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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2023-1989; Project Identifier AD-2023-00512-E; Amendment 39-22719; AD 2024-06-14]

RIN 2120-AA64

Airworthiness Directives; International Aero Engines, LLC 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, LLC (IAE) Model PW1124G1-JM, PW1127G-JM, PW1127GA-JM, PW1129G-JM, PW1130G-JM, PW1133G-JM, and PW1133GA-JM engines. This AD was prompted by a report that certain high-pressure compressor (HPC) 2nd stage rotors and HPC 4th stage rotors have potentially degraded knife-edge seals and abrasive coating of the rear wing 4th stage rotor due to having been cleaned in alkaline solution without masking the knife-edge seal coating. Operating in this condition could result in material degradation and fracture of the HPC 2nd stage rotor and HPC 4th stage rotor. This AD requires replacement of certain HPC 2nd stage rotors and HPC 4th stage rotors. The FAA is issuing this AD to address the unsafe condition on these products.

DATES:

This AD is effective June 3, 2024.

The Director of the Federal Register approved the incorporation by reference of a certain publication listed in this AD as of June 3, 2024.

ADDRESSES:

AD Docket: You may examine the AD docket at *regulations.gov* under Docket No. FAA-2023-1989; 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 Pratt & Whitney (PW) service information identified in this final rule, contact International Aero Engines, LLC, 400 Main Street, East Hartford, CT 06118; phone: (860) 565-0140; email: help24@pw.utc.com; website: connect.prattwhitney.com.
- You may view this service information 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:

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 Model PW1124G1-JM, PW1127G-JM, PW1127GA-JM, PW1129G-JM, PW1130G-JM, PW1133G-JM, and PW1133GA-JM engines. The NPRM published in the **Federal Register** on October 5, 2023 ([88 FR 69099](#)). The NPRM was prompted by a report of a batch of HPC 2nd stage rotors and HPC 4th stage rotors that could have degraded knife-edge seals and abrasive coating on the rear wing 4th stage rotor due to having been cleaned in alkaline solution without masking the knife-edge seal coating. Operating in this condition could result in material degradation and fracture of the HPC 2nd stage rotor and HPC 4th stage rotor. In the NPRM, the FAA proposed to require replacement of the affected HPC 2nd stage rotor and HPC 4th stage rotor with parts eligible for installation. The FAA is issuing this AD to address the unsafe condition on these products.

Since the NPRM was issued, PW also revised PW Service Bulletin PW1000G-C-72-00-0208-00A-930A-D, Issue 001, dated September 13, 2022, to PW Alert Service Bulletin (ASB) PW1000G-C-72-00-0208-00A-930A-D, Issue 002, dated January 18, 2024, to incorporate editorial changes. This service bulletin revision does not affect compliance or add any additional burden upon owners/operators of aircraft with the affected engines installed. Full credit will be given for PW Service Bulletin PW1000G-C-72-00-0208-00A-930A-D, Issue 001, dated September 13, 2022.

Discussion of Final Airworthiness Directive

Comments

The FAA received comments from two commenters. The commenters were the Air Line Pilots Association, International (ALPA), and Delta Air Lines, Inc (DAL). ALPA supported the NPRM

without change. The following presents the comment received from DAL on the NPRM and the FAA's response.

Request To Revise Definition for Parts Eligible for Installation

DAL requested that the FAA revise paragraph (h)(1)(ii) of the proposed AD to specify which version of the service bulletin is acceptable for compliance. DAL noted that the definition of a part eligible for installation in paragraph (h)(1)(ii) of the proposed AD does not currently specify which version of the service bulletin is acceptable for compliance, and it may be unclear to operators if the use of a future revision of the service bulletin is acceptable.

The FAA agrees with the request to revise paragraph (h)(1)(ii) of this AD in order to specify which version of the service bulletin is acceptable for compliance. The FAA revised paragraph (h)(2)(ii) of this AD to reference PW ASB PW1000G-C-72-00-0208-00A-930A-D, Issue 002, dated January 18, 2024, which was issued by PW after the NPRM was published. The FAA also added paragraph (i) to this AD, and redesignated subsequent paragraphs of this AD accordingly, to provide credit for actions performed before the effective date of this AD using PW SB PW1000G-C-72-00-0208-00A-930A-D, Issue 001, dated September 13, 2022.

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.

Related Service Information Under [1 CFR Part 51](#)

The FAA reviewed Pratt & Whitney ASB PW1000G-C-72-00-0208-00A-930A-D, Issue 002, dated January 18, 2024. This service information identifies the affected HPC 2nd stage rotors and HPC 4th stage rotors and specifies procedures for inspection and repair of the HPC 2nd stage rotors and HPC 4th stage rotors. This service information is reasonably available because the interested parties have access to it through their normal course of business or by the means identified in **ADDRESSES** .

Costs of Compliance

The FAA estimates that this AD affects 6 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 |
|--|------------------------------------|------------|------------------|------------------------|
| Replace HPC 2nd stage rotor and HPC 4th stage rotor with | 73 work-hours × \$85 per hour = | \$0 | \$6,205 | \$37,230 |

| Action | Labor cost | Parts cost | Cost per product | Cost on U.S. operators |
|----------------|------------|------------|------------------|------------------------|
| repaired parts | \$6,205 | | | |

Operators may choose to use new parts instead of repaired parts to comply with this AD. For replacement with new parts, the FAA estimates the following costs:

| Action | Labor cost | Parts cost | Cost per product |
|-----------------------------|---|------------|------------------|
| Replace HPC 2nd stage rotor | 32 work-hours × \$85 per hour = \$2,720 | \$312,000 | \$314,720 |
| Replace HPC 4th stage rotor | 32 work-hours × \$85 per hour = \$2,720 | 244,000 | 246,720 |

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:

2024-06-14 International Aero Engines, LLC: Amendment 39-22719; Docket No. FAA-2023-1989; Project Identifier AD-2023-00512-E.

(a) Effective Date

This airworthiness directive (AD) is effective June 3, 2024.

(b) Affected ADs

None.

(c) Applicability

This AD applies to International Aero Engines, LLC Model PW1124G1-JM, PW1127G-JM, PW1127GA-JM, PW1129G-JM, PW1130G-JM, PW1133G-JM, and PW1133GA-JM engines having a high-pressure compressor (HPC) 2nd stage rotor or HPC 4th stage rotor having a part number and serial number identified in the Applicability, Table 2, of Pratt & Whitney (PW) Alert Service Bulletin (ASB) PW1000G-C-72-00-0208-00A-930A-D, Issue 002, dated January 18, 2024 (PW ASB PW1000G-C-72-00-0208-00A-930A-D, Issue 002).

(d) Subject

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

(e) Unsafe Condition

This AD was prompted by a report that certain HPC 2nd stage rotors and HPC 4th stage rotors have potentially degraded knife-edge seals and abrasive coating of the rear wing 4th stage rotor due to having been cleaned in alkaline solution without masking the knife-edge seal coating. The FAA is issuing this AD to prevent material degradation and fracture of the HPC 2nd stage rotor and HPC 4th

stage rotor. The unsafe condition, if not addressed, could result in uncontained part release or dual-engine shutdown, damage to engine, damage to airplane, and loss of the airplane.

(f) Compliance

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

(g) Required Actions

(1) At the next engine shop visit after the effective date of this AD, remove the HPC 2nd stage rotor having a part number and serial number identified in the Applicability, Table 2, of PW ASB PW1000G-C-72-00-0208-00A-930A-D, Issue 002, and replace with a part eligible for installation.

(2) At the next engine shop visit after the effective date of this AD, remove the HPC 4th stage rotor having a part number and serial number identified in the Applicability, Table 2, of PW ASB PW1000G-C-72-00-0208-00A-930A-D, Issue 002, and replace with a part eligible for installation.

(h) Definitions

(1) For the purposes of this AD, a “part eligible for installation” is:

(i) Any HPC 2nd stage rotor or HPC 4th stage rotor, as applicable, that does not have a part number and serial number identified in the Applicability, Table 2, of PW ASB PW1000G-C-72-00-0208-00A-930A-D, Issue 002; or

(ii) Any HPC 2nd stage rotor or HPC 4th stage rotor, as applicable, that has incorporated PW ASB PW1000G-C-72-00-0208-00A-930A-D, Issue 002.

(2) For the purposes of this AD, an “engine shop visit” is the induction of an engine into the shop for maintenance involving the separation of the “H” flange.

(i) Credit for Previous Actions

You may take credit for the replacement of the HPC 2nd stage rotor or HPC 4th stage rotor required by paragraph (g)(1) or (2) of this AD if the HPC 2nd stage rotor or HPC 4th stage rotor incorporated PW Service Bulletin PW1000G-C-72-00-0208-00A-930A-D, Issue 001, dated September 13, 2022, before the effective date of this AD.

(j) 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 (k) of this AD and email to: ANE-AD-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.

(k) 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.

(l) Material Incorporated by Reference

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

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

(i) Pratt & Whitney Alert Service Bulletin PW1000G-C-72-00-0208-00A-930A-D, Issue 002, dated January 18, 2024.

(ii) [Reserved]

(3) For Pratt & Whitney service information identified in this AD, contact International Aero Engines, LLC, 400 Main Street, East Hartford, CT 06118; phone: (860) 565-0140; email: help24@pw.utc.com; website: connect.prattwhitney.com.

(4) You may view this service information at 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-locationsoremailfr.inspection@nara.gov.

Issued on March 22, 2024.

Victor Wicklund,

Deputy Director, Compliance & Airworthiness Division, Aircraft Certification Service.

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