



Notification of a Proposal to issue an Airworthiness Directive

PAD No.: 22-012

Issued: 15 February 2022

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):

LEAP-1B engines

Effective Date: [TBD - Standard: 14 days after publication]

TCDS Number(s): EASA.E.115

Foreign AD: Not applicable

Supersedure: This AD supersedes EASA AD 2020-0055 dated 11 March 2020.

ATA 05 – Time Limits / Maintenance Checks – Airworthiness Limitations Section – Implementation

Manufacturer(s):

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

Applicability:

LEAP-1B21, LEAP-1B23, LEAP-1B25, LEAP-1B27, LEAP-1B28, LEAP-1B28B1, LEAP-1B28B2, LEAP-1B28B2C, LEAP-1B28B3, LEAP-1B28BBJ1 and LEAP-1B28BBJ2 engines, all serial numbers (s/n).

These engines are known to be installed on, but not limited to, Boeing 737-8, 737-8200 and 737-9 aeroplanes.

Definitions:

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

The ALS: CFM International (CFM) Airworthiness Limitations Section (ALS), Chapter 05 of LEAP-1B Engine Shop Manual (ESM) SM.21, data modules as listed in Appendix 1 of this AD.



SB 72-0342: CFM Service Bulletin (SB) LEAP-1B-72-00-0342-01A-930A-D Issue 002.

Affected parts: LEAP-1B Stages 6-10 Compressor Rotor Spools Part Number (P/N) 2552M06G03 or P/N 2552M06G04; High Pressure Turbine (HPT) Rotor Mid Seals P/N 2600M25P02; Stage 2 HPT Rotor Disks P/N 2547M01G02; Stage 2 Low Pressure Turbine (LPT) Disks P/N 364-021-130-0; and Stage 3 LPT Disks P/N 364-021-230-0.

The AMP: The approved Aircraft Maintenance Programme (AMP) on the basis of which the operator or the owner ensures the continuing airworthiness of each operated engine. For engines installed on aeroplanes operated in Europe, compliance with the approved AMP is required by Commission Regulation (EU) [1321/2014](#), Part M.A.301, paragraph 3.

New and/or more restrictive tasks and limitations: This includes all tasks and limitations that are new and all tasks and limitations for which a threshold or interval was reduced, which were introduced into the ALS, since the previous issues of the ESM Chapter 05 data modules that are currently incorporated in the AMP.

Reason:

The airworthiness limitations for the LEAP-1B engines, which are approved by EASA, are currently defined and published in the LEAP-1B ESM SM.21, Chapter 05, including reference to certain CFM SBs. These instructions have been identified as mandatory for continued airworthiness. Failure to accomplish these instructions could result in an unsafe condition.

EASA previously issued AD 2020-0055 to require the actions as specified in a previous revision of CFM LEAP-1B ESM SM.21, Chapter 05.

Since that AD was issued, life limits and maintenance tasks for newly designed parts have been introduced in the ALS, as defined in this AD.

In addition, following investigations related to material anomalies in certain critical parts, it has been determined that the affected parts, as defined in this AD, may have subsurface anomalies developed during the manufacturing process, resulting in a lower life capability.

This condition, if not detected and corrected, could lead to failure of the 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 issued/updated the following documents:

- the ALS, identifying the life limits and their applicability, also by reference to SB 72-0342;
- SB 72-0342, listing by P/N and s/n affected parts for which a reduced life limit by s/n, as specified in the ALS, is applicable.

For the reasons described above, this AD retains the requirement of EASA AD 2020-0055, which is superseded, and requires accomplishment of the actions specified in the ALS and SB 72-0342.

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

Required as indicated, unless accomplished previously:



Maintenance Tasks and Replacement of Life Limited Parts:

- (1) From the effective date of this AD, accomplish the following actions, as specified in the ALS and SB 72-0342, as applicable to engine model and depending on engine configuration:

- (1.1) Replace each component before exceeding the applicable life limit, and

- (1.2) Within the thresholds and intervals, accomplish all applicable maintenance tasks.

Corrective Action(s):

- (2) In case of finding discrepancies during accomplishment of any task as required by paragraph (1) of this AD, within the compliance time specified in the ALS, accomplish the applicable corrective action(s) in accordance with the applicable CFM maintenance documentation. If no compliance time is identified in the ALS, accomplish the applicable corrective action(s) before next flight. If a detected discrepancy cannot be corrected by using existing CFM instructions, before next flight, contact CFM for approved instructions and accomplish those instructions accordingly.

AMP Revision:

- (3) Within 12 months after the effective date of this AD, revise the AMP by incorporating the tasks and limitations and the associated thresholds and intervals described in the ALS, and SB 72-0342, as applicable to engine model and depending on engine configuration.

Credit:

- (4) If, before the effective date of this AD, the AMP has been revised to incorporate the maintenance tasks and life limitations as specified in previous issues of the ESM Chapter 05 data modules listed in Appendix 1 of this AD, that action ensures the continued accomplishment of those tasks and limitations.

Consequently, for an engine installed on an aeroplane to which that AMP applies, it is acceptable to accomplish the new and/or more restrictive tasks, as defined in this AD, as applicable to engine model and depending on engine configuration, within the compliance times as specified in the ALS and SB 72-0342, as applicable, to comply with paragraph (1) of this AD.

For that AMP, it is acceptable to incorporate the new and/or more restrictive tasks, as applicable to engine model and depending on engine configuration, into the AMP to comply with paragraph (3) of this AD.

Recording AD Compliance:

- (5) When the AMP of an aeroplane has been revised as required by paragraph (3) or (4) of this AD, as applicable, that action ensures continued accomplishment of the tasks as required by paragraphs (1) and (2) of this AD for the engines installed on that aeroplane. Consequently, after revising the AMP, as required by paragraph (3) or (4) of this AD, it is not necessary that accomplishment of individual action is recorded for demonstration of AD compliance on a continued basis.



Ref. Publications:

CFM LEAP-1B ESM SM.21, Chapter 05, currently at Revision 018, data modules as listed in Appendix 1 of this AD.

CFM SB LEAP-1B-72-00-0342-01A-930A-D Issue 002 dated 26 July 2021.

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 15 March 2022.
2. Enquiries regarding this PAD should be referred to the EASA Safety 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: 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.



Appendix 1 – LEAP-1B ESM SM.21 Chapter 05 Data Modules

#	Document number	Issue	Dated
1	LEAP-1B-05-00-00-01A-040A-C	003	09 January 2020
2	LEAP-1B-05-11-00-01A-040A-C	001	23 February 2016
3	LEAP-1B-05-11-01-01A-0B1B-C	004	26 March 2018
4	LEAP-1B-05-11-02-01A-0B1B-C	009	26 July 2021
5	LEAP-1B-05-11-03-01A-0B1B-C	006	26 July 2021
6	LEAP-1B-05-11-04-01A-0B1B-C	006	01 June 2021
7	LEAP-1B-05-12-00-01A-040A-C	001	23 February 2016
8	LEAP-1B-05-12-01-01A-0B1B-C	003	30 May 2018
9	LEAP-1B-05-12-02-01A-0B1B-C	004	13 December 2021
10	LEAP-1B-05-17-01-01A-0B1A-C	001	20 April 2016
11	LEAP-1B-05-21-00-01A-040B-C	001	23 February 2016
12	LEAP-1B-05-21-01-01A-281B-C	001	23 February 2016
13	LEAP-1B-05-21-02-01A-281B-C	001	23 February 2016
14	LEAP-1B-05-21-03-01A-281B-C	003	06 October 2021
15	LEAP-1B-05-21-04-01A-281B-C	001	23 February 2016
16	LEAP-1B-05-21-05-01A-281B-C	001	23 February 2016
17	LEAP-1B-05-21-06-01A-281B-C	001	23 February 2016
18	LEAP-1B-05-21-08-01A-281B-C	001	23 February 2016
19	LEAP-1B-05-29-00-01A-281B-C	001	09 January 2020
20	LEAP-1B-05-29-00-01A-710A-C	001	23 February 2016

