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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. 2003-NE-24-AD; Amendment 39-13211; AD 2003-13-11]

RIN 2120-AA64

Airworthiness Directives; Pratt & Whitney PW4074, PW4074D, PW4077, PW4077D, PW4090, and PW4090-3 Turbofan Engines

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule; request for comments.

SUMMARY: The FAA is adopting a new airworthiness directive (AD) for Pratt & Whitney (PW) PW4074, PW4074D, PW4077, PW4077D, PW4090, and PW4090-3 turbofan engines with high pressure compressor (HPC) rear cases, part numbers (P/Ns) 55H425-01, 55H385-01, and 56H396-01 installed. This AD requires initial and repetitive visual or fluorescent penetrant inspections (FPI) of the J flange on the HPC rear case, and removal from service of the rear case based on certain inspection results. This AD is prompted by reports of cracks propagating from bolt holes in the HPC rear case J flange, and reports of high-cycle HPC rear cases exhibiting cracks propagating into the shell wall. The actions specified in this AD are intended to prevent fracturing and rupturing of the HPC rear case, resulting in uncontained engine failure.

DATES: Effective July 15, 2003. The Director of the Federal Register approved the incorporation by reference of certain publications listed in the regulations as of July 15, 2003.

We must receive any comments on this AD by August 29, 2003.

ADDRESSES: Use one of the following addresses to submit comments on this AD:

- By mail: The Federal Aviation Administration (FAA), New England Region, Office of the Regional Counsel, Attention: Rules Docket No. 2003-NE-24-AD, 12 New England Executive Park, Burlington, MA 01803-5299.
- By fax: (781) 238-7055.
- By e-mail: 9-ane-adcomment@faa.gov

You may get the service information referenced in this AD from Pratt & Whitney, 400 Main St., East Hartford, CT 06108, telephone (860) 565-6600; fax (860) 565-4503.

You may examine the AD docket at the FAA, New England Region, Office of the Regional Counsel, 12 New England Executive Park, Burlington, MA. You may examine the service information at the FAA, New England Region, Office of the Regional Counsel, 12 New England Executive Park, Burlington, MA; or at the Office of the Federal Register, 800 North Capitol Street, NW., suite 700, Washington, DC.

FOR FURTHER INFORMATION CONTACT: Keith Lardie, Aerospace Engineer, Engine Certification Office, FAA, Engine and Propeller Directorate, 12 New England Executive Park, Burlington, MA 01803-5299; telephone (781) 238-7189; fax (781) 238-7199.

SUPPLEMENTARY INFORMATION: This AD applies to PW PW4074, PW4074D, PW4077, PW4077D, PW4090, and PW4090-3 turbofan engines with HPC rear cases, P/Ns 55H425-01, 55H385-01, and 56H396-01 installed. This AD requires initial and repetitive visual or FPI inspections of the J flange on HPC rear cases, P/Ns 55H425-01, 55H385-01, and 56H396-01, which were previously produced with or modified to a scalloped flange configuration using PW Service Bulletin (SB) No. PW4G-112-72-150, dated April 16, 1998, or SB No. PW4G-112-72-151, dated April 16, 1998, or SB No. PW4G-112-72-195, dated May 5, 1999. This AD also requires removal from service of the rear case based on certain inspection results. This AD is prompted by 32 reports of cracks propagating from bolt holes in the HPC rear case J flange, and reports of high-cycle HPC rear cases exhibiting cracks propagating into the shell wall. The HPC rear cases, P/Ns 55H425-01, 55H385-01, and 56H396-01 were produced with or modified by PW SBs to incorporate a scalloped J flange design as corrective action to eliminate flange cracking at the bolt holes. The scalloped flange has not been effective in eliminating J flange cracking. Cracks found propagating into the shell wall could result in loss of case integrity, and require immediate removal before further flight. The actions specified in this AD are intended to prevent fracturing and rupturing of the HPC rear case, resulting in uncontained engine failure.

Relevant Service Information

We have reviewed and approved the technical contents of PW SB No. PW4G-112-72-256, dated April 2, 2003, that describes procedures for initial and repetitive visual or FPI inspections of the J flange on HPC rear cases, and removal from service of the rear case based on certain inspection results.

Differences Between This AD and the Service Information

This AD adds an additional inspection at bolt hole location number 69, which was not originally listed in PW SB No. PW4G-112-72-256, because one report of a crack at that location has been received since the service bulletin was released. Future revisions of PW SB No. PW4G-112-72-256 will include this inspection location.

FAA's Determination and Requirements of This AD

The unsafe condition described previously is likely to exist or develop on other PW PW4074, PW4074D, PW4077, PW4077D, PW4090, and PW4090-3 turbofan engines of the same type design. Therefore, we are issuing this AD to prevent fracturing and rupturing of the HPC rear case, resulting in uncontained engine failure. This AD requires:

- Initial and repetitive visual or FPI inspections of the J flange on HPC rear cases, P/Ns 55H425-01, 55H385-01, and 56H396-01.
- Removal of the rear case from service based on certain inspection results.

You must do these actions in accordance with the service information described previously.

FAA's Determination of the Effective Date

Since an unsafe condition exists that requires the immediate adoption of this AD, we have found that notice and opportunity for prior public comment are impracticable, and that good cause exists for making this amendment effective in less than 30 days.

Changes to 14 CFR Part 39—Effect on the AD

On July 10, 2002, we issued a new version of 14 CFR part 39 (67 FR 47997, July 22, 2002), which governs our AD system. This regulation now includes material that relates to special flight permits, alternative methods of compliance, and altered products. This material previously was included in each individual AD. Since this material is included in 14 CFR part 39, we will not include it in future AD actions.

Interim Action

These actions are interim actions and we may take further rulemaking actions in the future.

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, we invite you to submit any written relevant data, views, or arguments regarding this AD. Send your comments to an address listed under ADDRESSES. Include "AD Docket No. 2003-NE-24-AD" in the subject line of your comments. If you want us to acknowledge receipt of your mailed comments, send us a self-addressed, stamped postcard with the docket number written on it; we will date-stamp your postcard and mail it back to you. We specifically invite comments on the overall regulatory, economic, environmental, and energy aspects of the rule that might suggest a need to modify it. If a person contacts us through a nonwritten communication, and that contact relates to a substantive part of this AD, we will summarize the contact and place the summary in the docket. We will consider all comments received by the closing date and may amend the AD in light of those comments.

We are reviewing the writing style we currently use in regulatory documents. We are interested in your comments on whether the style of this document is clear, and your suggestions to improve the clarity of our communications with you. You may get more information about plain language at <http://www.plainlanguage.gov>.

Regulatory Findings

We have 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 the regulation:

1. Is not a "significant regulatory action" under Executive Order 12866;
2. Is not a "significant rule" under the DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979); 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.

We prepared a summary of the costs to comply with this AD and placed it in the AD Docket. You may get a copy of this summary by sending a request to us at the address listed under ADDRESSES. Include "AD Docket No. 2003-NE-24-AD" in your request.

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 Federal Aviation Administration amends part 39 of the Federal Aviation Regulations (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:

AIRWORTHINESS DIRECTIVE



Aircraft Certification Service
Washington, DC

U.S. Department
of Transportation
**Federal Aviation
Administration**

We post ADs on the internet at "www.faa.gov"

The following Airworthiness Directive issued by the Federal Aviation Administration in accordance with the provisions of Title 14 of the Code of Federal Regulations (14 CFR) part 39, applies to an aircraft model of which our records indicate you may be the registered owner. Airworthiness Directives affect aviation safety and are regulations which require immediate attention. You are cautioned that no person may operate an aircraft to which an Airworthiness Directive applies, except in accordance with the requirements of the Airworthiness Directive (reference 14 CFR part 39, subpart 39.3).

2003-13-11 Pratt & Whitney: Amendment 39-13211. Docket No. 2003-NE-24-AD.

Effective Date

- (a) This airworthiness directive (AD) becomes effective July 15, 2003.

Affected ADs

- (b) None.

Applicability

(c) This AD is applicable to Pratt & Whitney (PW) PW4074, PW4074D, PW4077, PW4077D, PW4090, and PW4090-3 turbofan engines with high pressure compressor (HPC) rear cases, part numbers (P/Ns) 55H425-01, 55H385-01, and 56H396-01 installed. These engines are installed on, but not limited to, Boeing 777 series airplanes.

Unsafe Condition

(d) This AD is prompted by 32 reports of cracks propagating from bolt holes in the HPC rear case J flange, two of which were reports of high-cycle HPC rear cases with cracks propagating into the shell wall, which required immediate removal before further flight. The actions specified in this AD are intended to prevent fracturing and rupturing of the HPC rear case, resulting in uncontained engine failure.

Compliance

- (e) Compliance with this AD is required as indicated, unless already done.

Initial Inspection

(f) Perform an initial visual or fluorescent penetrant inspection (FPI) of the HPC rear case J flange for cracks at bolt hole location numbers 22, 67, 68, and 69, in accordance with Accomplishment Instructions of PW Service Bulletin (SB) No. PW4G-112-72-256, dated April 2, 2003, using the compliance times specified in the following Table 1:

TABLE 1.—INITIAL INSPECTION SCHEDULE

HPC rear case P/N	For cycles accumulated of:	Then:
(1) 55H425–01 modified by PW SB No. PW4G–112–72–150, dated April 16, 1998.	(i) 4,000 or more cycles-since SB modification (CSM).	Inspect within 50 cycles-in-service (CIS) after the effective date of this AD.
	(ii) 2,500 CSM or more, but fewer than 4,000 CSM.	Inspect within 75 CIS after the effective date of this AD.
	(iii) 1,850 CSM or more, but fewer than 2,500 CSM.	Inspect within 150 CIS after the effective date of this AD.
	(iv) More than 1,700 CSM, but fewer than 1,850 CSM.	Inspect within 300 CIS after the effective date of this AD.
	(v) 1,700 CSM, or fewer	Inspect before accumulating 2,000 CSM
(2) 55H385–01, 55H396–01, and 55H425–01 incorporating a scalloped J.	(i) 7,200 or more CSN	Inspect within 300 CIS after the effective date of this AD.
	(ii) Fewer than 7,200 CSN	Inspect before accumulating 7,500 CSN.

Previous Credit

(g) Previous credit is allowed for initial inspections for cracks at bolt hole location numbers 22, 67, and 68 that were done in accordance with PW SB PW4G-112-72-256, dated April 2, 2003, before the effective date of this AD. Previous credit is also allowed for initial inspection of bolt hole location number 69 if bolt hole location number 68 was previously inspected before the effective date of this AD.

(h) Disposition the HPC rear cases using the criteria in the following Table 2:

TABLE 2.—HPC REAR CASE DISPOSITION CRITERIA

If HPC rear case has:	Then:
(1) One or more inboard cracks that have penetrated beyond the pedestal and into the shell wall.	Remove HPC rear case before further flight.
(2) One or more inboard cracks that have penetrated into the pedestal but not into the shell wall.	Remove HPC rear case within 25 cycles-since-last inspection (CSLI).
(3) One or more inboard cracks that have not penetrated into the pedestal.	Remove HPC rear case within 250 CSLI.
(4) One or more outboard cracks.	Perform repetitive inspections as specified in paragraph (i) of this AD.
(5) No cracks	Perform repetitive inspections as specified in paragraph (i) of this AD.

Repetitive Inspections

(i) Perform repetitive inspections of the HPC rear case J flange for cracks at bolt hole location numbers 22, 67, 68, and 69 in accordance with the Accomplishment Instructions of PW SB No. PW4G-112-72-256, dated April 2, 2003, and the following:

(1) If last inspection of HPC rear case was a visual inspection, then visually inspect or FPI within:

- (i) 600 CSLI if no cracks are found.
- (ii) 300 CSLI if one or more outboard cracks are found.

(2) If last inspection of HPC rear case was an FPI, then visually inspect or FPI within:

- (i) 1,000 CSLI if no cracks are found.
- (ii) 600 CSLI if one or more outboard cracks are found.

(3) Remove HPC rear cases from service or re-inspect rear cases using Table 2 of this AD.

Alternative Methods of Compliance

(j) Alternative methods of compliance must be requested in accordance with 14 CFR part 39.19, and must be approved by the Manager, Engine Certification Office, FAA.

Material Incorporated by Reference

(k) The inspections and removal from service of HPC rear cases must be done in accordance with Pratt & Whitney Service Bulletin No. PW4G-112-72-256, dated April 2, 2003. The Director of the Federal Register approved the incorporation by reference of this service bulletin in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. You may get a copy from Pratt & Whitney, 400 Main St., East Hartford, CT 06108, telephone (860) 565-6600; fax (860) 565-4503. You may review copies at the FAA, New England Region, Office of the Regional Counsel, 12 New England Executive Park, Burlington, MA; or at the Office of the Federal Register, 800 North Capitol Street, NW, suite 700, Washington, DC.

Related Information

(l) None.

Issued in Burlington, Massachusetts, on June 18, 2003.

Robert Mann,

Acting Manager, Engine and Propeller Directorate, Aircraft Certification Service.

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