



## DEPARTMENT OF TRANSPORTATION

### Federal Aviation Administration

#### 14 CFR Part 39

[Docket No. FAA-2023-1989; Project Identifier AD-2023-00512-E]

RIN 2120-AA64

#### Airworthiness Directives; International Aero Engines, LLC Engines

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

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

**SUMMARY:** The FAA proposes to adopt 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 proposed 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 proposed AD would require replacement of certain HPC 2nd stage rotors and HPC 4th stage rotors. 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) by searching for and locating 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 NPRM, any comments received, and other information. The street address for Docket Operations is listed above.

*Material Incorporated by Reference:*

- For Pratt & Whitney service information identified in this NPRM, contact International Aero Engines, LLC, 400 Main Street, East Hartford, CT 06118; phone: (860) 565-0140; email: [help24@pw.utc.com](mailto:help24@pw.utc.com); website: [connect.prattwhitney.com](https://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:** Mark Taylor, Aviation Safety Engineer, FAA, 2200 South 216th Street, Des Moines, WA 98198; phone: (781) 238-7229; email: [mark.taylor@faa.gov](mailto:mark.taylor@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 ADDRESSES. Include “Docket No. FAA-2023-1989; Project Identifier AD-2023-00512-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 amend 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](https://www.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 Mark Taylor, 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 was notified that on certain IAE Model PW1124G1-JM, PW1127G-JM, PW1127GA-JM, PW1129G-JM, PW1130G-JM, PW1133G-JM, and PW1133GA-JM engines, a batch of HPC 2nd stage rotors and HPC 4th stage rotors 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. This condition, if not addressed, could result in uncontained part release or dual-engine shutdown, damage to the engine, damage to the airplane, and loss of the airplane.

### **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.

## Related Service Information under 1 CFR Part 51

The FAA reviewed Pratt & Whitney Service Bulletin (SB) PW1000G-C-72-00-0208-00A-930A-D, Issue 001, dated September 13, 2022. 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.

## Proposed AD Requirements in this NPRM

This proposed AD would require replacement of the affected HPC 2nd stage rotor and HPC 4th stage rotor with parts eligible for installation.

## Costs of Compliance

The FAA estimates that this AD, if adopted as proposed, would affect 6 engines installed on airplanes of U.S. registry. 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 HPC 2nd stage rotor and HPC 4th stage rotor with repaired parts	73 work-hours x \$85 per hour = \$6,205	\$0	\$6,205	\$37,230

Operators may choose to use new parts instead of repaired parts to comply with this proposed 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 x \$85 per hour = \$2,720	\$312,000	\$314,720
Replace HPC 4th stage rotor	32 work-hours x \$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**

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 this 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 adding the following new airworthiness directive:  
**International Aero Engines, LLC:** Docket No. FAA-2023-1989; Project Identifier AD-2023-00512-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**

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 Service Bulletin (SB) PW1000G-C-72-00-0208-00A-930A-D, Issue 001, dated September 13, 2022 (Pratt & Whitney SB PW1000G-C-72-00-0208-00A-930A-D).

**(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 Pratt & Whitney SB PW1000G-C-72-00-0208-00A-930A-D 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 Pratt & Whitney SB PW1000G-C-72-00-0208-00A-930A-D 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 Pratt & Whitney SB PW1000G-C-72-00-0208-00A-930A-D; or

(ii) Any HPC 2nd stage rotor or HPC 4th stage rotor, as applicable, that has incorporated Pratt & Whitney SB PW1000G-C-72-00-0208-00A-930A-D.

(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) 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: 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.

**(j) Related Information**

For more information about this AD, contact Mark Taylor, Aviation Safety Engineer, FAA, 2200 South 216th Street, Des Moines, WA 98198; phone: (781) 238-7229; email: [mark.taylor@faa.gov](mailto:mark.taylor@faa.gov).

**(k) 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 Service Bulletin PW1000G-C-72-00-0208-00A-930A-D, Issue 001, dated September 13, 2022.

(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](mailto:help24@pw.utc.com); website: [connect.prattwhitney.com](http://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 service information that is incorporated by reference at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, email: [fr.inspection@nara.gov](mailto:fr.inspection@nara.gov), or go to: [www.archives.gov/federal-register/cfr/ibr-locations.html](http://www.archives.gov/federal-register/cfr/ibr-locations.html).

Issued on September 29, 2023.

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

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