

[4910-13-U]

**DEPARTMENT OF TRANSPORTATION**

**Federal Aviation Administration**

**14 CFR Part 39**

**[Docket No. FAA-2006-24487; Directorate Identifier 2006-NE-13-AD; Amendment 39-14810; AD 2006-22-13]**

**RIN 2120-AA64**

**Airworthiness Directives; Pratt & Whitney PW4074, PW4074D, PW4077, PW4077D, PW4084D, PW4090, PW4090-3, and PW4098 Turbofan Engines**

**AGENCY:** Federal Aviation Administration (FAA), Department of Transportation (DOT).

**ACTION:** Final rule.

**SUMMARY:** The FAA is adopting a new airworthiness directive (AD) for Pratt & Whitney PW4074, PW4074D, PW4077, PW4077D, PW4084D, PW4090, PW4090-3, and PW4098 turbofan engines, with certain front turbine hub part numbers installed. This AD requires a onetime visual inspection of the anti-rotation slots in the front turbine hub, for a machining nonconformance, and its replacement if the inspection failed. This AD results from a report of a crack found in an anti-rotation slot of a front turbine hub, during overhaul shop inspection. The anti-rotation slot geometry was not machined in conformance with the design drawing during manufacture. We are issuing this AD to prevent uncontained engine failure, damage to the airplane, and injury to passengers.

**DATES:** This AD becomes 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 certain publications listed in the regulations as of [insert date 35 days after date of publication in the FEDERAL REGISTER].

**ADDRESSES:**

You can get the service information identified in this AD from Pratt & Whitney, 400 Main St., East Hartford, CT 06108; telephone (860) 565-8770; fax (860) 565-4503.

You may examine the AD docket on the Internet at <http://dms.dot.gov> or in Room PL-401 on the plaza level of the Nassif Building, 400 Seventh Street, SW., Washington, DC.

**FOR FURTHER INFORMATION CONTACT:** Antonio Cancelliere, Aerospace Engineer, Engine Certification Office, FAA, Engine and Propeller Directorate, 12 New England Executive Park, Burlington, MA 01803; telephone (781) 238-7751; fax (781) 238-7199.

**SUPPLEMENTARY INFORMATION:** The FAA proposed to amend 14 CFR part 39 with a proposed AD. The proposed AD applies to Pratt & Whitney PW4074, PW4074D, PW4077, PW4077D, PW4084D, PW4090, PW4090-3, and PW4098 turbofan engines, with certain front turbine hub part numbers installed. We published the proposed AD in the *Federal Register* on June 9, 2006 (71 FR 33412). That action proposed to require a onetime visual inspection of the anti-rotation slots in the front turbine hub, for a machining nonconformance, and its replacement if the inspection failed.

**Examining the AD Docket**

You may examine the docket that contains the AD, any comments received, and any final disposition in person at the Docket Management Facility Docket Office between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The Docket Office

(telephone (800) 647-5227) is located on the plaza level of the Department of Transportation Nassif Building at the street address stated in ADDRESSES. Comments will be available in the AD docket shortly after the DMS receives them.

### **Comments**

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

### **Request to Allow Use of Electro-Chemical Etch**

United Airlines requests that we allow using the electro-chemical etch method for marking parts in this AD, as an alternate marking method. The commenter states that the electro-chemical etch method is better because it leaves no raised metal to wear on other mating parts. We agree, provided that the electro-chemical etch instructions from Pratt & Whitney are followed. Those instructions can be found in Pratt & Whitney's Cleaning, Inspection, and Repair Manual, part number 51A750, and in their Standard Practices Manual, part number 585005. Because the marking instructions are part of the service bulletin paragraphs that we incorporated by reference, we did not change the AD.

### **Request to Eliminate Reporting Requirement**

United Airlines requests that we eliminate the reporting requirement of inspection findings, from the AD. The commenter states that the reporting will not enhance airworthiness. We agree. However, our proposed AD incorporates by reference paragraphs 1.A. through 1.C.(2) of the Accomplishment Instructions of Pratt & Whitney Service Bulletin No. PW4G-112-72-282, Revision 1, dated March 3, 2006, which do not require reporting. We did not change the AD.

### **Request to Change Compliance Paragraph (e)**

Pratt & Whitney requests that we change compliance paragraph (e), which states that you are responsible for having the actions required by this AD performed at the next exposure of the rear side of the front turbine hub after the effective date of this AD, unless the actions have already been done. They state that this could be interpreted to mean that the engine must be disassembled and inspected because the front turbine hub is not at piece-part level.

We agree. We changed paragraph (e) in the AD to read “you are responsible for having the actions required by this AD performed at the next disassembly at piece-part level of the front turbine hub after the effective date of this AD, unless the actions have already been done.”

### **Conclusion**

We 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. We 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 117 Pratt & Whitney PW4074, PW4074D, PW4077, PW4077D, PW4084D, PW4090, PW4090-3, and PW4098 turbofan engines installed on airplanes of U.S. registry. We also estimate that it will take one work-hour per engine to perform the actions, and that the average labor rate is \$80 per work-hour. A replacement front turbine hub will cost about \$253,000 for a PW4074, PW4074D, PW4077, PW4077D, or PW4084D engine, and about \$283,000 for a PW4090, PW4090-

3, or PW4098 engine. To date, the failure rate of inspected front turbine hubs is ten per cent. Therefore, we expect the cost of the AD to U.S. operators to be \$3,144,960.

### **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:  
2006-22-13 **Pratt & Whitney**: Amendment 39-14810. Docket No. FAA-2006-24487;  
Directorate Identifier 2006-NE-13-AD.

**Effective Date**

(a) This airworthiness directive (AD) becomes effective [insert date 35 days after date of publication in the FEDERAL REGISTER].

**Affected ADs**

(b) None.

**Applicability**

(c) This AD applies to Pratt & Whitney PW4074, PW4074D, PW4077, PW4077D, PW4084D, PW4090, PW4090-3, and PW4098 turbofan engines, with front turbine hub part numbers 50L761, 52L701, 55L221, 52L901, 53L121, 55L521, and 53L021, installed. These engines are installed on, but not limited to, Boeing 777 airplanes.

**Unsafe Condition**

(d) This AD results from a report of a crack found in an anti-rotation slot of a front turbine hub, during overhaul shop inspection. The anti-rotation slot geometry was not machined in conformance with the design drawing during manufacture. We are issuing this AD to prevent uncontained engine failure, damage to the airplane, and injury to passengers.

**Compliance**

(e) You are responsible for having the actions required by this AD performed at the next disassembly at piece-part level of the front turbine hub after the effective date of this AD, unless the actions have already been done.

**Onetime Visual Inspection**

(f) For front turbine hubs listed by part number and serial number in Table 1, Table 2, and Table 3 of Pratt & Whitney Service Bulletin (SB) No. PW4G-112-72-282, Revision 1, dated March 3, 2006, do the following:

(1) Perform a onetime visual inspection for extra fillet radii in the anti-rotation slots.

(2) Use paragraphs 1.A. through 1.C.(2) of the Accomplishment Instructions of Pratt & Whitney SB No. PW4G-112-72-282, Revision 1, dated March 3, 2006, to do the inspection.

(3) Remove from service any front turbine hub that has extra fillet radii in the anti-rotation slots and install a serviceable front turbine hub.

**Prohibition of Front Turbine Hubs That Have Extra Fillet Radii in the Anti-Rotation Slots**

(g) After the effective date of this AD, do not install any front turbine hub that has extra fillet radii in the anti-rotation slots, onto any engine.

**Previous Credit**

(h) Previous credit is allowed for front turbine hubs inspected using Pratt & Whitney SB No. PW4G-112-72-282, dated February 27, 2006, or Revision 1, dated March 3, 2006, before the effective date of this AD.

**Alternative Methods of Compliance**

(i) 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.

**Material Incorporated by Reference**

(j) You must use Pratt & Whitney Service Bulletin No. PW4G-112-72-282, Revision 1, dated March 3, 2006, to perform the actions required by this AD. 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. Contact Pratt & Whitney, 400 Main St., East Hartford, CT 06108; telephone (860) 565-8770; fax (860) 565-4503,

for a copy of this service information. 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 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>.

Issued in Burlington, Massachusetts, on October 24, 2006.

A handwritten signature in black ink, appearing to read "Peter A. White". The signature is written in a cursive style with a large initial "P".

Peter A. White,  
Acting Manager, Engine and Propeller Directorate,  
Aircraft Certification Service.