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## **DEPARTMENT OF TRANSPORTATION**

### **Federal Aviation Administration**

#### **14 CFR Part 39**

**[Docket No. FAA-2010-1095; Directorate Identifier 2009-NE-40-AD; Amendment 39-17104; AD 2012-13-02]**

**RIN 2120-AA64**

#### **Airworthiness Directives; Pratt & Whitney Turbofan Engines**

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

**ACTION:** Final rule.

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**SUMMARY:** We are superseding an existing airworthiness directive (AD) for all Pratt & Whitney Division PW4074 and PW4077 turbofan engines. That AD currently requires removing the 15th stage high-pressure compressor (HPC) disk within 12,000 cycles since new (CSN) or using a drawdown removal plan for disks that exceed 12,000 CSN. This new AD requires the same actions and clarifies that 15th stage HPC disks that have accumulated more than 9,865 CSN require a borescope inspection (BSI) or eddy current inspection (ECI) of the disk outer rim front rail for cracks prior to accumulating 12,000 CSN. This AD was prompted by a request from an operator that we clarify our inspection schedule for 15th stage HPC disks that have accumulated more than 9,865, but less than 12,000 CSN, on the effective date of the AD. We are issuing this AD to prevent cracks from propagating into the disk bolt holes, which could result in a failure of the 15th stage HPC disk, uncontained engine failure, and damage to the airplane.

**DATES:** This AD is effective August 23, 2012.

The Director of the Federal Register approved the incorporation by reference of a certain other publication listed in this AD as of September 8, 2011 (76 FR 47056, August 4, 2011).

**ADDRESSES:** For service information identified in this AD, contact Pratt & Whitney, 400 Main St., East Hartford, CT 06108; phone: 860-565-7700; fax: 860-565-1605. You may review copies of the referenced service information at the FAA, Engine & Propeller Directorate, 16 New England Executive Park, Burlington, MA. For information on the availability of this material at the FAA, call 781-238-7125.

## **Examining the AD Docket**

You may examine the AD docket on the Internet at <http://www.regulations.gov>; or in person at the Docket Management Facility 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 address for the Docket Office (phone: 800-647-5527) is Document Management Facility, U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE., Washington, DC 20590.

**FOR FURTHER INFORMATION CONTACT:** Ian Dargin, Aerospace Engineer, Engine Certification Office, FAA, 12 New England Executive Park, Burlington, MA 01803; phone: 781-238-7178; fax: 781-238-7199; email: [ian.dargin@faa.gov](mailto:ian.dargin@faa.gov).

## **SUPPLEMENTARY INFORMATION:**

### **Discussion**

We issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 to supersede AD 2011-14-07, Amendment 39-16742 (76 FR 47056, August 4, 2011). That AD applies to the specified products. The NPRM published in the Federal Register on February 24, 2012 (77 FR 11017). That NPRM proposed to continue to require removing the 15th stage HPC disk within 12,000 CSN or using a drawdown removal plan for disks that exceed 12,000 CSN. That NPRM also proposed to clarify our inspection schedule for 15th stage HPC disks that have accumulated more than 9,865, but less than 12,000 CSN, on the effective date of the AD.

### **Comments**

We gave the public the opportunity to participate in developing this AD. We have considered the comments received. United Airlines and The Boeing Company support the NPRM.

### **Conclusion**

We reviewed the relevant data, considered the comments received, and determined that air safety and the public interest require adopting the AD as proposed.

### **Costs of Compliance**

We estimate that this AD will affect 44 engines installed on airplanes of U.S. registry. Prorated parts life will cost about \$66,000 per 15th stage HPC disk. Based on these figures, we estimate the total cost of the AD to U.S. operators to be \$2,904,000. The new requirements of this AD add no additional economic burden.

### **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),
- (3) Will not affect intrastate aviation in Alaska, and
- (4) 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.

### **Adoption of 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 removing airworthiness directive (AD) 2011-14-07, Amendment 39-16742 (76 FR 47056, August 4, 2011), and adding the following new AD:



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**2012-13-02 Pratt & Whitney Division:** Amendment 39-17104; Docket No. FAA-2010-1095; Directorate Identifier 2009-NE-40-AD.

**(a) Effective Date**

This AD is effective August 23, 2012.

**(b) Affected ADs**

This AD supersedes AD 2011-14-07, Amendment 39-16742 (76 FR 47056, August 4, 2011).

**(c) Applicability**

This AD applies to Pratt & Whitney Division PW4074 and PW4077 turbofan engines with 15th stage high-pressure compressor (HPC) disks, part number (P/N) 55H615, installed.

**(d) Unsafe Condition**

This AD results from multiple shop findings of cracked 15th stage HPC disks. We are issuing this AD to prevent cracks from propagating into the disk bolt holes, which could result in a failure of the 15th stage HPC disk, uncontained engine failure, and damage to the airplane.

**(e) Compliance**

Comply with this AD within the compliance times specified, unless already done. To perform the inspections, use paragraph 1.A. or 1.B. of the Accomplishment Instructions "For Engines Installed on the Aircraft" or 1.A. or 1.B. of the Accomplishment Instructions "For Engines Removed from the Aircraft," of Pratt & Whitney Service Bulletin PW4G-112-72-309, Revision 1, dated July 1, 2010.

(1) For 15th stage HPC disks that have 9,865 or fewer cycles since new (CSN) on the effective date of this AD, remove the disk from service before accumulating 12,000 CSN.

(2) For 15th stage HPC disks that have accumulated more than 9,865 CSN on the effective date of this AD, do one of the following:

(i) Remove the disk from service at the next piece-part exposure, not to exceed 2,135 cycles-in-service (CIS) after the effective date of this AD.

(ii) Perform a borescope inspection (BSI) or eddy current inspection (ECI) of the front rail of the disk outer rim according to the following schedule:

(A) Within 2,400 cycles-since-last fluorescent penetrant inspection or ECI, or

(B) Within 1,200 cycles-since-last BSI, or

(C) Before accumulating 12,000 CSN, or

(D) Within 55 CIS after the effective date of this AD, whichever occurs latest.

(3) If the BSI from paragraph (e)(2)(ii) of this AD indicates the presence of a crack in the disk outer rim front rail, but you cannot visually confirm a crack, perform an ECI within 5 CIS after the BSI.

(4) If you confirm a crack in the front rail of the disk outer rim using any inspection method, remove the disk from service before further flight.

**(f) Alternative Methods of Compliance (AMOCs)**

The Manager, Engine Certification Office, may approve AMOCs for this AD. Use the procedures found in 14 CFR 39.19 to make your request.

**(g) Related Information**

For more information about this AD, contact Ian Dargin, Aerospace Engineer, Engine Certification Office, FAA, 12 New England Executive Park, Burlington, MA 01803; phone: 781-238-7178; fax: 781-238-7199; email: [ian.dargin@faa.gov](mailto:ian.dargin@faa.gov).

**(h) Material Incorporated by Reference**

(1) The Director of the Federal Register approved the incorporation by reference (IBR) 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) Pratt & Whitney Service Bulletin PW4G-112-72-309, Revision 1, dated July 1, 2010, approved for IBR September 8, 2011.

(ii) Reserved.

(3) For Pratt & Whitney service information identified in this AD, contact Pratt & Whitney, 400 Main St., East Hartford, CT 06108; phone: 860-565-7700; fax: 860-565-1605.

(4) You may review copies of the referenced service information at the FAA, Engine & Propeller Directorate, 16 New England Executive Park, Burlington, MA. For information on the availability of this material at the FAA, call 781-238-7125.

(5) You may also review copies of the 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, call 202-741-6030, or go to: [http://www.archives.gov/federal-register/cfr/ibr\\_locations.html](http://www.archives.gov/federal-register/cfr/ibr_locations.html).

Issued in Burlington, Massachusetts, on June 19, 2012.

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