasons described above, this AD retains the requirements of EASA AD 2023-0108, which is superseded, additionally requires replacement of affected parts listed in CFM SB LEAP-1A-72-00-0507-01A-930A-D, and prohibits reinstallation.

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

Required as indicated by this AD, unless the action(s) required by this AD have been already accomplished:

Replacement:

- (1) For Group 1 engines: Within the compliance time as specified in Table A of this AD, replace each affected part with a serviceable part in accordance with the instructions of the SB.



Note 1: The cycles since new (CSN) specified in the SB tables are those accumulated by the affected part since its first installation on an engine.

Note 2: The engine shop manual provides an acceptable method to determine the remaining cycles available for an affected part which has been operated on different engine models / thrust ratings.

Table A – Affected Part Replacement

Compliance Time (A or B, whichever occurs first)	
A	Within the compliance time as specified in the SB tables, as applicable (see Notes 1 and 2 of this AD), or within 50 engine cycles after the effective date of this AD, whichever occurs later
B	During the next piece-part exposure after the effective date of this AD

Parts Installation:

(2) From the effective date of this AD, do not install any affected part on any engine.

Ref. Publications:

CFM SB LEAP-1A-72-00-0470-01A-930A-D Issue 003 dated 03 March 2023.

CFM SB LEAP-1A-72-00-0493-01A-930A-D Issue 002 dated 17 November 2022.

CFM SB LEAP-1A-72-00-0496-01A-930A-D original issue (Issue 001) dated 07 March 2023.

CFM SB LEAP-1A-72-00-0507-01A-930A-D original issue (Issue 001) dated 24 January 2024.

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. This AD was posted on 16 October 2024 as PAD 24-118 for consultation until 13 November 2024. No comments were received during the consultation period.
3. Enquiries regarding this AD should be referred to the EASA Safety Information Section, Certification Directorate. E-mail: ADs@easa.europa.eu.
4. Information about any failures, malfunctions, defects or other occurrences, which may be similar to the unsafe condition addressed by this AD, and which may occur, or have occurred on a product, part or appliance not affected by this AD, 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 AD 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.



5. 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 14 87 65, E-mail: cfm.csc@safrangroup.com,

or

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