[4910-13-P]

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2022-1478; Project Identifier MCAI-2022-00668-E; Amendment 39-22337; AD 2023-03-12]

RIN 2120-AA64

Airworthiness Directives; Pratt & Whitney Canada Corp. Turbofan Engines

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule.

SUMMARY: The FAA is superseding Airworthiness Directive (AD) 2004-04-09, which applied to certain Pratt & Whitney Canada Corp. (P&WC) JT15D-1, JT15D-1A, and JT15D-1B model turbofan engines. AD 2004-04-09 required a one-time borescope inspection (BSI) of the rear face of certain impellers for evidence of a machined groove or step, and repair or replacement of the impeller if a groove or step is found. Since the FAA issued AD 2004-04-09, the FAA was notified of an uncontained failure of an impeller installed on a P&WC JT15D-1A engine during takeoff and subsequent investigation by the manufacturer that discovered machining marks on the impeller. This AD was prompted by three prior reports of uncontained failure of the impeller, and one additional recent report of an in-service uncontained failure event. This AD requires borescope fluorescent penetrant inspection (FPI) of the rear face of certain impellers for evidence of machining witness lines and, depending on the results of the inspection, replacement of the impeller, 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-2022-1478; 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 service information incorporated by reference in this AD, contact Transport Canada, Transport Canada National Aircraft Certification, 159 Cleopatra Drive, Nepean, Ontario K1A 0N5, Canada; phone: (888) 663-3639; email: AD-CN@tc.gc.ca; website: tc.canada.ca/en/aviation.

• 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. It is also available in the AD docket at regulations.gov under Docket No. FAA-2022-1478.

FOR FURTHER INFORMATION CONTACT: Barbara Caufield, Aviation Safety Engineer, ECO Branch, FAA, 1200 District Avenue, Burlington, MA 01803; 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 to supersede AD 2004-04-09, Amendment 39-13490 (69 FR 9520, March 1, 2004) (AD 2004-04-09). AD 2004-04-09 applied to certain P&WC JT15D-1, JT15D-1A, and JT15D-1B model turbofan engines. AD 2004-04-09 required a one-time BSI of the rear face of certain impellers for evidence of a machined groove or step, and repair or replacement of the impeller if a groove or step is found. The FAA issued AD 2004-04-09 to prevent uncontained failure of the impeller and possible damage to the airplane.

The NPRM published in the *Federal Register* on November 18, 2022 (87 FR 69231). The NPRM was prompted by AD CF-2022-27, dated May 19, 2022 (Transport Canada AD CF-2022-27), issued by Transport Canada, which is the aviation authority for Canada (referred to after this as the MCAI). The MCAI states that there has been one recent in-service event of a JT15D-1A engine uncontained failure during a takeoff roll of the airplane. An investigation by P&WC has determined that a crack originated from machining marks on the back face of the impeller and subsequently propagated until the impeller fractured. There is evidence that the event engine had been previously inspected in accordance with P&WC Service Bulletin (SB) No. JT15D-72-7590, dated May 23, 2003 (mandated by Transport Canada AD CF-2003-17, dated June 23, 2003), but it appears that the machining marks were not detected. P&WC, therefore, published P&WC SB JT15D-72-7655, Original Issue, dated April 14, 2022, to inspect the rear face of the impeller using a new borescope FPI procedure. As a result, Transport Canada issued AD CF-2022-27 to require accomplishment of the borescope FPI at the next hot section inspection until the impeller, part number 3020365, is replaced at the next scheduled engine overhaul.

You may examine the MCAI in the AD docket at regulations.gov under Docket No. FAA-2022-1478.

In the NPRM, the FAA proposed to require borescope FPI of the rear face of certain impellers for evidence of machining witness lines and, depending on the results of the inspection, replacement of the impeller, as specified in Transport Canada AD CF-2022-27. The FAA is issuing this AD to address the unsafe condition on these products.

Discussion of Final Airworthiness Directive

Comments

The FAA received no comments on the NPRM or on the determination of the cost to the public.

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.

Related Service Information under 1 CFR Part 51

The FAA reviewed Transport Canada AD CF-2022-27, which specifies instructions for performing a one-time inspection of the rear face of the impeller and replacing the impeller if unacceptable machining witness lines or crack indications are found. Transport Canada AD CF-2022-27 also specifies instructions for replacing the impeller at the next scheduled engine overhaul. 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.

Costs of Compliance

The FAA estimates that this AD affects 100 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
Inspect impeller	6 work-hours x $85 per hour = $510	$0	$510	$51,000
Replace impeller	30 work-hours x $85 per hour = $2,550	$75,000	$77,550	7,755,000

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 has determined that 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(g), 40113, 44701.

§ 39.13 [Amended]

2. The FAA amends § 39.13 by:

a. Removing Airworthiness Directive 2004-04-09, Amendment 39-13490 (69 FR 9520, March 1, 2004); and

b. Adding the following new airworthiness directive:

2023-03-12 Pratt & Whitney Canada Corp.: Amendment 39-22337; Docket No. FAA-2022-1478; Project Identifier MCAI-2022-00668-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

This AD replaces AD 2004-04-09, Amendment 39-13490 (69 FR 9520, March 1, 2004).

(c) Applicability

This AD applies to Pratt & Whitney Canada Corp. JT15D-1, JT15D-1A, and JT15D-1B model turbofan engines as identified in Transport Canada AD CF-2022-27, dated May 19, 2022 (Transport Canada AD CF-2022-27).

(d) Subject

Joint Aircraft Service Component (JASC) Code 7230, Turbine Engine Compressor Section.

(e) Unsafe Condition

This AD was prompted by three prior reports of uncontained failure of the impeller, and one additional recent report of an in-service uncontained failure event. The FAA is issuing this AD to prevent uncontained failure of the impeller. The unsafe condition, if not addressed, could result in fracture of the impeller, subsequent uncontained failure of 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 paragraph (h) of this AD: Perform all required actions within the compliance times specified in, and in accordance with, Transport Canada AD CF-2022-27.

(h) No Reporting Requirement

Although the service information referenced in Transport Canada AD CF-2022-27 specifies to submit certain information to the manufacturer, this AD does not include that requirement.

(i) 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 (j) of this AD and email it 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) Additional Information

For more information about this AD, contact Barbara Caufield, Aviation Safety Engineer, ECO Branch, FAA, 1200 District Avenue, Burlington, MA 01803; phone: (781) 238-7146; email: barbara.caufield@faa.gov.

(k) Material Incorporated by Reference

(1) The Director of the Federal Register approved the incorporation by reference 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) Transport Canada AD CF-2022-27, dated May 19, 2022.

(ii) [Reserved]

(3) For Transport Canada AD CF-2022-27, contact Transport Canada, Transport Canada National Aircraft Certification, 159 Cleopatra Drive, Nepean, Ontario K1A 0N5, Canada; phone: 888-663-3639; email: AD-CN@tc.gc.ca; website: tc.canada.ca/en/aviation.

(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, or go to: www.archives.gov/federal-register/cfr/ibr-locations.html.

Issued on February 7, 2023.

Christina Underwood, Acting Director,
Compliance & Airworthiness Division,
Aircraft Certification Service.

[FR Doc. 2023-03605 Filed: 2/23/2023 8:45 am; Publication Date: 2/24/2023]