



DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2024-2423; Project Identifier AD-2024-00320-E; Amendment 39-23126; AD 2025-17-16]

RIN 2120-AA64

Airworthiness Directives; International Aero Engines AG Engines

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule.

SUMMARY: The FAA is adopting a new airworthiness directive (AD) for certain International Aero Engines AG (IAE AG) Model V2522-A5, V2524-A5, V2525-D5, V2527-A5, V2527E-A5, V2527M-A5, V2528-D5, V2530-A5, V2531-E5, and V2533-A5 engines. This AD was prompted by further analysis of an event involving an IAE AG Model V2533-A5 engine that had an uncontained failure of a high-pressure turbine (HPT) 1st-stage hub that resulted in high-energy debris penetrating the engine cowling. This AD requires revising the airworthiness limitations section (ALS) of the existing maintenance manual or instructions for continued airworthiness and the existing approved maintenance or inspection program, as applicable, to include new inspections of certain critical rotating parts. 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].

ADDRESSES:

AD Docket: You may examine the AD docket at [regulations.gov](https://www.regulations.gov) under Docket No. FAA-2024-2423; 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.

FOR FURTHER INFORMATION CONTACT: Carol Nguyen, Aviation Safety Engineer, FAA, 2200 South 216th Street, Des Moines, WA 98198 phone: (781) 238-7655; email: carol.nguyen@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 IAE AG Model V2522-A5, V2524-A5, V2525-D5, V2527-A5, V2527E-A5, V2527M-A5, V2528-D5, V2530-A5, V2531-E5, and V2533-A5 engines. The NPRM was published in the Federal Register on November 12, 2024 (89 FR 88908). The NPRM was prompted by further analysis of an event involving an IAE AG Model V2533-A5 engine that had an uncontained failure of an HPT 1st-stage hub that resulted in high-energy debris penetrating the engine cowling. In the NPRM, the FAA proposed to require revising the ALS of the existing maintenance manual or instructions for continued airworthiness and the existing approved maintenance or inspection program, as applicable, to include new inspections of the HPT 1st-stage hub and HPT 2nd-stage hub. 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 seven commenters. The commenters were the Air Line Pilots Association, International (ALPA); JetBlue Airways (JetBlue); Lufthansa Technik AG (Lufthansa); Ryanair; SIA Engineering Company (SIAEC); United Airlines (UAL); and an anonymous commenter. ALPA supported the proposed AD without change. The following presents the comments received on the NPRM and the FAA's response to each comment.

Request to Update Task Reference

JetBlue, Lufthansa, Ryanair, SIAEC, UAL, and an anonymous commenter requested that the FAA change one of the tasks in the “Inspection (Engine Manual Reference)” column in table 1 to paragraph (g) of the proposed AD from “Task 72-45-11-

200-009" to "Task 72-45-31-200-009." UAL, JetBlue, and Ryanair noted that Task 72-45-11-200-009 does not exist in the engine manual.

The FAA agrees and has updated the language in table 1 to paragraph (g) of this AD as requested.

Request to Update Paragraph (g) of the Proposed AD

An anonymous commenter requested that the FAA update paragraph (g) of the proposed AD to read as follows; "Revise the Maintenance Scheduling Section (MSS) of the Time Limits Manuals (TLM): T-V2500-1IA Task 05-10-00-990-000-B00 (A5), T-V2500-3IA Task 05-10-00-990-000 (D5), and T-V2500-[???] Task 05-10-00-990-000(?) (E5), and for air carrier operations revise the approved continuous airworthiness maintenance program; by incorporating the information specified in table 1 to paragraph (g) of this AD, as applicable." The anonymous commenter noted that the use of the word "your" to describe the existing approved maintenance or inspection program is not clear and the statement should be changed to clarify that the action relates to each FAA certificated air carrier.

The FAA partially agrees. The FAA does not agree with the wording proposed by the anonymous commenter because not all operators use the term "continuous airworthiness maintenance program." The FAA agrees to meet the commenter's intent in paragraph (g)(1) and (2) of this AD by updating those paragraphs as set forth in the AD section of this rule.

Request to Clarify Responsibility for Required Actions

Lufthansa requested that the FAA reword paragraph (g) of the proposed AD to ensure that parts are inspected during each qualifying shop visit directly after the effective date of the proposed AD and to clarify which requirements are to be done by the repair shops and which must be done on-wing by the air carriers.

The FAA agrees and has updated the language in paragraph (g) of this AD to specify required actions for air carrier operations and to clarify that TASK 72-45-11-200-006 and TASK 72-45-31-200-009 are located in paragraph B.1 of the Maintenance Scheduling section of the applicable TLM, which is done at piece-part exposure.

Request to Clarify Inspection Task Requirement

An anonymous commenter requested that the FAA clarify that the performance of each inspection task is not directly required by the proposed AD, and that the only required actions are the one time update to the (FAA Approved) Maintenance Scheduling sections for the V2500-A5, V2500-D5, and V2500-D5 TLM, and the one time update to each FAA Certificated Air Carrier's Continuous Airworthiness Maintenance Program.

The FAA agrees to clarify. This AD requires an update to the operator's ICA, which includes the Engine Maintenance Manual (EMM). The operator's EMM will need to be updated to include TASK 72-45-11-200-006 and TASK 72-45-31-200-009 in the TLM in order to comply with this AD. For some operators, this would be considered their Continuous Airworthiness Maintenance Program. The performance of these tasks is required by other FAA regulations that are then required upon compliance with this AD. The FAA did not change this AD as a result of this comment.

Request to Clarify Responsibility for EMM Revision

SIAEC requested that the FAA update paragraph (g) of this AD to clarify who is responsible for revising the EMM. SIAEC notes that the proposed AD requires a revision to the Maintenance Scheduling paragraph of the ALS of the existing approved EMM, but an operator is unable to revise the EMM because it is the responsibility of the original equipment manufacturer (OEM).

The FAA disagrees that the revision to the EMM is solely the responsibility of the OEM because an operator may not be required to have the latest version of the OEM's EMM incorporated into their ICA. This AD requires the operator to include the latest two inspection tasks into the operator's EMM regardless of what version of the EMM they are currently required to have. The operator will then update their existing approved maintenance or inspection program, as applicable. The FAA did not change this AD as a result of this comment.

Request to Refer to the ALS of the Approved TLM

Lufthansa requested that the FAA refer to the ALS of the approved TLM in the proposed AD instead of the ALS of the approved EMM.

The FAA agrees and has updated the language in paragraph (g)(1) of this AD as requested.

Request to Clarify Compliance with AD Requirements

SIAEC requested that the FAA clarify whether the incorporation of TASK 72-45-11-200-006 and TASK 72-45-31-200-009 into the EMM constitutes compliance with the requirement of the proposed AD and no further action is required.

The FAA agrees to clarify. The incorporation of TASK 72-45-11-200-006 and TASK 72-45-31-200-009 into the EMM only constitutes compliance with the requirements of this AD for those that do not by regulation have an existing approved maintenance or inspection program. For operators that do have such program, there is an additional requirement for operators to make changes to their existing approved maintenance or inspection program. The FAA did not change this AD as a result of this comment.

Request to Change the Proposed AD to a Supersedure

An anonymous commenter requested that the FAA designate the proposed AD as a supersedure to AD 2004-12-08, Amendment 39-13667 (69 FR 34051, June 18, 2004) (AD 2004-12-08). The commenter noted that all required actions of AD 2004-12-08 must have been completed within 90 days of July 23, 2004.

The FAA disagrees with the request to issue this final rule as a supersedure AD. The ALS revisions required by AD 2004-12-08 include enhanced inspections of certain life-limited parts at each piece-part exposure while this AD requires the inclusion of two additional inspections for only the HPT 1st-stage hub and HPT 2nd-stage hub at piece-part exposure. The FAA has determined that a stand-alone AD is appropriate because the only intent of this AD is to require updating the existing ALS to add the two new inspections of the HPT 1st-stage hub and HPT 2nd-stage hub at piece-part exposure. The FAA did not change this AD as a result of this comment.

Request to Clarify Angle Ultrasonic Inspection (AUSI) Interval

SIAEC requested that the FAA clarify the inspection interval for the AUSIs that are required for the HPT stage 1 hub having part number (P/N) 2A5001 and HPT stage 2 hub having P/N 2A4802. SIAEC noted that these parts are already listed in AMP section 18 and require replacement before reaching 20,000 flight cycles, but the threshold for the

AUSI is not listed in the proposed AD, TASK 72-45-11-200-006 or TASK 72-45-31-200-009.

The FAA agrees and has updated paragraph (g)(1) of this AD to clarify that TASK 72-45-11-200-006 and TASK 72-45-31-200-009 are located in paragraph B.1 of the Maintenance Scheduling section of the applicable TLM, which is done at piece-part exposure.

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.

Costs of Compliance

The FAA estimates that this AD affects 1,514 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
Revise the ALS	1 work-hour x \$85 per hour = \$85	\$0	\$85	\$128,690

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:

2025-17-16 International Aero Engines AG: Amendment 39-23126; Docket No. FAA-2024-2423; Project Identifier AD-2024-00320-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 International Aero Engines AG (IAE AG) Model V2522-A5, V2524-A5, V2525-D5, V2527-A5, V2527E-A5, V2527M-A5, V2528-D5, V2530-A5, V2531-E5, and V2533-A5 engines.

(d) Subject

Joint Aircraft System Component (JASC) Code 7250, Turbine Engine Compressor Sections.

(e) Unsafe Condition

This AD was prompted by further analysis of an event involving an IAE AG model V2533-A5 engines that experienced an uncontained high-pressure turbine (HPT) 1st-stage hub failure that resulted in high-energy debris penetrating the engine cowling. The FAA is issuing this AD to prevent failure of the HPT 1st-stage hub and HPT 2nd-stage hub. The unsafe condition, if not addressed, could result in an uncontained hub failure, release of high-energy debris, damage to the engine, damage to the airplane, and loss of the airplane.

(f) Compliance

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

(g) Required Action

(1) Within 90 days after the effective date of this AD, revise paragraph B.1 of the Maintenance Scheduling section in the airworthiness limitations section (ALS) of the Instructions for Continued Airworthiness (ICA) located in the applicable existing Time Limits Manual (TLM), as listed in paragraphs (g)(1)(i) through (iii) of this AD, by incorporating the information specified in table 1 to paragraph (g) of this AD:

(i) Part Number (P/N) 2A4408, TASK 05-10-00-990-000-B00 Instructions For Continued Airworthiness (V2500-A5);

(ii) P/N 2A4417, TASK 05-10-00-990-000 Instructions For Continued Airworthiness (V2500-D5);

(iii) P/N 2A4384, TASK 05-10-00-990-000-A00 Instructions For Continued Airworthiness (V2500-E5).

(2) For air carrier operations, within 90 days after the effective date of this AD, revise the existing approved maintenance or inspection program, as applicable, by incorporating the information specified in table 1 to paragraph (g) of this AD, as applicable.

Table 1 to paragraph (g) - ALS Additional Inspections

Part Nomenclature	Part Number	Inspection (Engine Manual Reference)
HPT Stage 1 Hub	2A5001	TASK 72-45-11-200-006
HPT Stage 2 Hub	2A4802	TASK 72-45-31-200-009

(h) Provisions for Alternative Actions

After the actions required by paragraph (g)(1) and (2) of this AD have been done, no alternative actions are allowed unless they are approved as specified in the provisions of paragraph (i) of this AD.

(i) 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 (j) 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.

(j) Additional Information

For more information about this AD, contact Carol Nguyen, Aviation Safety Engineer, FAA, 2200 South 216th Street, Des Moines, WA 98198; phone: (781)238-7655; email: carol.nguyen@faa.gov.

(k) Material Incorporated by Reference

None.

Issued on August 28, 2025.

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