[4910-13-P]

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2023-1638; Project Identifier AD-2022-00466-E]

RIN 2120-AA64

Airworthiness Directives; Pratt & Whitney Division Engines

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Notice of proposed rulemaking (NPRM).

SUMMARY: The FAA proposes to supersede Airworthiness Directive (AD) 2018-02-10, which applies to certain Pratt & Whitney Division (PW) Model PW4074, PW4074D, PW4077, PW4077D, PW4084D, PW4090, and PW4090-3 engines. AD 2018-02-10 requires performing repetitive fluorescent penetrant inspections (FPIs) to detect cracks in the outer diffuser case (ODC), removal of any ODC that fails inspection, and requires updating the mandatory inspections in the Airworthiness Limitations Section (ALS) of the Instructions for Continued Airworthiness (ICA). Since the FAA issued AD 2018-02-10, PW developed a modification to reduce the susceptibility of ODC cracking. This proposed AD would retain the ALS update requirement from AD 2018-02-10, would require replacing certain ODC part numbers with parts eligible for installation, would expand the applicability to all ODC part numbers, and would adjust the compliance threshold of the FPIs of the ODC. 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. 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 by searching for and locating Docket No. FAA-2023-1638; 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 service information identified in this NPRM, contact Pratt & Whitney Division, 400 Main Street, East Hartford, CT 06118; phone: (860) 565-0140; email: help24@prattwhitney.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-2023-1638; Project Identifier AD-2022-00466-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 2018-02-10, Amendment 39-19163 (83 FR 2896, January 22, 2018), (AD 2018-02-10), for PW Model PW4074, PW4074D, PW4077, PW4077D, PW4084D, PW4090, and PW4090-3 engines with ODC part number (P/N) 50J775 or P/N 50J930, installed. AD 2018-02-10 was prompted by the discovery of multiple cracked ODCs. AD 2018-02-10 requires initial and repetitive FPIs of the ODC to detect cracks, and depending on the results of the FPI, replacement of any ODC that fails inspection. Also, AD 2018-02-10 requires updating the mandatory inspections in the ALS of the ICA to include piece-part inspections. The agency issued AD 2018-02-10 to prevent failure of the ODC.

Actions Since AD 2018-02-10 Was Issued

Since the FAA issued AD 2018-02-10, PW determined that cracks on the ODC originated due to high stress in the area between Tt3 boss and thermocouple bracket boss. PW developed a modification to improve the surface area between Tt3 boss and thermocouple bracket boss to reduce the ODC's susceptibility to cracking.

Consequently, the FAA determined that it is necessary to expand the applicability to all ODC P/Ns, adjust the initial FPI threshold for the ODC to improve the inspection program, and to require certain ODCs to be replaced with an ODC that has been modified to lower the stresses in the area between Tt3 boss and thermocouple bracket boss. This condition, if not addressed, could result in failure of the ODC, uncontained ODC release, damage to the engine, and damage to 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 PW Alert Service Bulletin (ASB) PW4G-112-A72-347, Revision 4, dated September 1, 2022. This ASB provides guidance on performing FPIs on certain bosses of the ODC. 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.

Other Related Service Information

The FAA reviewed PW Service Bulletin (SB) PW4G-112-72-357, dated February 25, 2019. This SB provides procedures to modify and re-identify ODC assemblies to lower the stresses in the area between the Tt3 boss and the thermocouple bracket boss.

Proposed AD Requirements in this NPRM

This proposed AD would retain certain requirements of AD 2018-02-10. This proposed AD would require revising the ALS of the existing airplane maintenance manual or ICA and your existing approved maintenance program, as applicable, to include piece-part inspections of the ODC, would expand the applicability to include all

engines, would require initial and repetitive FPIs, and depending on the results of the FPI, would require removal or re-inspection of the ODC. This proposed AD would also require replacement of certain ODCs with a part eligible for installation at next piece-part exposure.

Costs of Compliance

The FAA estimates that this AD, if adopted as proposed, would affect 108 engines installed on airplanes of U.S. registry. The FAA has no way to determine the number of operators that will replace the ODC with a modified ODC or a zero-time ODC. As a result, the total cost on U.S. operators for these actions is not estimated.

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
Perform high sensitivity FPI of the ODC T3 thermocouple probe boss	10 work-hours x $85 per hour = $850	$0	$850	$91,800
Revise the ALS	1 work-hour x $85 per hour = $85	$0	$85	$9,180
Replacement of ODC with modified ODC	3 work-hours x $85 per hour = $255	$12,000	$12,255	
Replacement of ODC with zero-time ODC	3 work-hours x $85 per hour = $255	$2,300,000	$2,300,255	

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 2018-02-10, Amendment 39-19163 (83 FR 2896, January 22, 2018); and

b. Adding the following new airworthiness directive:

Pratt & Whitney Division: Docket No. FAA-2023-1638; Project Identifier AD-2022-00466-E.

(a) Comments Due Date

The FAA must receive comments on this airworthiness directive (AD) action by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

(b) Affected ADs

This AD replaces AD 2018-02-10, Amendment 39-19163 (83 FR 2896, January 22, 2018).

(c) Applicability

This AD applies to Pratt & Whitney Division (PW) Model PW4074, PW4074D, PW4077, PW4077D, PW4084D, PW4090, and PW4090-3 engines.

(d) Subject

Joint Aircraft System Component (JASC) Code 7240, Turbine Engine Combustion Section.

(e) Unsafe Condition

This AD was prompted by the discovery of multiple cracked outer diffuser cases (ODCs). We are issuing this AD to prevent failure of the ODC. This condition, if not addressed, could result in failure of the ODC, damage to the engine, and damage to the airplane.

(f) Compliance

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

(g) Required Actions

(1) Within the compliance times specified in paragraphs (g)(1)(i) though (iii) of this AD, perform an initial high sensitivity fluorescent penetrant inspection (FPI) of the ODC T3 thermocouple probe boss (Tt3 boss) for crack indications in accordance with the Accomplishment Instructions, paragraph 1.F. of Part A or paragraph 1.B. of Part B, as applicable, of PW Alert Service Bulletin PW4G-112-A72-347, Revision 4, dated September 1, 2022 (ASB PW4G-112-A72-347, Rev 4).

(i) For an ODC that has accumulated less than 12,000 cycles since new (CSN) with no prior high sensitivity FPI of the ODC Tt3 boss, perform the high sensitivity FPI

before accumulating 9,200 CSN or within 1,000 flight cycles (FCs), after the effective date of this AD, whichever occurs later.

(ii) For an ODC with unknown CSN or an ODC that has accumulated 12,000 CSN or more with no prior high sensitivity FPI of the ODC Tt3 boss, perform the high sensitivity FPI before accumulating 13,000 CSN or within 1,000 FCs, after February 26, 2018 (the effective date of AD 2018-02-10), whichever occurs later.

(iii) For an ODC that has undergone a high sensitivity FPI of the ODC Tt3 boss prior to the effective date of this AD that resulted in no crack indication, perform the high sensitivity FPI before accumulating 2,000 FCs since performance of the last FPI or during the next engine shop visit, whichever occurs first.

(iv) For an ODC that has undergone a high sensitivity FPI of the ODC Tt3 boss prior to the effective date of this AD that resulted in an indication of a crack, perform the actions required by paragraphs (g)(3)(i) through (iii) of this AD, as applicable.

(2) Thereafter, repeat the high sensitivity FPI of the ODC Tt3 boss at each engine shop visit or before exceeding 2,000 FCs from the last high sensitivity FPI of the ODC Tt3 boss, whichever occurs first, in accordance with the Accomplishment Instructions, paragraphs 1.F. of Part A or paragraph 1.B. of Part B, as applicable, of ASB PW4G-112-A72-347, Rev 4.

(3) If, during any inspection required by paragraphs (g)(1) or (2) of this AD, there is any crack indication, perform the actions specified in paragraphs (g)(3)(i) through (iii) of this AD.

(i) For engines installed on an aircraft, repeat the high sensitivity FPI or remove the ODC from service in accordance with the actions and compliance times specified in the Accomplishment Instructions, Part A, paragraphs 1.G. and 1.H., of ASB PW4G-112-A72-347, Rev 4.

(ii) For engines not installed on an aircraft, repeat the high sensitivity FPI or remove the ODC from service in accordance with the actions and compliance times specified in the Accomplishment Instructions, Part B, paragraphs 1.C. and 1.D., of PW ASB PW4G-112-A72-347, Rev 4.

(iii) For engines at an engine shop visit, before further flight, remove the ODC from service.

(4) Within 30 days after the effective date of this AD, revise the Airworthiness Limitations Section (ALS) of the existing engine maintenance manual or Instructions for Continued Airworthiness and the existing approved maintenance program, as applicable, to include the piece-part inspections of the ODC as defined in Table 1 to paragraph (g)(4) of this AD.

Table 1 to Paragraph (g)(4) – Addition to ALS

Description	**Part Number**	**Cleaning, Inspection and Repair (CIR) Manual Section**	**CIR Manual Inspection**	**CIR Manual**
Case, Diffuser, Outer	All	72-41-13	Inspection/Check (I/C-02)	P/N 51A750

(5) For engines with ODC part number (P/N) 50J775 or 50J930 installed, at the next piece-part exposure after the effective date of this AD, replace the ODC with a part eligible for installation.

(h) Definitions

(1) For the purpose of this AD, an "engine shop visit" is any time the "M" flange is separated.

(2) For the purpose of this AD, a "piece-part exposure" is when the ODC is removed from the engine and fully disassembled.

(3) For the purpose of this AD, a "part eligible for installation" is an ODC with P/N 50J775-001, 50J775-002, 50J930-001, or 50J930-002.

(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 certification office, 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 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

(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 PW4G-112-A72-347, Revision 4, dated September 1, 2022.

(ii) [Reserved]

(3) For service information identified in this AD, contact Pratt & Whitney Division, 400 Main Street, East Hartford, CT 06118; phone: (800) 565-0140; email: help24@prattwhitney.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. 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: fr.inspection@nara.gov, or go to: www.archives.gov/federal-register/cfr/ibr-locations.html.

Issued on July 21, 2023.

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

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