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## **DEPARTMENT OF TRANSPORTATION**

### **Federal Aviation Administration**

#### **14 CFR Part 39**

**[Docket No. FAA-2020-0184; Project Identifier AD-2020-00187-E; Amendment 39-21104; AD 2020-06-02]**

**RIN 2120-AA64**

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

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

**ACTION:** Final rule; request for comments.

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**SUMMARY:** The FAA is adopting a new airworthiness directive (AD) for all International Aero Engines, LLC (IAE) PW1122G-JM, PW1124G1-JM, PW1124G-JM, PW1127GA-JM, PW1127G1-JM, PW1127G-JM, PW1133G-JM, PW1133GA-JM, PW1130G-JM, and PW1129G-JM model turbofan engines with a certain low-pressure turbine (LPT) 3rd-stage blade installed. This AD requires initial and repetitive borescope inspections (BSI) of the turbine stator intermediate outer rear air seal (turbine piston seal) and, depending on the results of the inspection, replacement with a part eligible for installation. This AD was prompted by reports of failure of turbine piston seals leading to fracture of the LPT 3rd-stage blades. The FAA is issuing this AD to address the unsafe condition on these products.

**DATES:** This AD is effective April 6, 2020.

The Director of the Federal Register approved the incorporation by reference of a certain publication listed in this AD as of April 6, 2020.

The FAA must receive comments on this AD by May 4, 2020.

**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 <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: U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE, Washington, DC 20590, between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

For service information identified in this final rule, contact International Aero Engines, LLC, 400 Main Street, East Hartford, CT 06118, United States; phone: 800-565-0140; email: help24@pw.utc.com; website: <https://fleetcare.pw.utc.com>. You may view this service information at the FAA, Engine and Propeller Standards Branch, 1200 District Avenue, Burlington, MA, 01803. For information on the availability of this material at the FAA, call 781-238-7759. It is also available on the internet at <https://www.regulations.gov> by searching for and locating Docket No. FAA-2020-0184.

## **Examining the AD Docket**

You may examine the AD docket on the internet at <https://www.regulations.gov> by searching for and locating Docket No. FAA-2020-0184; 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 street address for the Docket Operations is listed above. Comments will be available in the AD docket shortly after receipt.

**FOR FURTHER INFORMATION CONTACT:** Kevin M. Clark, Aerospace Engineer, ECO Branch, FAA, 1200 District Avenue, Burlington, MA 01803; phone: 781-238-7088; fax: 781-238-7199; email: [kevin.m.clark@faa.gov](mailto:kevin.m.clark@faa.gov).

## **SUPPLEMENTARY INFORMATION:**

### **Discussion**

The FAA has received reports of 57 instances of fractures occurring on LPT 3rd-stage blades during operation since 2017.

In response to the LPT 3rd-stage blade fractures that occurred from 2017 until November 2019, and in response to on-going investigations of these fractures, the FAA proposed an AD, Product Identifier 2019-NE-31-AD (84 FR 64441, November 22, 2019), to replace the LPT 3rd-stage blades with more impact-resistant LPT blades. The FAA also issued AD 2019-25-01 (84 FR 65666, November 29, 2019) to accelerate replacement of certain LPT 3rd-stage blades on the affected engines. Since November 2019, 12 additional LPT 3rd-stage blade fractures have occurred.

The FAA investigation determined that 28 of the 57 LPT 3rd-stage blade fractures resulted from wear and fracture of the turbine piston seal releasing debris that impacted the LPT 3rd-stage blades. The FAA is therefore issuing this AD to prevent failure of the turbine piston seals and fracture of the LPT 3rd-stage blades.

This condition, if not addressed, could result in failure of one or more engines, loss of thrust control, and loss of the airplane. The FAA is issuing this AD to address the unsafe condition on these products.

## **Related Service Information Under 1 CFR Part 51**

The FAA reviewed Pratt & Whitney (P&W) Service Bulletin (SB) PW1000G-C-72-00-0154-00A-930A-D, Issue No. 004, dated February 14, 2020. The service information describes procedures for performing initial and repetitive BSIs of the LPT 3rd-stage turbine piston seal. 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 the ADDRESSES section.

## **Other Related Service Information**

The FAA reviewed Airbus Aircraft Maintenance Manual (AMM) TASK 72-53-00-200-801-A. The AMM describes procedures for BSI of the LPT assembly.

## **FAA's Determination**

The FAA is issuing this AD because it evaluated all the relevant information and determined the unsafe condition described previously is likely to exist or develop in other products of the same type design.

## **AD Requirements**

This AD requires initial and repetitive BSI of the turbine piston seal and, depending on the results of the inspection, replacement with a part eligible for installation.

## **Justification for Immediate Adoption and Determination of the Effective Date**

Section 553(b)(3)(B) of the Administrative Procedure Act (APA) (5 U.S.C.) authorizes agencies to dispense with notice and comment procedures for rules when the agency, for “good cause,” finds that those procedures are “impracticable, unnecessary, or contrary to the public interest.” Under this section, an agency, upon finding good cause, may issue a final rule without seeking comment prior to the rulemaking. Similarly, Section 553(d) of the APA authorizes agencies to make rules effective in less than 30 days, upon a finding of good cause.

An unsafe condition exists that requires the immediate adoption of this AD without providing an opportunity for public comments prior to adoption. The FAA has found that the risk to the flying public justifies waiving notice and comment prior to adoption of this rule. The affected IAE model turbofan engines, with a certain LPT 3rd-stage blade installed, have experienced 57 LPT 3rd-stage blade fractures during operation since 2017, with 12 LPT 3rd-stage blade fractures occurring between December 2019 and February 2020. Twenty-eight of the 57 LPT 3rd-stage blade fractures resulted from wear and fracture of the turbine piston seal releasing debris that impacted the LPT 3rd-stage blades. The turbine piston seal must be inspected within 15 days on engines operating on extended operations (ETOPS) flights and within 45 days on engines that do not operate on ETOPS flights. This unsafe condition may result in loss of the airplane.

The FAA considers the inspection of the turbine piston seals to be an urgent safety issue. Accordingly, notice and opportunity for prior public comment are impracticable and contrary to public interest pursuant to 5 U.S.C. 553(b)(3)(B). In addition, for the reasons stated above, the FAA finds that good cause exists pursuant to 5 U.S.C. 553(d) for making this amendment effective in less than 30 days.

## **Comments Invited**

This AD is a final rule that involves requirements affecting flight safety and was not preceded by notice and an opportunity for public comment. However, the FAA invites you to send any written data, views, or arguments about this final rule. Send your comments to an address listed under the ADDRESSES section. Include the docket number FAA-2020-0184 and Project Identifier AD-2020-00187-E at the beginning of your comments. The FAA specifically invites comments on the overall regulatory, economic, environmental, and energy aspects of this final rule. The FAA will consider all comments received by the closing date and may amend this final rule 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 <https://www.regulations.gov>, including any personal information you provide. The FAA will also post a report summarizing each substantive verbal contact received about this AD.

### Confidential Business Information

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 AD 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 AD, 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 AD. Submissions containing CBI should be sent to Kevin M. Clark, Aerospace Engineer, ECO Branch, FAA, 1200 District Avenue, Burlington, MA, 01803. Any commentary that the FAA receives which is not specifically designated as CBI will be placed in the public docket for this rulemaking.

### Regulatory Flexibility Act

The requirements of the Regulatory Flexibility Act (RFA) do not apply when an agency finds good cause pursuant to 5 U.S.C. 553 to adopt a rule without prior notice and comment. Because FAA has determined that it has good cause to adopt this rule without notice and comment, RFA analysis is not required.

### Costs of Compliance

The FAA estimates that this AD affects 40 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
BSI turbine piston seal	2 work-hours × \$85 per hour = \$170	\$0	\$170	\$6,800

The FAA estimates the following costs to do any necessary replacements that would be required based on the results of the inspection. The FAA has no way of determining the number of engines that might need this replacement:

#### On-Condition Costs

Action	Labor cost	Parts cost	Cost per product
Replace turbine piston seal	30 work-hours × \$85 per hour = \$2,550	\$30,000	\$32,550
Replace set of LPT 3rd-stage blades	408 work-hours × \$85 per hour = \$34,680	\$750,000 per blade set	784,680

## **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, and
- (2) Will not affect intrastate aviation in Alaska.

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

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

## **Adoption of 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 (AD):



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**2020-06-02 International Aero Engines LLC:** Amendment 39-21104; Docket No. FAA-2020-0184; Project Identifier AD-2020-00187-E.

**(a) Effective Date**

This AD is effective April 6, 2020.

**(b) Affected ADs**

None.

**(c) Applicability**

This AD applies to International Aero Engines, LLC (IAE) PW1122G-JM, PW1124G1-JM, PW1124G-JM, PW1127GA-JM, PW1127G1-JM, PW1127G-JM, PW1133G-JM, PW1133GA-JM, PW1130G-JM, and PW1129G-JM model turbofan engines with low-pressure turbine (LPT) 3rd-stage blade, part number (P/N) 5387343, 5387493, 5387473 or 5387503, installed.

**(d) Subject**

Joint Aircraft System Component (JASC) Code 7250, Turbine Section.

**(e) Unsafe Condition**

This AD was prompted by reports of failure of turbine stator intermediate outer rear air seals (turbine piston seals) leading to fracture of the LPT 3rd-stage blades. The FAA is issuing this AD to prevent failure of the turbine piston seals and fracture of LPT 3rd-stage blades. The unsafe condition, if not addressed, could result in failure of one or more engines, loss of thrust control, and loss of the airplane.

**(f) Compliance**

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

**(g) Required Actions**

(1) Perform a borescope inspection (BSI) of the turbine piston seal shiplap in accordance with the Accomplishment Instructions, For Engines Installed On Aircraft, paragraph B of Pratt & Whitney (P&W) Service Bulletin (SB) PW1000G-C-72-00-0154-00A-930A-D, Issue No. 004, dated February 14, 2020 ("P&W SB PW1000G-C-72-00-0154-00A-930A-D"), or the Accomplishment Instructions, For Engines Not Installed on Aircraft, paragraph A of P&W SB PW1000G-C-72-00-0154-00A-930A-D, as applicable, as follows:

(i) For engines operating on extended operations (ETOPS) flights, perform the BSI of the turbine piston seal shiplap within 15 days after the effective date of this AD.

(ii) For engines that do not operate on ETOPS flights, perform the BSI of the turbine piston seal shiplap within 45 days after the effective date of this AD.

(iii) Before further flight, remove from service any turbine piston seal found to exceed serviceable limits, as described in the Accomplishment Instructions, For Engines Installed On Aircraft, paragraph C.(1) and C.(2), of P&W SB PW1000G-C-72-00-0154-00A-930A-D.

(iv) If any turbine piston seal shiplap is found fractured and missing, before further flight, BSI the LPT 3rd-stage blades, and remove any LPT 3rd-stage blade found to exceed serviceable limits.

Note 1 to paragraph (g)(1)(iv): Guidance on determining LPT 3rd-stage blade serviceable limits can be found in Airbus Aircraft Maintenance Manual (AMM) TASK 72-53-00-200-801-A.

(2) Thereafter, repeat the BSI required by paragraph (g)(1) of the turbine piston seal as follows:

(i) For any turbine piston seal found intact (not fractured) during the last BSI, repeat the BSI within the intervals in Table 2, of P&W SB PW1000G-C-72-00-0154-00A-930A-D.

(ii) For any turbine piston seal found fractured during the last BSI, repeat the BSI every 200 flight cycles from the previous BSI to ensure proper engagement per the Accomplishment Instructions, For Engines Installed On Aircraft, paragraph C.(1) of P&W SB PW1000G-C-72-00-0154-00A-930A-D.

#### **(h) Terminating Action**

Removal of the LPT 3rd-stage blades, P/N 5387343, 5387493, 5387473, and 5387503, is a terminating action to the initial and repetitive BSI requirements of this AD.

#### **(i) Credit for Previous Actions**

You may take credit for the initial BSI of the turbine piston seal required by paragraph (g)(1) of this AD if done in accordance with the Accomplishment Instructions, For Engines Installed On Aircraft, paragraph B, of P&W SB PW1000G-C-72-00-0154-00A-930A-D, Issue 003, dated February 5, 2020, or earlier versions.

#### **(j) Alternative Methods of Compliance (AMOCs)**

(1) The Manager, ECO 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 certification office, send it to the attention of the person identified in paragraph (k) of this AD. You may email your request 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) Related Information**

For more information about this AD, contact Kevin M. Clark, Aerospace Engineer, ECO Branch, FAA, 1200 District Avenue, Burlington, MA 01803; phone: 781-238-7088; fax: 781-238-7199; email: kevin.m.clark@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 Service Bulletin PW1000G-C-72-00-0154-00A-930A-D, Issue No. 004, dated February 14, 2020.

(ii) [Reserved]

(3) For Pratt & Whitney service information identified in this AD, contact International Aero Engines, LLC, 400 Main Street, East Hartford, CT 06118, United States; phone: 800-565-0140; email: [help24@pw.utc.com](mailto:help24@pw.utc.com); website: <https://fleetcare.pw.utc.com>.

(4) You may view this service information at the FAA, Engine and Propeller Standards Branch, 1200 District Avenue, Burlington, MA 01803. For information on the availability of this material at the FAA, call 781-238-7759.

(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: [fedreg.legal@nara.gov](mailto:fedreg.legal@nara.gov), or go to: <https://www.archives.gov/federal-register/cfr/ibr-locations.html>.

Issued on March 6, 2020.

Gaetano A. Sciortino,

Deputy Director for Strategic Initiatives, Compliance & Airworthiness Division,  
Aircraft Certification Service.