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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2010-0217; Directorate Identifier 2009-NE-23-AD; Amendment 39-16427; AD 2010-18-13]

RIN 2120-AA64

Airworthiness Directives; Pratt & Whitney (PW) PW4000 Series Turbofan Engines

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule.

SUMMARY: The FAA is adopting a new airworthiness directive (AD) for PW PW4052, PW4056, PW4060, PW4062, PW4062A, PW4074, PW4077, PW4077D, PW4084D, PW4090, PW4090-3, PW4152, PW4156A, PW4158, PW4164, PW4168, PW4168A, PW4460, and PW4462 turbofan engines. This AD requires initial and repetitive fluorescent penetrant inspections (FPI) for cracks in the blade locking and loading slots of the high-pressure compressor (HPC) drum rotor disk assembly. This AD results from reports of cracked locking and loading slots in the HPC drum rotor disk assembly. We are issuing this AD to detect cracks in the locking and loading slots in the HPC drum rotor disk assemblies, which could result in rupture of the HPC drum rotor disk assembly and damage to the airplane.

DATES: This AD becomes effective October 18, 2010. The Director of the Federal Register approved the incorporation by reference of certain publications listed in the regulations as of October 18, 2010.

ADDRESSES: You can get the service information identified in this AD from Pratt & Whitney, 400 Main St., East Hartford, CT 06108; telephone (860) 565-7700; fax (860) 565-1605.

The Docket Operations office is located at Docket Management Facility, U.S. Department of Transportation, 1200 New Jersey Avenue, SE., West Building Ground Floor, Room W12-140, Washington, DC 20590-0001.

FOR FURTHER INFORMATION CONTACT: Rose Len, Aerospace Engineer, Engine Certification Office, FAA, Engine & Propeller Directorate, 12 New England Executive Park, Burlington, MA 01803; e-mail: rose.len@faa.gov; telephone (781) 238-7772; fax (781) 238-7199.

SUPPLEMENTARY INFORMATION: The FAA proposed to amend 14 CFR part 39 with a proposed AD. The proposed AD applies to PW PW4000 series turbofan engines. We published the proposed AD in the Federal Register on March 25, 2010 (75 FR 14375). That action proposed to require initial and repetitive FPI for cracks in the blade locking and loading slots of the HPC drum rotor disk assembly.

Examining the AD Docket

You may examine the AD docket on the Internet at <http://www.regulations.gov>; or in person at the Docket Operations office between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this AD, the regulatory evaluation, any comments received, and other information. The street address for the Docket Operations office (telephone (800) 647-5527) is provided in the ADDRESSES section. Comments will be available in the AD docket shortly after receipt.

Comments

We provided the public the opportunity to participate in the development of this AD. We have considered the comments received.

Concur With the AD as Proposed

Two commenters, United Services and Boeing, concurred with the AD as proposed.

Request To Reference the Latest Service Bulletin (SB)

One commenter, a private citizen, requested that we reference the latest SB in the AD, which is Pratt & Whitney SB No. PW4G-112-72-264, Revision 2, dated February 23, 2010.

We agree. We changed the AD to use the most current version of the SB.

Request To Change the Inspection Compliance Time

One commenter, Delta Tech Ops, requested that we change the inspection compliance time to be done only when all of the blades of a specific stage are removed, rather than when any of the blades from a specific stage are removed, as written in the proposed AD. The commenter states that doing the inspection when any blades are removed is an added maintenance burden.

We do not agree. Our risk assessment establishes that, because the rotating life-limited parts addressed by this AD action have a known cracking problem, the parts must be inspected at the times stated in the AD. Inspection can be done without removing all of the blades, by sliding remaining installed blades to expose the locking and loading slots for local fluorescent penetrant inspection. We did not change the AD.

Engine Model Removed

Since we issued the proposed AD, we became aware that we inadvertently listed engine model PW4156. We removed that engine model from the AD.

Conclusion

We have carefully reviewed the available data, including the comments received, and determined that air safety and the public interest require adopting the AD with the changes described previously.

We have determined that these changes will neither increase the economic burden on any operator nor increase the scope of the AD.

Costs of Compliance

We estimate that this AD will affect 1,038 engines installed on airplanes of U.S. registry. We also estimate that it will take about 1 work-hour per engine to perform the actions, and that the average labor rate is \$85 per work-hour. No parts are required. Based on these figures, we estimate the total cost of the AD to U.S. operators to be \$88,230.

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.

We are 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

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 this AD:

- (1) Is not a "significant regulatory action" under Executive Order 12866;
- (2) Is not a "significant rule" under 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 at the address listed under ADDRESSES.

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 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:



2010-18-13 Pratt & Whitney: Amendment 39-16427. Docket No. FAA-2010-0217; Directorate Identifier 2009-NE-23-AD.

Effective Date

(a) This airworthiness directive (AD) becomes effective October 18, 2010.

Affected ADs

(b) None.

Applicability

(c) This AD applies to Pratt & Whitney (PW) PW4052, PW4056, PW4060, PW4062, PW4062A, PW4074, PW4077, PW4077D, PW4084D, PW4090, PW4090-3, PW4152, PW4156A, PW4158, PW4164, PW4168, PW4168A, PW4460, and PW4462 turbofan engines. These engines are installed on, but not limited to, Boeing 747-400, 767-200, 767-300, 777-200, and 777-300 airplanes; McDonnell Douglas MD-11 airplanes; and Airbus A300-600, A310-300, and A330-200 airplanes.

Unsafe Condition

(d) This AD results from reports of cracked locking and loading slots in the high-pressure compressor (HPC) drum rotor disk assembly. We are issuing this AD to detect cracks in the locking and loading slots in the HPC drum rotor disk assemblies, which could result in rupture of the HPC drum rotor disk assembly and damage to the airplane.

Compliance

(e) You are responsible for having the actions required by this AD performed within the compliance times specified unless the actions have already been done.

Local Fluorescent Penetrant Inspection

(f) Perform a local fluorescent penetrant inspection for cracks in the HPC drum rotor disk assembly blade locking and loading slots of the specific stages of the HPC drum rotor disk assemblies from which any of the blades are removed as specified in Table 1 of this AD.

Table 1 – Compliance Times and Service Bulletins by Engine Model

For Engine Model	Inspect whenever ...	Use...
(1) PW4074, PW4077, PW4077D, PW4084D, PW4090, and PW4090-3.	Any of the 13 th or 14 th stage blades are removed during a shop visit.	Paragraphs 1.A. through 1.B. of the Accomplishment Instructions of PW4G-112-72-264, Revision 2, dated February 23, 2010.

(2) PW4164, PW4168, and PW4168A.	Any of the 13 th , 14 th , or 15 th stage blades are removed during a shop visit.	Paragraphs 1.A. through 1.C of the Accomplishment Instructions of PW4G-100-72-186, Revision 1, dated September 2, 2004.
(3) PW4052, PW4056, PW4060, PW4062, PW4062A, PW4152, PW4156A, PW4158, PW4460, and PW4462.	Any of the 13 th , 14 th , or 15 th stage blades are removed during a shop visit.	Paragraphs 1.A. through 1.C. of the Accomplishment Instructions of PW4ENG 72-796, dated June 11, 2009.

(g) Remove from service any HPC drum rotor disk assembly found with a crack in the blade loading and locking slots of the HPC drum rotor disk assembly.

Alternative Methods of Compliance

(h) The Manager, Engine Certification Office, has the authority to approve alternative methods of compliance for this AD if requested using the procedures found in 14 CFR 39.19.

Related Information

(i) Contact Rose Len, Aerospace Engineer, Engine Certification Office, FAA, Engine & Propeller Directorate, 12 New England Executive Park, Burlington, MA 01803; e-mail: rose.len@faa.gov; telephone (781) 238-7772; fax (781) 238-7199, for more information about this AD.

Material Incorporated by Reference

(j) You must use the service information specified in the following Table 2 to perform the inspections required by this AD. The Director of the Federal Register approved the incorporation by reference of the documents listed in the following Table 2 in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. Contact Pratt & Whitney, 400 Main St., East Hartford, CT 06108; telephone (860) 565-7700; fax (860) 565-1605, for a copy of this service information. You may review copies at the FAA, New England Region, 12 New England Executive Park, Burlington, MA; or at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202-741-6030, or go to: <http://www.archives.gov/federal-register/cfr/ibr-locations.html>.

Table 2 – Incorporation by Reference

Pratt & Whitney Service Bulletin No.	Page	Revision	Date
PW4G-100-72-186 Total Pages: 11	ALL	1	September 2, 2004
PW4G-112-72-264 Total Pages: 11	ALL	2	February 23, 2010
PW4ENG 72-796 Total Pages: 22	ALL	Original	June 11, 2009

Issued in Burlington, Massachusetts, on August 26, 2010.
Thomas A. Boudreau,
Acting Manager, Engine and Propeller Directorate,
Aircraft Certification Service.