[4910-13-P]

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2024-2539; Project Identifier MCAI-2023-00971-E; Amendment 39-22985; AD 2025-05-13]

RIN 2120-AA64

Airworthiness Directives; Pratt & Whitney Canada Corp. Engines

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule.

SUMMARY: The FAA is adopting a new airworthiness directive (AD) for certain Pratt & Whitney Canada Corp. (P&WC) Model PW535E and PW535E1 engines. This AD was prompted by a manufacturer design review that indicated certain flange bolts securing the gas generator case and turbine support case are susceptible to cracking at their current low-cycle fatigue (LCF) life. This AD requires repetitive borescope inspections (BSI) of the gas generator case to turbine support case retaining bolts for evidence of bolt cracks, bolt fracture, missing bolts, or loose bolts and replacement, if necessary, as specified in a Transport Canada AD, which is incorporated by reference. The FAA is issuing this AD to address the unsafe condition on these products.

DATES: This AD is effective [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

The Director of the Federal Register approved the incorporation by reference of a certain publication listed in this AD as of [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

ADDRESSES:

AD Docket: You may examine the AD docket at regulations.gov under Docket No.FAA-

2024-2539; 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, the mandatory continuing airworthiness information (MCAI), 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 Transport Canada material identified in this AD, contact Transport Canada, Transport Canada National Aircraft Certification, 159 Cleopatra Drive, Nepean, Ontario, K1A 0N5, Canada; phone: (888) 663-3639; email:TC.AirworthinessDirectives-Consignesdenavigabilite.TC@tc.gc.ca; website: tc.canada.ca/en/aviation.

• You may view this material 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. It is also available at regulations.gov under Docket No. FAA-2024-2539.

FOR FURTHER INFORMATION CONTACT: Barbara Caufield, Aviation Safety Engineer, FAA, 2200 South 216th Street, Des Moines, WA 98198; phone: (781) 238-7146; email: barbara.caufield@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 P&WC Model PW535E and PW535E1 engines. The NPRM published in the *Federal Register* on November 26, 2024 (89 FR 93225). The NPRM was prompted by Transport Canada AD CF-2023-60, dated August 14, 2023 (Transport Canada AD CF-2023-60) (also referred to as the MCAI), issued by

Transport Canada, which is the aviation authority for Canada. The MCAI states that data from a design review by the manufacturer identified insufficient LCF life for flange bolts, having part number (P/N) MS9696-08 and P/N MS9489-06, that secure the engine gas generator and turbine support cases. At certain high-stress circumferential locations, LCF cracks could develop on the flange bolt and lead to fracture of the bolt. Multiple fractured bolts could lead to flange separation or case rupture, which may damage the engine and the airplane. To address this unsafe condition, the manufacturer published material that provides instructions for repetitive BSIs and replacement of the affected parts.

In the NPRM, the FAA proposed to require repetitive BSI of the gas generator case to turbine support case retaining bolts for evidence of bolt cracks, bolt fracture, missing bolts, or loose bolts, and replacement, if necessary. The FAA is issuing this AD to address the unsafe condition on these products.

You may examine the MCAI in the AD docket at regulations.gov under Docket No. FAA-2024-2539.

Discussion of Final Airworthiness Directive

Comments

The FAA received no comments on the NPRM or on the determination of the costs.

Conclusion

These products have been approved by the aviation authority of another country and are approved for operation in the United States. Pursuant to the FAA's bilateral agreement with this State of Design Authority, it has notified the FAA of the unsafe condition described in the MCAI referenced above. The FAA reviewed the relevant data 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, this AD is adopted as proposed in the NPRM.

Material Incorporated by Reference under 1 CFR Part 51

The FAA reviewed Transport Canada AD CF-2023-60, which identifies the affected gas generator case to turbine support case retaining bolts and specifies procedures for repetitive BSIs and replacement.

This material 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.

Differences Between this AD and the MCAI

Where the service information referenced in Transport Canada AD CF-2023-60 requires reporting certain information to the manufacturer, this AD does not require such a submission.

Costs of Compliance

The FAA estimates that this AD affects 521 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 of gas generator case to turbine support case retaining bolts	2 work-hours x $85 per hour = $170	$0	$170	$88,570

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

On-condition costs

Action	Labor Cost	Parts Cost	Cost per product
Replacement of the gas generator case to turbine support case retaining bolts	4 work-hours x $85 per hour = $340	$337,701	$338,041

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(f), 40113, 44701.

§ 39.13 [Amended]

2. The FAA amends § 39.13 by adding the following new airworthiness directive:

2025-05-13 Pratt & Whitney Canada Corp.: Amendment 39-22985; Docket No. FAA-2024-2539; Project Identifier MCAI-2023-00971-E.

(a) Effective Date

This airworthiness directive (AD) is effective [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

(b) Affected ADs

None.

(c) Applicability

This AD applies to Pratt & Whitney Canada Corp. (P&WC) Model PW535E and PW535E1 engines, as identified in Transport Canada Civil Aviation AD CF-2023-60, dated August 14, 2023 (Transport Canada AD CF-2023-60).

(d) Subject

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

(e) Unsafe Condition

This AD was prompted by a manufacturer design review that indicated certain flange bolts securing the gas generator case and turbine support case have an inadequate

low-cycle fatigue life. The FAA is issuing this AD to prevent crack, fracture, missing, or loosening of the gas generator case to turbine support case retaining bolts. The unsafe condition, if not addressed, could result in uncontained engine debris, 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

Except as specified in paragraphs (h) and (i) of this AD: Perform all required actions within the compliance times specified in, and in accordance with, Transport Canada AD CF-2023-60.

(h) Exceptions to Transport Canada AD CF-2023-60

(1) Where Transport Canada AD CF-2023-60 requires compliance from its effective date, this AD requires using the effective date of this AD.

(2) Where paragraph A.1. of Transport Canada AD CF-2023-60 refers to "discrepancy," this AD defines that as "evidence of bolt cracks, bolt fracture, missing bolts, or loose bolts."

(3) Where paragraph A.2. in Transport Canada AD CF-2023-60 specifies to "Repeat the above paragraph A.1. inspection and rectification requirements of this AD at intervals not to exceed 400 engine cycles," this AD requires replacing that text with "Repeat the above paragraph A.1. inspection and rectification requirements of this AD thereafter at intervals not to exceed 400 engine cycles."

(4) Where paragraph A.1. in Transport Canada AD CF-2023-60 specifies to "Inspect the bolts P/N MS9696-08 and P/N MS9489-06 within 400 cycles from the effective date of this AD," this AD requires replacing that text with "Inspect affected bolts having P/N MS9696-08 and P/N MS9489-06 within 400 engine cycles from the effective date of this AD."

(5) Where paragraph A.1. in Transport Canada AD CF-2023-60 specifies to "rectify any discrepancy in accordance with the Accomplishment Instructions of the applicable SB," this AD requires replacing that text with "Following inspection, if any bolts are determined to be in an unserviceable condition, before further flight, replace the affected bolts in accordance with the applicable SB."

(i) No Reporting Requirement

Although the service information referenced in Transport Canada AD CF-2023-60 specifies to submit certain information to the manufacturer, this AD does not include that requirement.

(j) Alternative Methods of Compliance (AMOCs)

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 (k) of this AD and email to: 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 Barbara Caufield, Aviation Safety Engineer, FAA, 2200 South 216th Street, Des Moines, WA 98198; phone: (781) 238-7146; email: barbara.caufield@faa.gov.

(l) Material Incorporated by Reference

(1) The Director of the Federal Register approved the incorporation by reference of the material listed in this paragraph under 5 U.S.C. 552(a) and 1 CFR part 51.

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

(i) Transport Canada AD CF-2023-60, dated August 14, 2023.

(ii) [Reserved]

(3) For Transport Canada material identified in this AD, contact Transport Canada, Transport Canada National Aircraft Certification, 159 Cleopatra Drive, Nepean, Ontario K1A 0N5, Canada; phone: (888) 663-3639; email: TC.AirworthinessDirectives-Consignesdenavigabilite.TC@tc.gc.ca; website: tc.canada.ca/en/aviation.

(4) You may view this material 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.

(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-locations or email fr.inspection@nara.gov.

Issued on March 6, 2025.

Peter A. White,
Deputy Director, Integrated Certificate Management Division,
Aircraft Certification Service.

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