Airworthiness Directive

AD No.: 2022-0009

Issued: 19 January 2022

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, 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 (EU) 2018/1139, Article 71 exemption].

Design Approval Holder's Name:

CFM INTERNATIONAL S.A.

Type/Model designation(s):

LEAP-1A engines

Effective Date: 02 February 2022

TCDS Number(s): EASA.E.110

Foreign AD: Not applicable

Supersedure: None

ATA 72 – Engine – High Pressure Turbine Rotor Stage 1 Blade and Stator Stage 1 Nozzles – Inspection

Manufacturer(s):

SAFRAN Aircraft Engines, formerly SNECMA (France); General Electric Aviation (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 and LEAP-1A35A engines, all serial numbers.

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-72-00-0461-01A-930A-D issue 002.

Affected parts: High Pressure Turbine (HPT) rotor stage 1 blade Part Number (P/N) 2747M92P01, P/N 2553M91G03, P/N 2553M91G05, P/N 2553M91G06, P/N 2553M91G07 and P/N 2553M91G08; and HPT stator stage 1 nozzles P/N 2464M08G05, P/N 2464M08G06, P/N 2464M08G09, P/N 2464M08G10, P/N 2464M08G11 and P/N 2464M08G12.

Critical departures: Take-off accomplished in the Middle East and North African (MENA) region, as defined in the SB.

Groups: Group 1 are LEAP-1A29, LEAP-1A29CJ, LEAP-1A30, LEAP-1A32, LEAP-1A33, LEAP-1A33B2, and LEAP-1A35A engines. Group 2 are LEAP-1A23, LEAP-1A24, LEAP-1A24E1, LEAP-1A26, LEAP-1A26CJ, and LEAP-1A26E1 engines.

Reason:

Occurrences of cracking of affected parts have been reported on engines operated extensively in the MENA region.

This condition, if not detected and corrected, could lead to failure of the affected parts, possibly resulting in in-flight shut-down and reduced control of the aeroplane.

To address this potential unsafe condition, CFM issued the SB, as defined in this AD, providing instructions to accomplish borescope inspections (BSI) of affected parts, in addition to those already included in the recommended maintenance schedule.

For the reasons described above, this AD requires repetitive inspections of affected parts and, depending on findings, corrective actions.

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

Required as indicated, unless accomplished previously:

Inspections:

(1) For engines having an affected part stage 1 blade installed, which, on the effective date of this AD, has accumulated more than 800 critical departures (see Note 1 of this AD): Accomplish the actions as specified in paragraph (1.1) or (1.2), as applicable:

(1.1) For Group 1 engines: Within the threshold as identified in Table 1 of this AD, as applicable, and, thereafter, at intervals not exceeding 150 cycles, inspect the affected parts in accordance with the instructions of the SB.

(1.2) For Group 2 engines: Within the threshold as identified in Table 2 of this AD, as applicable, and, thereafter, at intervals not exceeding 300 cycles, inspect the affected parts in accordance with the instructions of the SB.

Table 1 – Group 1 Engines – Initial Inspection (see Note 2 of this AD)

Cycles	Threshold
1 650 or less	Before exceeding 1 750 cycles
More than 1 650	Within 100 cycles after the effective date of this AD

Table 2 – Group 2 Engines – Initial Inspection (see Note 2 of this AD)

Cycles	Threshold
2 500 or less	Before exceeding 2 600 cycles
More than 2 500	Within 100 cycles after the effective date of this AD

Note 1: If the number of critical departures accumulated by an affected part of an engine is unknown, the critical departures accumulated by that engine can be used instead.

Note 2: Unless otherwise stated, the cycles specified in Table 1, Table 2, Table 3 and Table 4 of this AD are those accumulated since new by the HPT rotor stage 1 blade which has accumulated the highest number of cycles since new.

(2) For engines having affected part stage 1 blades installed, none of which, on the effective date of this AD, has accumulated more than 800 critical departures (see Note 1 of this AD): Upon exceeding 800 critical departures for an affected part stage 1 blade of an engine, accomplish the actions as specified in paragraph (2.1) or (2.2), as applicable:

(2.1) For Group 1 engines: Within the threshold as identified in Table 3 of this AD, as applicable, and, thereafter, at intervals not exceeding 150 cycles, inspect the affected parts in accordance with the instructions of the SB.

(2.2) For Group 2 engines: Within the threshold as identified in Table 4 of this AD, as applicable, and, thereafter, at intervals not exceeding 300 cycles, inspect the affected parts in accordance with the instructions of the SB.

Table 3 – Group 1 Engines – Initial Inspection (see Note 2 of this AD)

Cycles	Threshold
1 650 or less	Before exceeding 1 750 cycles
More than 1 650	Within 100 cycles after an affected part stage 1 blade exceeds 800 critical departures

Table 4 – Group 2 Engines – Initial Inspection (see Note 2 of this AD)

Cycles	Threshold
2 500 or less	Before exceeding 2 600 cycles
More than 2 500	Within 100 cycles after an affected part stage 1 blade exceeds 800 critical departures

Corrective Action(s):

(3) For engines installed on twin-engine aeroplanes: If, during any inspection as required by paragraph (1) or (2) of this AD, as applicable, any discrepancy, as identified in section 5.E.1.(g) of the SB, is found on an engine (hereafter referred to as 'the first engine'), within 5 cycles after

that inspection, inspect the affected parts of the second engine of that aeroplane in accordance with the instructions of the SB.

(4) If, during the inspection as required by paragraph (3) of this AD, any discrepancy, as identified in section 5.E.1.(g)2 of the SB, is found on the second engine:

(4.1) Within 5 cycles after the inspection of the second engine, but not exceeding any applicable limitation of the applicable Aircraft Maintenance Manual (AMM), remove from service one engine (first or second) of that aeroplane and, before release to service of that engine, contact CFM for approved repair instructions and accomplish those instructions accordingly.

(4.2) Accomplish the applicable corrective actions for the remaining installed engine (second or first) within the compliance time as specified in, and in accordance with the instructions of, the applicable AMM, or contact CFM for approved repair instructions and accomplish those instructions accordingly.

(5) If, during the inspection as required by paragraph (3) of this AD, any discrepancy, as identified in section 5.E.1.(g)3 of the SB, is found on the second engine:

(5.1) Before next flight, remove from service one engine (first or second) of that aeroplane and, before release to service of that engine, contact CFM for approved repair instructions and accomplish those instructions accordingly.

(5.2) Accomplish the applicable corrective actions for the remaining installed engine (second or first) within the compliance time as specified in, and in accordance with the instructions of the applicable AMM, or contact CFM for approved repair instructions and accomplish those instructions accordingly.

(6) If, during the inspection as required by paragraph (3) of this AD, no discrepancy, as identified in section 5.E.1.(g)2 and 5.E.1.(g)3 of the SB, is found on the second engine, accomplish the applicable corrective actions for the first engine within the compliance time as specified in, and in accordance with the instructions of the applicable AMM, or contact CFM for approved repair instructions and accomplish those instructions accordingly.

(7) For engines in shop: If, during any inspection as required by paragraph (1) or (2) of this AD, as applicable, any discrepancy, as identified in section 5.E.1(g) of the SB, is found on an engine, before release to service of that engine, contact CFM for approved repair instructions and accomplish those instructions accordingly.

Credit:

(8) Inspections and corrective action(s) accomplished on an engine before the effective date of this AD in accordance with the instructions of CFM SB LEAP-1A-72-00-0461-01A-930A-D issue 001 are acceptable to comply with the requirements of paragraph (1) to (7) of this AD, as applicable, for that engine.

Terminating Action:

(9) None.

Part(s) Installation:

(10) From the effective date of this AD, it is allowed to install an affected part on any engine provided, after that installation, the engine is inspected as required by this AD.

(11) From the effective date of this AD, following removal of an engine as required by paragraph (4.1) or (5.1) of this AD, as applicable, it is allowed to install on a twin-engine aeroplane an engine, having affected parts installed which are not new, provided that, before that installation, that engine has passed an inspection (no discrepancies found) in accordance with the instructions of the SB.

Reporting:

(12) If, during any inspection as required by paragraph (1), (2) or (3) of this AD, as applicable, any discrepancy as identified in section 5.E.1.(g)2 and 5.E.1.(g)3 of the SB is found on an engine, within 30 days after that inspection, or after the effective date of this AD, whichever occurs later, report the inspection results to CFM. This can be accomplished in accordance with the instructions of the SB.

Ref. Publications:

CFM SB LEAP-1A-72-00-0461-01A-930A-D Issue 001 dated 10 December 2021, and Issue 002 dated 21 December 2021.

The use of later approved revisions of the above-mentioned document 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 22 December 2021 as PAD 21-186 for consultation until 07 January 2022. The Comment Response Documents can be found in the EASA Safety Publications Tool, in the compressed (zipped) file attached to the record for this AD.

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 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.