[4910-13-P]

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2025-1115; Project Identifier AD-2024-00797-E; Amendment 39-23240; AD 2026-02-04]

RIN 2120-AA64

Airworthiness Directives; CFM International, S.A. Engines

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule.

SUMMARY: The FAA is adopting a new airworthiness directive (AD) for certain CFM International, S.A. (CFM) Model 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. This AD was prompted by a report of multiple aborted takeoffs and air turn-backs (ATBs) caused by high-pressure compressor (HPC) stall, which was induced by high levels of non-synchronous vibration (NSV). Additional manufacturer investigation revealed that wear on the No. 3 bearing spring finger housing can lead to high levels of NSV. This AD requires initial and repetitive calculations of the levels of NSV, inspection of the stage 2 high-pressure turbine (HPT) nozzle assembly honeycomb and HPT stator stationary seal honeycomb and, depending on the results of the calculations and inspections, replacement of certain parts. This AD also requires replacement of certain No. 3 bearing spring finger housings at the next shop visit. The FAA is issuing this AD to address the unsafe condition on these products.

DATES: This AD is effective [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

The Director of the Federal Register approved the incorporation by reference of certain publications listed in this AD as of [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

ADDRESSES:

AD Docket: You may examine the AD docket at regulations.gov under Docket No. FAA-2025-1115; 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 final rule, any comments received, and other information. The address for Docket Operations is U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE, Washington, DC 20590.

Material Incorporated by Reference:

• For CFM material identified in this 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.

• 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. It is also available at regulations.gov under Docket No. FAA-2025-1115.

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.

SUPPLEMENTARY INFORMATION:

Background

The FAA issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 by adding an AD that would apply to certain CFM Model 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. The NPRM was published in the *Federal Register* on June 25, 2025 (90 FR 26947). The NPRM was prompted by a notification from the engine manufacturer of three aborted takeoffs and two ATBs caused by HPC stall on CFM Model LEAP-1A engines. Additional manufacturer investigation revealed that wear on the No. 3 bearing spring finger housing can lead to high levels of NSV, which could induce HPC stall. As a result of its investigation, the manufacturer published service material that specifies

procedures for addressing this situation. The FAA previously published AD 2024-07-06, Amendment 39-22727 (89 FR 33211, April 29, 2024), to address this condition for parts from one specific supplier whose parts have shown increased susceptibility to premature wear. Since the publication of that AD, the manufacturer has identified another supplier whose parts are also susceptible to the same type of premature wear.

In the NPRM, the FAA proposed to require initial and repetitive calculations of the levels of NSV, inspection of the stage 2 HPT nozzle assembly honeycomb and HPT stator stationary seal honeycomb and, depending on the results of the calculations and inspections, replacement of certain parts. This AD also requires replacement of certain No. 3 bearing spring finger housings at the next shop visit. The FAA is issuing this AD to address the unsafe condition on these products.

Discussion of Final Airworthiness Directive

Comments

The FAA received comments from four commenters. The commenters were the Air Line Pilots Association, International (ALPA), American Airlines (AAL), CFM, and the Foundation for Aviation Safety. ALPA supported the NPRM without change. The following presents the comments received on the NPRM and the FAA's response to each comment.

Request to Allow Automated Alerts for NSV Calculations

AAL requested that the FAA allow for the use of automated CFM-provided alerts for NSV calculations as an alternative to the instructions in paragraph (g)(1) of the proposed AD. AAL noted that automated Customer Notification Reports for exceedance of NSV thresholds are already in use to provide continuous evaluation of NSV data and reduce the risk of errors created in manual inspection or calculation of NSV data.

The FAA disagrees with the commenter’s request to add automated CFM provided alerts as an additional method of compliance in the final rule because automated CNRs are dependent on continuous data transmission from the aircraft to CFM. If data transmission is interrupted, CNRs cannot be generated, potentially leaving unsafe conditions undetected. CFM SB LEAP-1A-72-00-0562-01A-930A-D, Issue 002-00, dated September 24, 2025, specifies that operators verify every 50 cycles that at least 100

cycles of post-flight data exist within each 125-cycle period to ensure the monitoring system is functioning, as specified in paragraph 5.A.(1). This AD requires this action. However, if any operator prefers to address the unsafe condition by means other than those specified in the referenced service information, they may request approval for an AMOC in accordance with paragraph (k) of this AD and, if approved, may use it instead of the procedures specified in the service information and the final rule. The FAA did not change this AD as a result of this comment.

Request to Refer to New Service Material

CFM requested that the FAA revise the "Material Incorporated by Reference under 1 CFR Part 51" paragraph and paragraphs (c), (g), (h), (i), and (l) of the proposed AD to refer to CFM SB LEAP-1A-72-00-0562-01A-930A-D, Issue 002-00, dated September 24, 2025, rather than CFM SB LEAP-1A-72-00-0562-01A-930A-D, Issue 001-00, dated April 30, 2025. CFM also requested that the FAA revise the "Material Incorporated by Reference under 1 CFR Part 51" paragraph of the proposed AD to the following: "The FAA also reviewed CFM SB LEAP-1A-72-00-0562-01A-930A-D, Issue 002-00, dated September 24, 2025. This service material identifies the affected No. 3 bearing spring finger housings and specifies procedures for monitoring NSV during engine operation, replacing the affected No. 3 bearing spring finger housing, inspecting the stage 2 HPT nozzle assembly honeycomb, and inspecting the HPT stator stationary seal honeycomb." CFM noted that CFM SB LEAP-1A-72-00-0562-01A-930A-D, Issue 002-00, dated September 24, 2025, specifies to inspect the stage 2 HPT nozzle assembly and HPT stator stationary seal, but does not state to replace them, and includes the updated method for accessing CFM diagnostics.

The FAA agrees with the content in the requested language and has revised this final rule in all areas to refer to CFM SB LEAP-1A-72-00-0562-01A-930A-D, Issue 002-00, dated September 24, 2025, rather than CFM SB LEAP-1A-72-00-0562-01A-930A-D, Issue 001-00, dated April 30, 2025. These changes will not increase the economic burden on any operator.

Request to Specify Replacement Threshold

CFM requested that the FAA update the language in the "Summary" paragraph of the proposed AD to the following: "This AD also requires replacement of certain No. 3 bearing spring finger housings at next shop visit." CFM also requested that the FAA update the language in the "Proposed AD Requirements in this NPRM" paragraph of the proposed AD to the following: "This proposed AD would also require replacement of the No. 3 bearing spring finger housing at next shop visit, regardless of calculated level of NSV."

The FAA agrees with the content in the requested language and has revised the "Summary" paragraph of this AD as requested. However, the "Proposed AD Requirements in this NPRM" paragraph is not included in the final rule, therefore the FAA did not change that paragraph as a result of this comment.

Request for Root Cause of Unsafe Condition

The Foundation for Aviation Safety requested that the FAA provide the root cause of the unsafe condition, clarify the reason that it was not addressed during engine certification, and explain what certification steps have been put in place to prevent this for new engines being built.

The FAA refers the commentor to the "Background" paragraph of this AD for additional information. The FAA notes that the premature wear was not anticipated during initial certification and is limited to specific suppliers, and improvements to the production controls have been implemented to prevent future occurrences. The FAA did not change this AD as a result of this comment.

Conclusion

The FAA reviewed the relevant data, considered any comments received, and determined that air safety requires adopting this AD as proposed. Accordingly, the FAA is issuing this AD to address the unsafe condition on these products. Except for minor editorial changes, and any other changes described previously, this AD is adopted as proposed in the NPRM. None of the changes will increase the economic burden on any operator.

Material Incorporated by Reference Under 1 CFR Part 51

The FAA reviewed CFM Service Bulletin (SB) LEAP-1A-72-00-0536-01A-930A-D, Issue 001-00, dated July 22, 2024. This service material specifies procedures for replacing the No. 3 bearing spring finger housings, inspecting the stage 2 HPT nozzle assembly honeycomb, and inspecting the HPT stator stationary seal honeycomb.

The FAA also reviewed CFM SB LEAP-1A-72-00-0562-01A-930A-D, Issue 002-00, dated September 24, 2025. This service material identifies the affected No. 3 bearing spring finger housings and specifies procedures for monitoring NSV during engine operation, inspecting the stage 2 HPT nozzle assembly honeycomb, and inspecting the HPT stator stationary seal honeycomb.

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.

Costs of Compliance

The FAA estimates that this AD affects three engines installed on airplanes of U.S. registry.

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

Estimated costs

Action	Labor Cost	Parts Cost	Cost per product	Cost on U.S. operators
Calculate NSV data	1 work-hour x $85 per hour = $85	$0	$85	$255
Inspect stage 2 HPT nozzle assembly honeycomb and HPT stator stationary seal honeycomb	4 work-hours x $85 per hour = $340	$0	$340	$1,020
Replace No. 3 bearing spring finger housing	17 work-hours x $85 per hour = $1,445	$64,590	$66,035	$198,105

The FAA estimates the following costs to do any necessary replacements and inspections that would be required based on the results of the proposed calculation. The

agency has no way of determining the number of engines that might need these replacements and inspections:

On-condition costs

Action	Labor Cost	Parts Cost	Cost per product
Replace stage 2 HPT nozzle assembly honeycomb	8 work-hours x $85 per hour = $680	$58,536	$59,216
Replace HPT stator stationary seal	8 work-hours x $85 per hour = $680	$6,855	$7,535

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

This AD will not have federalism implications under Executive Order 13132. This AD will 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 this AD:

(1) Is not a "significant regulatory action" under Executive Order 12866,

(2) Will not affect intrastate aviation in Alaska, and

(3) Will 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 Amendment

Accordingly, under the authority delegated to me by the Administrator, the FAA amends 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 adding the following new airworthiness directive:

2026-02-04 CFM International, S.A.: Amendment 39-23240; Docket No. FAA-2025-1115; Project Identifier AD-2024-00797-E.

(a) Effective Date

This airworthiness directive (AD) is effective [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

(b) Affected ADs

None.

(c) Applicability

This AD applies to CFM International, S.A. (CFM) Model 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 with an installed No. 3 bearing spring finger housing having part number (P/N) 2629M62G01 and a serial number identified in Table 1 of CFM Service Bulletin (SB) LEAP-1A-72-00-0562-01A-930A-D, Issue 002-00, dated September 24, 2025 (CFM SB LEAP-1A-72-00-0562-01A-930A-D, Issue 002-00).

(d) Subject

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

(e) Unsafe Condition

This AD was prompted by a report of multiple aborted takeoffs and air turn-backs caused by high-pressure compressor (HPC) stall, which was induced by high levels of non-synchronous vibration (NSV), and an additional manufacturer investigation that revealed wear on the No. 3 bearing spring finger housing. The FAA is issuing this AD to prevent HPC stall. The unsafe condition, if not addressed, could result in engine power loss at a critical phase of flight such as takeoff or climb, loss of engine thrust control, reduced controllability of the airplane, and loss of the airplane.

(f) Compliance

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

(g) Required Actions

(1) Within 50 flight cycles (FCs) after the effective date of this AD and thereafter at intervals not to exceed 50 FCs, calculate the NSV data in accordance with the Accomplishment Instructions, paragraphs 5.A.(1) and 5.A.(3), or 5.B.(1) and 5.B.(3) of CFM SB LEAP-1A-72-00-0562-01A-930A-D, Issue 002-00.

(2) If, during any calculation required by paragraph (g)(1) of this AD, the NSV data exceeds the limits specified in the Accomplishment Instructions paragraph 5.A.(4)(a)1, 5.A.(4)(a)2, or 5.B.(4)(a)1 of CFM SB LEAP-1A-72-00-0562-01A-930A-D, Issue 002-00, discontinue the calculations required by paragraph (g)(1) of this AD and within 25 FCs or 5 FCs, as applicable to the threshold exceeded, of the flight when these limits are exceeded:

(i) Remove from service the No. 3 bearing spring finger housing having P/N 2629M62G01 and a serial number identified in Table 1 of CFM SB LEAP-1A-72-00-0562-01A-930A-D, Issue 002-00, and replace with a part eligible for installation.

(ii) Inspect the stage 2 high-pressure turbine (HPT) nozzle assembly honeycomb for rubs in accordance with the Accomplishment Instructions, paragraphs 5.A.(4)(a)4b or 5.B.(4)(a)3b of CFM SB LEAP-1A-72-00-0562-01A-930A-D, Issue 002-00.

(iii) Inspect the HPT stator stationary seal honeycomb for rubs in accordance with the Accomplishment Instructions, paragraphs 5.A.(4)(a)4b or 5.B.(4)(a)3b of CFM SB LEAP-1A-72-00-0562-01A-930A-D, Issue 002-00.

(3) If, during the inspection required by paragraph (g)(2)(ii) of this AD, the stage 2 HPT nozzle assembly honeycomb fails to meet the serviceability criteria referenced in the Accomplishment Instructions, paragraphs 5.A.(4)(a)4b or 5.B.(4)(a)3b of CFM SB LEAP-1A-72-00-0562-01A-930A-D, Issue 002-00, before further flight, replace the stage 2 HPT nozzle assembly honeycomb.

(4) If, during the inspection required by paragraph (g)(2)(iii) of this AD, the HPT stator stationary seal honeycomb fails to meet the serviceability criteria referenced in the Accomplishment Instructions, paragraphs 5.A.(4)(a)4b or 5.B.(4)(a)3b of CFM SB LEAP-1A-72-00-0562-01A-930A-D, Issue 002-00, before further flight, replace the HPT stator stationary seal.

(5) At the next shop visit after the effective date of this AD, perform the following:

(i) Replace the No. 3 bearing spring finger housing having P/N 2629M62G01 and a serial number identified in Table 1 of CFM SB LEAP-1A-72-00-0562-01A-930A-D, Issue 002-00, with a part eligible for installation in accordance with paragraph 5.A.(1) of CFM SB LEAP-1A-72-00-0536-01A-930A-D, Issue 001-00, dated July 22, 2024 (CFM SB LEAP-1A-72-00-0536-01A-930A-D, Issue 001-00); and,

(ii) Inspect the stage 2 HPT nozzle assembly honeycomb and the HPT stator stationary seal honeycomb for rubs and disposition in accordance with paragraph 5.B.(4) and 5.B.(5) of CFM SB LEAP-1A-72-00-0536-01A-930A-D, Issue 001-00.

(h) Terminating Action

Replacement of the No. 3 bearing spring finger housing having P/N 2629M62G01 and a serial number identified in Table 1 of CFM SB LEAP-1A-72-00-0562-01A-930A-D, Issue 002-00 with a part eligible for installation, as specified in paragraph (g)(2)(i) and (g)(5) of this AD, constitutes terminating action for the calculations required by paragraph (g)(1) of this AD.

(i) Definitions

(1) For the purpose of this AD, a “part eligible for installation” is a No. 3 bearing spring finger housing that does not have P/N 2629M62G01 and a serial number identified in Table 1 of CFM SB LEAP-1A-72-00-0562-01A-930A-D, Issue 002-00.

(2) For the purpose of this AD, a "shop visit" is the induction of an engine into the shop for maintenance involving the separation of pairs of major mating engine flanges, except that the separation of engine flanges solely for the purposes of transportation without subsequent engine maintenance does not constitute an engine shop visit.

(j) Credit for Previous Actions

You may take credit for the actions required by paragraphs (g)(1) through (4) and (h) of this AD if you performed these actions before the effective date of this AD using CFM SB LEAP-1A-72-00-0562-01A-930A-D, Issue 001-00, dated April 30, 2025.

(k) 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, AIR-520 Continued Operational Safety Branch, send it to the attention of the person identified in paragraph (l) of this AD and email 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.

(3) For service material that contains steps that are labeled as Required for Compliance (RC), the following provisions apply.

(i) The steps labeled as RC, including substeps under an RC step and any figures identified in an RC step, that are required by paragraph (g) of this AD must be done to comply with this AD. An AMOC is required for any deviations to RC steps required by paragraph (g) of this AD, including substeps and identified figures.

(ii) Steps not labeled as RC may be deviated from using accepted methods in accordance with the operator's maintenance or inspection program without obtaining approval of an AMOC, provided the RC steps, including substeps and identified figures, can still be done as specified, and the airplane can be put back in an airworthy condition.

(l) 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) For CFM material, which is not incorporated by reference in this 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.

(m) 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.

(i) CFM International, S.A. (CFM) Service Bulletin (SB) LEAP-1A-72-00-0536-01A-930A-D, Issue 001-00, dated July 22, 2024.

(ii) CFM SB LEAP-1A-72-00-0562-01A-930A-D, Issue 002-00, dated September 24, 2025.

(3) For CFM material identified in this 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.

(4) 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

(5) 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 or email fr.inspection@nara.gov.

Issued on January 13, 2026.

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