



## DEPARTMENT OF TRANSPORTATION

### Federal Aviation Administration

#### 14 CFR Part 39

[Docket No. FAA-2025-0621; Project Identifier AD-2024-00796-E]

RIN 2120-AA64

#### Airworthiness Directives; CFM International, S.A. Engines

**AGENCY:** Federal Aviation Administration (FAA), DOT.

**ACTION:** Notice of proposed rulemaking (NPRM).

**SUMMARY:** The FAA proposes to supersede Airworthiness Directive (AD) 2023-23-12, which applies to all CFM International, S.A. (CFM) Model LEAP-1B21, LEAP-1B23, LEAP-1B25, LEAP-1B27, LEAP-1B28, LEAP-1B28B1, LEAP-1B28B2, LEAP-1B28B2C, LEAP-1B28B3, LEAP-1B28BBJ1, and LEAP-1B28BBJ2 (LEAP-1B) engines. AD 2023-23-12 requires replacing certain high-pressure turbine (HPT) rotor stage 1 disks and a certain compressor rotor stages 6-10 spool. Since the FAA issued AD 2023-23-12, the manufacturer has identified additional parts that were manufactured from material suspected to have reduced material properties due to iron inclusion, which prompted this proposed AD. This proposed AD would retain the requirements to replace certain HPT rotor stage 1 disks and a certain compressor rotor stages 6-10 spool. This proposed AD would also expand the applicability to include additional affected HPT rotor stage 1 disks that were manufactured from the same material suspected to have reduced material properties due to iron inclusion. The FAA is proposing this AD to address the unsafe condition on these products.

**DATES:** The FAA must receive comments on this proposed AD by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

**ADDRESSES:** You may send comments, using the procedures found in 14 CFR 11.43 and 11.45, by any of the following methods:

- Federal eRulemaking Portal: Go to [regulations.gov](https://www.regulations.gov). Follow the instructions for submitting comments.
- Fax: (202) 493-2251.

- Mail: U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE, Washington, DC 20590.

- Hand Delivery: Deliver to Mail address above between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

*AD Docket:* You may examine the AD docket at [regulations.gov](https://www.regulations.gov) under Docket No. FAA-2025-0621; or in person at Docket Operations between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this NPRM, any comments received, and other information. The street address for Docket Operations is listed above.

*Material Incorporated by Reference:*

- For CFM material identified in this proposed AD, contact CFM, GE Aviation Fleet Support, 1 Neumann Way, M/D Room 285, Cincinnati, OH 45215; phone: (877) 432-3272; email: [aviation.fleetsupport@ge.com](mailto:aviation.fleetsupport@ge.com).

- You may view this material at the FAA, Airworthiness Products Section, Operational Safety Branch, 1200 District Avenue, Burlington, MA 01803. For information on the availability of this material at the FAA, call (817) 222-5110.

**FOR FURTHER INFORMATION CONTACT:** Mehdi Lamnyi, Aviation Safety Engineer, FAA, 2200 South 216th Street, Des Moines, WA 98198; phone: (781) 238-7743; email: [mehdi.lamnyi@faa.gov](mailto:mehdi.lamnyi@faa.gov).

**SUPPLEMENTARY INFORMATION:**

**Comments Invited**

The FAA invites you to send any written relevant data, views, or arguments about this proposal. Send your comments to an address listed under the ADDRESSES section. Include “Docket No. FAA-2025-0621; Project Identifier AD-2024-00796-E” at the beginning of your comments. The most helpful comments reference a specific portion of the proposal, explain the reason for any recommended change, and include supporting data. The FAA will consider all comments received by the closing date and may revise this proposal because of those comments.

Except for Confidential Business Information (CBI) as described in the following paragraph, and other information as described in 14 CFR 11.35, the FAA will post all comments received, without change, to regulations.gov, including any personal information you provide. The agency will also post a report summarizing each substantive verbal contact received about this NPRM.

### **Confidential Business Information**

CBI is commercial or financial information that is both customarily and actually treated as private by its owner. Under the Freedom of Information Act (FOIA) (5 U.S.C. 552), CBI is exempt from public disclosure. If your comments responsive to this NPRM contain commercial or financial information that is customarily treated as private, that you actually treat as private, and that is relevant or responsive to this NPRM, it is important that you clearly designate the submitted comments as CBI. Please mark each page of your submission containing CBI as "PROPIN." The FAA will treat such marked submissions as confidential under the FOIA, and they will not be placed in the public docket of this NPRM. Submissions containing CBI should be sent to Mehdi Lamnyi, Aviation Safety Engineer, FAA, 2200 South 216th Street, Des Moines, WA 98198. Any commentary that the FAA receives which is not specifically designated as CBI will be placed in the public docket for this rulemaking.

### **Background**

The FAA issued AD 2023-23-12, Amendment 39-22614 (88 FR 85836, December 11, 2023), (AD 2023-23-12), for all CFM Model LEAP-1B engines. AD 2023-23-12 was prompted by a manufacturer investigation that revealed that certain HPT rotor stage 1 disks and a certain compressor rotor stages 6-10 spool were manufactured from material suspected to have reduced material properties due to iron inclusion. AD 2023-23-12 requires replacing certain HPT rotor stage 1 disks and a certain compressor rotor stages 6-10 spool. The agency issued AD 2023-23-12 to prevent fracture and subsequent uncontained failure of certain HPT rotor stage 1 disks and a certain compressor rotor stages 6-10 spool.

### **Actions Since AD 2023-23-12 Was Issued**

Since the FAA issued AD 2023-23-12, the manufacturer has identified additional affected HPT rotor stage 1 disks that were manufactured from material suspected to have reduced material properties due to iron inclusion. This condition, if not addressed, could result in uncontained debris release, damage to the engine, and damage to the aircraft.

### **FAA's Determination**

The FAA is issuing this NPRM after determining that the unsafe condition described previously is likely to exist or develop on other products of the same type design.

### **Material Incorporated by Reference under 1 CFR Part 51**

The FAA reviewed CFM Service Bulletin (SB) LEAP-1B-72-00-0402-01A-930A-D, Issue 001, dated January 23, 2024. This material specifies the part numbers and serial numbers of additional affected HPT rotor stage 1 disks and includes procedures for replacement of HPT rotor stage 1 disks.

The FAA also reviewed CFM SB LEAP-1B-72-00-0392-01A-930A-D, Issue 002, dated September 5, 2023, which the Director of the Federal Register approved for incorporation by reference as of January 16, 2024 (88 FR 85836, December 11, 2023).

This material is reasonably available because the interested parties have access to it through their normal course of business or by the means identified in the ADDRESSES section.

### **Proposed AD Requirements in this NPRM**

This proposed AD would retain all of the requirements of AD 2023-23-12. This proposed AD would require replacement of certain HPT rotor stage 1 disks and a certain compressor rotor stages 6-10 spool. This proposed AD would also expand the applicability to include additional affected HPT rotor stage 1 disks that were manufactured from the same material suspected to have reduced material properties due to iron inclusion.

### **Costs of Compliance**

The FAA estimates that this AD, if adopted as proposed, would affect 51 engines installed on airplanes of U.S. registry. These 51 engines require replacement of the HPT

stage 1 disk. The FAA estimates that there are no engines installed on airplanes of U.S. registry that require replacement of the compressor rotor stages 6–10 spool.

The FAA estimates the following costs to comply with this proposed AD:

### Estimated costs

Action	Labor Cost	Parts Cost	Cost per product	Cost on U.S. operators
Replace HPT rotor stage 1 disk	8 work-hours x \$85 per hour = \$680	\$215,635 (pro-rated)	\$216,315	\$11,032,065
Replace compressor rotor stages 6-10 spool (0 affected US engines)	8 work-hours x \$85 per hour = \$680	\$37,660 (pro-rated)	\$38,340	\$0

The new requirements of this proposed AD add no additional economic burden.

### Authority for this Rulemaking

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator. Subtitle VII, Aviation Programs, describes in more detail the scope of the Agency's authority.

The FAA is issuing this rulemaking under the authority described in Subtitle VII, Part A, Subpart III, Section 44701: General requirements. Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

### Regulatory Findings

The FAA determined that this proposed AD would not have federalism implications under Executive Order 13132. This proposed AD would not have a substantial direct effect on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify that the proposed regulation:

- (1) Is not a "significant regulatory action" under Executive Order 12866,
- (2) Would not affect intrastate aviation in Alaska, and

(3) Would not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

**List of Subjects in 14 CFR Part 39**

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

**The Proposed Amendment**

Accordingly, under the authority delegated to me by the Administrator, the FAA proposes to amend 14 CFR part 39 as follows:

**PART 39 - AIRWORTHINESS DIRECTIVES**

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

**§ 39.13 [Amended]**

2. The FAA amends § 39.13 by:

a. Removing Airworthiness Directive 2023-23-12, Amendment 39-22614 (88 FR 85836, December 11, 2023); and

b. Adding the following new airworthiness directive:

**CFM International, S.A.:** Docket No. FAA-2025-0621; Project Identifier AD-2024-00796-E.

**(a) Comments Due Date**

The FAA must receive comments on this airworthiness directive (AD) by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

**(b) Affected ADs**

This AD replaces AD 2023-23-12, Amendment 39-22614 (88 FR 85836, December 11, 2023) (AD 2023-23-12).

**(c) Applicability**

This AD applies to CFM International, S.A. (CFM) Model LEAP-1B21, LEAP-1B23, LEAP-1B25, LEAP-1B27, LEAP-1B28, LEAP-1B28B1, LEAP-1B28B2, LEAP-1B28B2C, LEAP-1B28B3, LEAP-1B28BBJ1, and LEAP-1B28BBJ2 engines.

**(d) Subject**

Joint Aircraft System Component (JASC) Code 7230, Turbine Engine Compressor Section; 7250, Turbine Section.

**(e) Unsafe Condition**

This AD was prompted by a manufacturer investigation that revealed that certain high-pressure turbine (HPT) rotor stage 1 disks and a certain compressor rotor stages 6-10 spool were manufactured from material suspected to have reduced material properties due to iron inclusion. The FAA is issuing this AD to prevent fracture and subsequent uncontained failure of certain HPT rotor stage 1 disks and a certain compressor rotor stages 6-10 spool. The unsafe condition, if not addressed, could result in uncontained debris release, damage to the engine, and damage to the aircraft.

**(f) Compliance**

Comply with this AD within the compliance times specified, unless already done.

**(g) Retained Required Actions**

(1) For engines with an installed HPT rotor stage 1 disk having a part number (P/N) and serial number (S/N) identified in Compliance, paragraph 3.E., Tables 1 through 2, of CFM Service Bulletin (SB) LEAP-1B-72-00-0392-01A-930A-D, Issue 002, dated September 5, 2023 (CFM SB LEAP-1B-72-00-0392-01A-930A-D, Issue 002): At the next piece-part exposure of the HPT rotor stage 1 disk, or before exceeding the applicable cycles since new (CSN) threshold identified in Compliance, paragraph 3.E., Tables 1 through 2, of CFM SB LEAP-1B-72-00-0392-01A-930A-D, Issue 002, whichever occurs first after January 16, 2024 (the effective date of AD 2023-23-12); or if the applicable CSN threshold has been exceeded as of January 16, 2024 (the effective date of AD 2023-23-12), within 50 flight cycles (FCs) from January 16, 2024 (the effective date of AD 2023-23-12); remove the HPT rotor stage 1 disk from service and replace with a part eligible for installation.

(2) For engines with an installed compressor rotor stages 6-10 spool having a P/N and S/N identified in Compliance, paragraph 3.E., Table 3, of CFM SB LEAP-1B-72-00-0392-01A-930A-D, Issue 002: At the next piece-part exposure of the compressor rotor stages 6-10 spool, or before exceeding the applicable CSN threshold identified in

Compliance, paragraph 3.E., Table 3, of CFM SB LEAP-1B-72-00-0392-01A-930A-D, Issue 002, whichever occurs first after January 16, 2024 (the effective date of AD 2023-23-12); or if the applicable CSN threshold has been exceeded as of January 16, 2024 (the effective date of AD 2023-23-12), within 50 FCs from January 16, 2024 (the effective date of AD 2023-23-12); remove the compressor rotor stages 6-10 spool from service and replace with a part eligible for installation.

**(h) New Required Actions**

For engines with an installed HPT rotor stage 1 disk having a P/N and S/N identified in Compliance, paragraph 3.E., Table 1, of CFM SB LEAP-1B-72-00-0402-01A-930A-D, Issue 001, dated January 23, 2024 (CFM SB LEAP-1B-72-00-0402-01A-930A-D, Issue 001): At the next piece-part exposure of the HPT rotor stage 1 disk, or before exceeding the applicable CSN threshold identified in Compliance, paragraph 3.E., Table 1, of CFM SB LEAP-1B-72-00-0402-01A-930A-D, Issue 001, whichever occurs first after the effective date of this AD; or if the applicable CSN threshold has been exceeded as of the effective date of this AD, within 50 FCs from the effective date of this AD; remove the HPT rotor stage 1 disk from service and replace with a part eligible for installation.

**(i) Retained Definition, with Updated Service Information Reference**

For the purpose of this AD, a “part eligible for installation” is an HPT rotor stage 1 disk or compressor rotor stages 6-10 spool that does not have a P/N and S/N identified in Compliance, paragraph 3.E., Tables 1 through 3, of CFM SB LEAP-1B-72-00-0392-01A-930A-D, Issue 002; or Compliance, paragraph 3.E., Table 1, of CFM SB LEAP-1B-72-00-0402-01A-930A-D, Issue 001.

**(j) Retained Installation Prohibition, with Updated Service Information Reference**

After the effective date of this AD, do not install an HPT rotor stage 1 disk or compressor rotor stages 6-10 spool that has a P/N and S/N identified in Compliance, paragraph 3.E., Tables 1 through 3, of CFM SB LEAP-1B-72-00-0392-01A-930A-D, Issue 002; or Compliance, paragraph 3.E., Table 1, of CFM SB LEAP-1B-72-00-0402-01A-930A-D, Issue 001, on any engine.

**(k) Retained Credit for Previous Actions**

This paragraph provides credit for the actions required by paragraph (g) of this AD, if those actions were performed prior to January 16, 2024 (the effective date of AD 2023-23-12) by following the Accomplishment Instructions specified in CFM SB LEAP-1B-72-00-0392-01A-930A-D, Issue 001, dated March 7, 2023.

**(l) Alternative Methods of Compliance (AMOCs)**

(1) The Manager, AIR-520 Continued Operational Safety Branch, FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. In accordance with 14 CFR 39.19, send your request to your principal inspector or local Flight Standards District Office, as appropriate. If sending information directly to the manager of the AIR-520 Continued Operational Safety Branch, send it to the attention of the person identified in paragraph (m)(1) of this AD. Information may be emailed to: AMOC@faa.gov.

(2) Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the local flight standards district office/certificate holding district office.

**(m) Additional Information**

(1) For more information about this AD, contact Mehdi Lamnyi, Aviation Safety Engineer, FAA, 2200 South 216th Street, Des Moines, WA 98198; phone: (781) 238-7743; email: mehdi.lamnyi@faa.gov.

(2) Service material identified in this AD that is not incorporated by reference is available at the addresses specified in paragraphs (n)(5) and (6) of this AD.

**(n) Material Incorporated by Reference**

(1) The Director of the Federal Register approved the incorporation by reference (IBR) of the material listed in this paragraph under 5 U.S.C. 552(a) and 1 CFR part 51.

(2) You must use this material as applicable to do the actions required by this AD, unless the AD specifies otherwise.

(3) The following material was approved for IBR on [DATE 35 DAYS AFTER PUBLICATION OF THE FINAL RULE].

(i) CFM Service Bulletin (SB) LEAP-1B-72-00-0402-01A-930A-D, Issue 001, dated January 23, 2024.

(ii) [Reserved]

(4) The following material was approved for IBR on January 16, 2024 (88 FR 85836, December 11, 2023).

(i) CFM SB LEAP-1B-72-00-0392-01A-930A-D, Issue 002, dated September 5, 2023.

(ii) [Reserved]

(5) For CFM material identified in this AD, contact CFM International, S.A., GE Aviation Fleet Support, 1 Neumann Way, M/D Room 285, Cincinnati, OH, 45215; phone: (877) 432-3272; email: [aviation.fleetsupport@ge.com](mailto:aviation.fleetsupport@ge.com).

(6) You may view this material at the FAA, Airworthiness Products Section, Operational Safety Branch, 1200 District Avenue, Burlington, MA 01803. For information on the availability of this material at the FAA, call (817) 222-5110.

(7) You may view this material at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, visit [www.archives.gov/federal-register/cfr/ibr-locations](http://www.archives.gov/federal-register/cfr/ibr-locations) or email [fr.inspection@nara.gov](mailto:fr.inspection@nara.gov).

Issued on April 10, 2025.

Peter A. White,  
Deputy Director, Integrated Certificate Management Division,  
Aircraft Certification Service.

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