[4910-13-P]

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2023-2401; Project Identifier AD-2023-01278-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 supersede Airworthiness Directive (AD) 2022-19-15, which applies to certain International Aero Engines, LLC (IAE LLC) Model PW1100G series engines; and AD 2023-16-07, which applies to certain IAE LLC Model PW1100G series engines and PW1400G series engines. AD 2022-19-15 requires an angled ultrasonic inspection (AUSI) of the high-pressure turbine (HPT) 1st-stage disk and HPT 2nd-stage disk, and replacement if necessary. AD 2023-16-07 requires an AUSI of the HPT 1st-stage hub (also known as the HPT 1st-stage disk) and HPT 2nd-stage hub (also known as the HPT 2nd-stage disk) for cracks, and replacement if necessary, which is terminating action for AD 2022-19-15. Since the FAA issued those two ADs, an investigation determined an increased risk of powder metal anomalies for all powder metal parts in certain powder metal production campaigns, which are susceptible to failure significantly earlier than previously determined. This proposed AD would retain the AUSI requirement for certain HPT 1st-stage and HPT 2nd-stage hubs from AD 2023-16-07. This proposed AD would also require performing an AUSI of the HPT 1st-stage hub, HPT 2nd-stage hub, high-pressure compressor (HPC) 7th-stage integrally bladed rotor (IBR-7), and HPC 8th-stage integrally bladed rotor (IBR-8) for cracks and replacement if necessary. This proposed AD would also require accelerated replacement of the HPC IBR-7, HPC IBR-8, HPC rear hub, HPT 1st-stage hub, HPT 1st-stage air seal, HPT 1st-stage blade retaining plate, HPT 2nd-stage hub, HPT 2nd-stage blade retaining plate, and HPT 2nd-stage rear seal. 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 20 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. 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 under Docket No. FAA-2023-2401; 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 (PW) 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; 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:

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-2023-2401; Project Identifier AD-2023-01278-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 the 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, 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 Carol Nguyen, 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 issued AD 2022-19-15, Amendment 39-22184 (87 FR 59660, October 3, 2022; corrected October 24, 2022 (87 FR 64156)) (AD 2022-19-15), for certain IAE

LLC Model PW1122G-JM, PW1124G1-JM, PW1124G-JM, PW1127G1-JM, PW1127GA-JM, PW1127G-JM, PW1129G-JM, PW1130G-JM, PW1133GA-JM, and PW1133G-JM engines. AD 2022-19-15 was prompted by an analysis of an event involving an International Aero Engines AG V2533-A5 model turbofan engine, which experienced an uncontained failure of an HPT 1st-stage disk that resulted in high-energy debris penetrating the engine cowling. AD 2022-19-15 requires performing an AUSI of the HPT 1st-stage disk and HPT 2nd-stage disk and, depending on the results of the inspections, replacing the HPT 1st-stage disk or HPT 2nd-stage disk. The agency issued AD 2022-19-15 to prevent failure of the HPT 1st-stage disk and HPT 2nd-stage disk.

Since the FAA issued AD 2022-19-15, an Airbus Model A320neo airplane powered by IAE LLC Model PW1127GA-JM engines experienced a failure of the HPC IBR-7 that resulted in an engine shutdown and an aborted take-off. Following this event, the manufacturer conducted a records review of production and field-returned parts and then re-evaluated their engineering analysis methodology. The new analysis identified HPT 1st-stage hubs and HPT 2nd-stage hubs that are susceptible to failure significantly earlier than previously determined. On August 4, 2023, PW issued service information with procedures for an AUSI to detect cracks and prevent premature failure. The manufacturer's updated analysis also identified PW1400G series engines that contain HPT 1st-stage hubs and HPT 2nd-stage hubs that are also subject to the unsafe condition. The FAA determined that the new service information necessitated action much earlier than the compliance time mandated in AD 2022-19-15 and that the additional engines should also be subject to these actions. As a result, the FAA issued AD 2023-16-07, Amendment 39-22526 (88 FR 56999, August 22, 2023) (AD 2023-16-07) for certain IAE LLC Model PW1122G-JM, PW1124G1-JM, PW1124G-JM, PW1127G-JM, PW1127G1-JM, PW1127GA-JM, PW1129G-JM, PW1130G-JM, PW1133G-JM, PW1133GA-JM, PW1428G-JM, PW1428GA-JM, PW1428GH-JM, PW1431G-JM, PW1431GA-JM, and PW1431GH-JM engines. AD 2023-16-07 requires performing an AUSI of the HPT 1st-stage hub (also known as the HPT 1st-stage disk) and HPT 2nd-stage hub (also known as the HPT 2nd-stage disk) for cracks and, depending on the results of the inspections, replacing the HPT 1st-stage hub or HPT 2nd-stage hub, which was terminating action for

the requirements of AD 2022-19-15. The FAA issued AD 2023-16-07 to prevent failure of the HPT 1st-stage hub and HPT 2nd-stage hub.

Actions Since the Previous ADs were Issued

Since the FAA issued AD 2023-16-07, additional manufacturer analysis found that the failure of the HPC IBR-7 was caused by a powder metal anomaly, similar in nature to the anomalies outlined in AD 2022-19-15. The analysis also concluded that there is an increased risk of failure for additional powder metal parts in certain powder metal production campaigns, specifically the HPC IBR-7 and HPC IBR-8, and that all affected parts are susceptible to failure significantly earlier than previously determined. The condition, if not addressed, could result in uncontained hub failure, release of high-energy debris, damage to the engine, damage to the airplane, and loss of the airplane.

Previous NPRM

To address the unsafe condition, the FAA issued an NPRM (Docket No. FAA-2023-2237; Project Identifier AD-2023-01057-E) to supersede AD 2022-19-15 and AD 2023-16-07, which was published in the *Federal Register* on December 12, 2023 (88 FR 86088). However, since that NPRM was issued, the FAA has received information from PW that an error was inadvertently included in the NPRM compliance times for some of the HPT 1st-stage and 2nd-stage hubs, which would have required removal significantly later than necessary. Because the removal timeframe needed to be shortened, the FAA determined it is necessary to withdraw the NPRM and issue a new NPRM for the unsafe condition with the correct compliance times.

The FAA received comments on the previous NPRM (Docket No. FAA-2023-2237; Project Identifier AD-2023-01057-E), which will be copied to Docket No. FAA-2023-2401 and addressed in the final rule.

Since the requirements in this proposed AD are similar to those proposed in the withdrawn NPRM, and because the comment period on the withdrawn NPRM was 30 days, we have good cause to make the comment period for this proposed AD 20 days.

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 the following service information:

• PW Alert Service Bulletin (ASB) PW1000G-C-72-00-0224-00A-930A-D, Issue No: 001, dated November 3, 2023, which specifies procedures for performing an AUSI for cracks on affected HPC IBR-7 and HPC IBR-8;

• PW ASB PW1000G-C-72-00-0225-00A-930A-D Issue No: 001, dated November 3, 2023, which specifies procedures for performing an AUSI for cracks on affected HPT 1st-stage hubs and HPT 2nd-stage hubs;

• PW SI NO. 198F-23, dated November 3, 2023, which specifies the list of affected HPT 1st-stage hubs and HPT 2nd-stage hubs, identified by part number and serial number, installed on certain IAE LLC engines.

• PW Service Bulletin PW1000G-C-72-00-0188-00A-930A-D, Issue No: 002, dated July 8, 2022, which was previously approved for incorporation by reference on November 7, 2022 (87 FR 59660, October 3, 2022; corrected October 24, 2022 (87 FR 64156)). This service information specifies procedures for performing an AUSI for cracks on affected HPT 1st-stage hubs and HPT 2nd-stage hubs;

• PW Special Instruction (SI) NO. 149F-23, dated August 4, 2023, which was previously approved for incorporation by reference on August 28, 2023 (88 FR 56999, August 22, 2023). This service information specifies the list of affected HPT 1st-stage hubs and HPT 2nd-stage hubs, identified by part number and serial number, installed on certain IAE LLC engines; and

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 retain none of the requirements of AD 2022-19-15, however, it would retain certain requirements of AD 2023-16-07. This proposed AD would require performing an AUSI of the HPT 1st-stage hub and HPT 2nd-stage hub and replacing as necessary. This proposed AD would also require performing an AUSI of the HPC IBR-7 and HPC IBR-8 for cracks and replacing as necessary. This proposed AD would also require accelerated replacement of the HPC IBR-7, HPC IBR-8, HPC rear hub, HPT 1st-stage hub, HPT 1st-stage air seal, HPT 1st-stage blade retaining plate, HPT 2nd-stage hub, HPT 2nd-stage blade retaining plate, and HPT 2nd-stage rear seal.

Interim Action

The FAA considers this proposed AD to be an interim action. The unsafe condition is still under investigation by the manufacturer and, depending on the results of that investigation, the FAA may consider further rulemaking action.

Costs of Compliance

The FAA estimates that this AD, if adopted as proposed, would affect 430 engines installed on airplanes of U.S. registry. The FAA estimates that 366 engines would need replacement of the HPT 1st-stage hub; 351 engines would need replacement of the HPT 2nd-stage hub; 408 engines would need replacement of the HPC IBR-7; 368 engines would need replacement of the HPC IBR-8; 283 engines would need replacement of the HPC rear hub; and 206 engines would need replacement of the HPT 1st-stage air seal, HPT 1st-stage blade retaining plate, HPT 2nd-stage blade retaining plate, and HPT 2nd-stage rear seal.

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

Estimated costs

Action	Labor Cost	Parts Cost (average pro-rated cost)	Cost per product	Cost on U.S. operators
AUSI of HPT 1st-stage hub, HPT 2nd-stage hub, HPC IBR-7,	80 work-hours x $85 per hour = $6,800	$0	$6,800	$2,924,000

Action	Labor Cost	Parts Cost (average pro-rated cost)	Cost per product	Cost on U.S. operators
and HPC IBR-8 for cracks				
Replace HPT 1st-stage hub	10 work-hours x $85 per hour = $850	$56,000	$56,850	$20,807,100
Replace HPT 2nd-stage hub	10 work-hours x $85 per hour = $850	$62,000	$62,850	$22,060,350
Replace HPC IBR-7	10 work-hours x $85 per hour = $850	$82,000	$82,850	$33,802,800
Replace HPC IBR-8	10 work-hours x $85 per hour = $850	$93,000	$93,850	$34,536,800
Replace HPC rear hub	10 work-hours x $85 per hour = $850	$132,000	$132,850	$37,596,550
Replace HPT 1st-stage air seal, HPT 1st-stage blade retaining plate, HPT 2nd-stage blade retaining plate, and HPT 2nd-stage rear seal	20 work-hours x $85 per hour = $1,700	$35,000	$36,700	$7,560,200

The FAA has included all known costs in its cost estimate. According to the manufacturer, however, some of the costs of this AD may be covered under warranty, thereby reducing the cost impact on affected operators.

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 that the 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:

a. Removing Airworthiness Directive 2022-19-15, Amendment 39-22184 (87 FR 64156, October 24, 2022; corrected October 24, 20 (87 FR 64156)); and Airworthiness Directive 2023-16-07, Amendment 39-22526 (88 FR 56999, August 22, 2023); and

b. Adding the following new airworthiness directive:

International Aero Engines, LLC: Docket No. FAA-2023-2401; Project Identifier AD-2023-01278-E.

(a) Comments Due Date

The FAA must receive comments on this airworthiness directive (AD) by [INSERT DATE 20 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

(b) Affected ADs

(1) This AD replaces AD 2022-19-15, Amendment 39-22184 (87 FR 64156, October 24, 2022; corrected October 24, 20 (87 FR 64156)).

(2) This AD replaces AD 2023-16-07, Amendment 39-22526 (88 FR 56999, August 22, 2023) (AD 2023-16-07).

(c) Applicability

This AD applies to International Aero Engines, LLC (IAE LLC) Model PW1122G-JM, PW1124G1-JM, PW1124G-JM, PW1127G-JM, PW1127G1-JM, PW1127GA-JM, PW1129G-JM, PW1130G-JM, PW1133G-JM, PW1133GA-JM, PW1428G-JM, PW1428GA-JM, PW1428GH-JM, PW1431G-JM, PW1431GA-JM, and PW1431GH-JM engines.

(d) Subject

Joint Aircraft System Component (JASC) Code 7230, Turbine Engine Compressor Section; 7250, Turbine Section.

(e) Unsafe Condition

This AD was prompted by an analysis of an event involving an IAE LLC Model PW1127GA-JM engine, which experienced failure of a high-pressure compressor (HPC) 7th-stage integrally bladed rotor (IBR-7) that resulted in an engine shutdown and aborted takeoff. The FAA is issuing this AD to failure of the high-pressure turbine (HPT) 1st-stage hub, HPT 2nd-stage hub, HPC IBR-7, and HPC 8th-stage integrally bladed rotor

(IBR-8). The unsafe condition, if not addressed, could result in 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) Retained Inspections from AD 2023-16-07, With No Changes

(1) This paragraph restates the requirements of paragraph (g)(1) of AD 2023-16-07. For Group 1 and Group 2 engines with an installed HPT 1st-stage hub having part number (P/N) 30G7301 and a serial number (S/N) listed in Tables 1, 2, 3, or 4 of PW Special Instruction (SI) NO. 149F-23, dated August 4, 2023 (PW SI NO. 149F-23), within 30 days after August 28, 2023 (the effective date of AD 2023-16-07), perform an AUSI of the HPT 1st-stage hubs for cracks in accordance with the Accomplishment Instructions, paragraph 9.A. or 9.B., as applicable, of Pratt & Whitney (PW) Service Bulletin PW1000G-C-72-00-0188-00A-930A-D, Issue No: 002, dated July 8, 2022 (PW1000G-C-72-00-0188-00A-930A-D, Issue 002).

(2) This paragraph restates the requirements of paragraph (g)(2) of AD 2023-16-07. For Group 1 and Group 2 engines with an installed HPT 2nd-stage hub having P/N 30G6602 and an S/N listed in Tables 1, 2, 3, or 4 of PW SI NO. 149F-23, within 30 days after August 28, 2023 (the effective date of AD 2023-16-07), perform an AUSI of the HPT 2nd-stage hubs for cracks in accordance with the Accomplishment Instructions, paragraph 9.C. or 9.D., as applicable, of PW1000G-C-72-00-0188-00A-930A-D, Issue 002.

(h) New Required Actions

(1) For Group 1 and Group 2 engines with an installed HPC IBR-7 having part number (P/N) 30G2307 or 30G4407 or an installed HPC IBR-8 having P/N, 30G5608, 30G5908 or 30G8908, at the next HPC engine shop visit and thereafter at every HPC engine shop visit, perform an angled ultrasonic scan inspection (AUSI) of the affected HPC IBR-7 or HPC IBR-8, as applicable, for cracks in accordance with the Accomplishment Instructions, paragraph 4.E.(1) or 4.E.(2), of PW Alert Service Bulletin (ASB) PW1000G-C-72-00-0224-00A-930A-D, Issue No: 001, dated November 3, 2023.

(2) For Group 1 and Group 2 engines with an installed HPT 1st-stage hub having P/N 30G7301 or an HPT 2nd-stage hub having P/N 30G6602, before exceeding the applicable compliance time in Table 1 to paragraph (h)(2) of this AD, except as required by paragraphs (g)(1) and (2) and paragraph (h)(6) of this AD, perform an AUSI of the affected HPT 1st-stage hub or HPT 2nd-stage hub, as applicable, for cracks in accordance with the Accomplishment Instructions, paragraph 1.D.(7)(a) or 1.D.(7)(b) of PW ASB PW1000G-C-72-00-0225-00A-930A-D Issue No: 001, dated November 3, 2023 (PW ASB PW1000G-C-72-00-0225-00A-930A-D). Thereafter, repeat the AUSI at the applicable interval in Table 1 to paragraph (h)(2) of this AD.

Table 1 to Paragraph (h)(2) - AUSI Compliance Times

Engine Group	AUSI performed prior to effective date of this AD	Compliance Time	Repetitive Interval
1	No	Before accumulating 3,800 cycles since new (CSN) or within 100 flight cycles (FCs) after the effective date of this AD, whichever occurs later	Thereafter at each HPT engine shop visit or before exceeding 3,800 FCs from the last AUSI of the affected hub, whichever occurs first
1	Yes	At the next HPT engine shop visit, not to exceed 3,800 FCs since the previous AUSI, or within 100 FCs after the effective date of this AD, whichever occurs later	Thereafter at each HPT engine shop visit or before exceeding 3,800 FCs from the last AUSI of the affected hub, whichever occurs first
2	No	Before accumulating 2,800 CSN or within 100 FCs after the effective date of this AD, whichever occurs later	Thereafter at each HPT engine shop visit or before exceeding 2,800 FCs from the last angled AUSI of the affected hub, whichever occurs first
2	Yes	At the next HPT engine shop visit, not to exceed 2,800 FCs since the previous AUSI, or within 100 FCs after the effective date of this AD, whichever occurs later	Thereafter at each HPT engine shop visit or before exceeding 2,800 FCs from the last AUSI of the affected hub, whichever occurs first

(3) For Group 1 and Group 2 engines with an installed part listed in Table 2 to paragraph (h)(3) of this AD, at the next HPT engine shop visit not to exceed the applicable cyclic limit specified in Table 2 to paragraph (h)(3) of this AD, or 100 FCs after the effective date of the AD, whichever occurs later, except as required by paragraphs (h)(5) and (7) of this AD, remove the affected part from service and replace with a part eligible for installation.

Table 2 to Paragraph (h)(3) - Part Replacement Compliance Times

Engine Group	AUSI performed prior to effective date of this AD	Part Name	Part Number	Cyclic Limit
1	Yes	HPT 1st-stage hub	30G4201 or 30G6201	3,800 FCs since last AUSI
	No	HPT 1st-stage hub	30G4201 or 30G6201	3,800 CSN
	Yes	HPT 2nd-stage hub	30G3902 or 30G5502	3,800 FCs since last AUSI or 7,000 CSN whichever comes first
	No	HPT 2nd-stage hub	30G3902 or 30G5502	3,800 CSN
2	Yes	HPT 1st-stage hub	30G4201 or 30G6201	2,800 FCs since last AUSI
	No	HPT 1st-stage hub	30G4201 or 30G6201	2,800 CSN
	Yes	HPT 2nd-stage hub	30G3902 or 30G5502	2,800 FCs since last AUSI or 5,000 CSN whichever comes first
	No	HPT 2nd-stage hub	30G3902 or 30G5502	2,800 CSN

(4) For Group 1 and Group 2 engines with an installed part listed in Table 3 to paragraph (h)(4) of this AD, before exceeding the applicable compliance times specified in Table 3 to paragraph (h)(4) of this AD, remove the affected part from service and replace with a part eligible for installation.

Table 3 to Paragraph (h)(4) - Part Replacement Compliance Times

Engine Group	Part Name	Part Number	Compliance Time
1 and 2	HPC rear hub	30G4008	At the next HPC shop visit or HPT shop visit, whichever occurs first after the effective date of this AD
1 and 2	HPT 1st-stage front air seal	30G3994 or 30G4674	At the next HPT engine shop visit
	HPT 2nd-stage rear air seal	30G2452	
	HPT 1st-stage blade retaining plate	30G2446	
	HPT 2nd-stage blade retaining plate	30G2447	
1	HPC rear hub	30G8208	Before accumulating 7,000 CSN or within 100 FCs after the effective date of this AD, whichever occurs later
	HPC IBR-7	30G2307 or 30G4407	
	HPC IBR-8	30G5608 or 30G5908 or 30G8908	
	HPT 1st-stage hub	30G7301	
	HPT 2nd-stage hub	30G6602	
2	HPC rear hub	30G8208	Before accumulating 5,000 CSN or within 100 FCs after the effective date of this AD, whichever occurs later
	HPC IBR-7	30G2307 or 30G4407	
	HPC IBR-8	30G5608 or 30G5908 or 30G8908	
	HPT 1st-stage hub	30G7301	

Engine Group	Part Name	Part Number	Compliance Time
	HPT 2nd-stage hub	30G6602	

(5) For Group 1 and Group 2 engines with an installed HPT 1st-stage hub having P/N 30G6201 or an HPT 2nd-stage hub having P/N 30G5502 and an S/N listed in Tables 1, 2, 3, or 4 of PW SI NO. 149F-23 that has not had an AUSI performed before the effective date of this AD, before further flight, remove the affected hub from service.

(6) For Group 1 and Group 2 engines with an installed HPT 1st-stage hub having P/N 30G7301 or an HPT 2nd-stage hub having P/N 30G6602 with an S/N listed in Tables 1, 2, 3, or 4 of PW SI NO. 198F-23, dated November 3, 2023, within 100 FC after the effective date of this AD, perform an AUSI of the affected hub for cracks in accordance with the Accomplishment Instructions, paragraph 1.D.(7)(a) or 1.D.(7)(b) of PW ASB PW1000G-C-72-00-0225-00A-930A-D.

(7) For Group 1 and Group 2 engines with an installed HPT 1st-stage hub having P/N 30G6201 or an HPT 2nd-stage hub having P/N 30G5502 with an S/N listed in Tables 1, 2, 3, or 4 of PW SI NO. 198F-23, dated November 3, 2023, within 100 FC after the effective date of this AD, remove the hub from service and replace with a part eligible for installation.

(8) If any crack is found during any inspection required by this AD, before further flight, remove the affected part from service and replace with a part eligible for installation.

(9) If an affected part has accumulated 100 FCs or less since the last AUSI, reinspection is not required provided that the part was not damaged during removal from the engine.

(i) Definitions

(1) For the purposes of this AD, “Group 1 engines” are IAE LLC Model PW1122G-JM, PW1124G1-JM, PW1124G-JM, PW1127G-JM, PW1127G1-JM, and PW1127GA-JM engines.

(2) For the purposes of this AD, "Group 2 engines" are IAE LLC Model PW1129G-JM, PW1130G-JM, PW1133G-JM, PW1133GA-JM, PW1428G-JM, PW1428GA-JM, PW1428GH-JM, PW1431G-JM, PW1431GA-JM, and PW1431GH-JM engines.

(3) For the purposes of this AD, an "HPC engine shop visit" is the induction of an engine into the shop for maintenance involving the separation of the H-flange.

(4) For the purposes of this AD, an "HPT engine shop visit" is the induction of an engine into the shop for maintenance involving the separation of the M-flange.

(5) For the purposes of this AD, a "part eligible for installation" is:

(i) An HPC IBR-7 having P/N 30G2307 or 30G4407, that has passed the AUSI required by paragraph (h)(1) of this AD or later approved P/N.

(ii) An HPC IBR-8 having, P/N 30G5608, 30G5908, or 30G8908 that has passed the AUSI required by paragraph (h)(1) of this AD or later approved P/N.

(iii) An HPT 1st-stage hub having P/N 30G7301 that has passed the AUSI required by paragraph (h)(2) of this AD or later approved P/N.

(iv) An HPT 2nd-stage hub having P/N 30G6602 that has passed the AUSI required by paragraph (h)(2) of this AD or later approved P/N.

(v) An HPC rear hub, P/N 30G8208 or later approved P/N.

(vi) An HPT 1st-stage front air seal, P/N 30G4617 or later approved P/N.

(vii) An HPT 2nd-stage rear air seal, P/N 30G4811 or later approved P/N.

(viii) An HPT 1st-stage blade retaining plate, P/N 30G6059, 31G0018 or later approved P/N.

(j) Credit for Previous Actions

This paragraph provides credit for the actions specified in paragraph (g)(1) and (2) of this AD, if those actions were performed before the effective date of this AD using PW Service Bulletin PW1000G-C-72-00-0188-00A-930A-D, Issue No: 001, dated September 13, 2021. This service information is not incorporated by reference in this AD.

(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 of the AIR-520 Continued Operational Safety Branch, send it to the attention of the person identified in paragraph (l)(1) of this AD.

(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.

(l) Additional Information

(1) 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.

(2) Service information identified in this AD that is not incorporated by reference is available at the addresses specified in paragraphs (m)(6) and (7) of this AD.

(m) 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.

(3) The following service information was approved for IBR on [DATE 35 DAYS AFTER PUBLICATION OF THE FINAL RULE].

(i) Pratt & Whitney (PW) Alert Service Bulletin PW1000G-C-72-00-0224-00A-930A-D, Issue No: 001, dated November 3, 2023.

(ii) PW Alert Service Bulletin PW1000G-C-72-00-0225-00A-930A-D, Issue No: 001, dated November 3, 2023.

(iii) PW Special Instruction NO. 198F-23, dated November 3, 2023.

(4) The following service information was approved for IBR on August 28, 2023 (88 FR 56999, August 22, 2023).

(i) PW Special Instruction NO. 149F-23, dated August 4, 2023.

(ii) [Reserved]

(5) The following service information was approved for IBR on November 7, 2022 (87 FR 59660, October 3, 2022; corrected October 24, 2022 (87 FR 64156)).

(i) PW Service Bulletin PW1000G-C-72-00-0188-00A-930A-D, Issue No: 002, dated July 8, 2022.

(ii) [Reserved]

(6) For PW 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.

(7) 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.

(8) 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 December 21, 2023.

Caitlin Locke,
Director, Compliance & Airworthiness Division,
Aircraft Certification Service.

[FR Doc. 2023-28693 Filed: 12/22/2023 4:15 pm; Publication Date: 12/28/2023]