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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2006-23742; Directorate Identifier 2005-NE-53-AD; Amendment 39-15180; AD 2007-17-21]

RIN 2120-AA64

Airworthiness Directives; Pratt & Whitney (PW) JT9D-7R4 Series 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 PW JT9D-7R4 series turbofan engines. This AD requires removing reduced cooling flow 2nd stage high pressure turbine (HPT) vane assemblies, part numbers (P/Ns) 797282, 796972, 800082, 800072, 803182, 803282, and 822582, installed in 2nd stage HPT vane cluster assemblies P/Ns 797592, 797372, 799872, 799782, and 822572. It also requires a visual and a fluorescent penetrant inspection (FPI) of the 2nd stage HPT air seal assembly, P/N 815097. This AD results from a report of an uncontained failure of the 2nd stage HPT air seal assembly, caused by the air seal assembly brace disengaging from the air seal, due to insufficient cooling air flow. We are issuing this AD to prevent uncontained failure of the 2nd stage HPT air seal assembly, leading to engine in-flight shutdown and damage to the airplane.

DATES: This AD becomes effective September 28, 2007. The Director of the Federal Register approved the incorporation by reference of certain publications listed in the regulations as of September 28, 2007.

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 at the 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: Mark Riley, Aerospace Engineer, Engine Certification Office, FAA, Engine and Propeller Directorate, 12 New England Executive Park, Burlington, MA 01803; telephone (781) 238-7758, 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 JT9D-7R4E1, -7R4E4, -7R4G2, and -7R4H1 turbofan engines. We published the proposed AD in the Federal Register on February 2, 2007 (72 FR 4964). That action proposed to require removal of reduced cooling flow 2nd stage HPT vane assemblies. It also proposed to require a visual and an FPI of the 2nd stage HPT air seal assembly.

Examining the AD Docket

You may examine the AD docket on the Internet at http://dms.dot.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 the NPRM, 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.

Revise the Cost Impact

FEDEX requests that we revise the estimated cost impact to implement the AD because they believe that the actual cost of modification (according to PW Alert Service Bulletin (ASB) JT9D-7R4-A72-596, dated September 15, 2005) for one set of HPT 2nd stage vane assemblies will be approximately $23,000, instead of $5,400 projected by the proposed AD. We do not agree. We provided the estimated material cost of $5,400 per engine from the engine manufacturer in the Costs of Compliance section in the proposed AD. Parts included new 2nd stage HPT vane covers, part number (P/N) 822734, and rivets, P/N ST1219-213, that are required to modify the 2nd stage HPT vane cluster assemblies, as specified in ASB JT9D-7R4-A72-596, dated September 15, 2005. However, based on latest pricing information in the PW spare parts price catalog, we increased the estimated material cost to $6,700. We also estimate that it will take about 65.5 work-hours per engine to perform the actions, and that the average labor rate is $80 per work-hour. Based on these figures, we estimate the total cost of the AD to be $11,940 per engine.

Revise the Applicability Section

Boeing Company asks that we revise paragraph (c) of the AD to remove the reference to the Boeing model 747-200B, -200C, -200F, and -300 airplanes. Boeing states that the JT9D-7R4E1, -7R4E4, and -7R4H1 are not used on any model Boeing 747 and the description implies that these engines may be installed on the Boeing 747 airplane. We partially agree. We removed the letter designations for the 747-200 series airplanes. However, we do not agree that the airplane listing in paragraph (c) implies that the JT9D-7R4E1, -7R4E4, and -7R4H1 engines may be installed on the Boeing 747. The airplane references in paragraph (c) are informative only. The Type Certificate Data Sheet for an airplane specifies the engines that are installed on the airplane, not the applicability paragraph of an AD.

PW asks that we revise the Applicability section to clarify the affected engine models. They also request that we add the following aircraft to the list of airplanes that can have these engines installed: Boeing 767-200, Airbus A300-600, and A310-300.

We partially agree and revised the Applicability section of the AD to add Boeing 767-200, and Airbus A300-600 and A310-300 airplane models to paragraph (c) of the AD. We do not agree that we

need to clarify the engine models with Pratt & Whitney internal model designation. We specify the affected engines by the model designations specified in the Type Certificate Data Sheet for the engine.

Revise Paragraph (f) of the Compliance Section

PW asks that we revise paragraph (f) of the Compliance section to delete the specific lenticular seal part number reference, as there are other lenticular seal part numbers in the field that will also require visual and FPI inspections at the next HPT module exposure. We partially agree. The specific lenticular seal part number should be removed from paragraph (f) of the Compliance section of the AD because there are other lenticular seal part numbers in the field that will also require inspections. However, to prevent further delay in addressing the unsafe condition, we are issuing this AD with the specific lenticular seal part number listed. Removal of the part number will expand the number of parts requiring inspection and we must give the public an opportunity to comment on this change before we can incorporate it. We will supersede this AD to remove the lenticular seal part number.

List Required Lenticular Seal Inspections

PW asks that we revise paragraph (f) of the Compliance section to list all of the specific inspections required for the lenticular seal. We agree and listed each inspection procedure in the PW engine manual required for the lenticular seal. We also changed the paragraph to (g).

Revise Paragraph (g) of the Compliance Section

PW also asks that we revise paragraph (g) of the Compliance section to reference the associated 2nd stage HPT vane cluster assemblies (higher level assembly) that have reduced cooling flow 2nd stage HPT vane assemblies installed, because airlines may not recognize individual 2nd stage vane assemblies. We agree. We revised paragraph (g) of the Compliance section to state the following: "At the next HPT module exposure, remove reduced cooling flow 2nd stage HPT vane assemblies, P/Ns 797282, 796972, 800082, 800072, 803182, 803282, and 822582, installed in 2nd stage HPT vane cluster assemblies, P/Ns 797592, 797372, 799872, 799782, and 822572." We also designated the paragraph as (f).

Correct Errors and Remove Duplicate P/N Reference

Boeing Company asks that we correct typographical errors for the engine designations in paragraph (c) in the Applicability section. Boeing states that the JT9D-74R4E1, -74R4E4, -74R4G2, and -74R4H1 should be JT9D-7R4E1, -7R4E4, -7R4G2, and -7R4H1, respectively.

Boeing also asks that we revise paragraph (g) in the Compliance section to remove a duplicate reference to part number 803182. We agree and corrected the Applicability section and the duplicate P/N reference in paragraph (g).

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 proposed AD would affect 85 PW JT9D-7R4 series turbofan engines installed on airplanes U.S. registry. We also estimate that it will take about 65.5 work-hours per engine to perform the actions, and that the average labor rate is $80 per work-hour. Required parts will cost about $6,700 per engine. Based on these figures, we estimate the total cost of the AD to U.S. operators to be $1,014,900.

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, 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:

2007-17-21 Pratt & Whitney: Amendment 39-15180. Docket No. FAA-2006-23742; Directorate Identifier 2005-NE-53-AD.

Effective Date

(a) This airworthiness directive (AD) becomes effective September 28, 2007.

Affected ADs

(b) None.

Applicability

(c) This AD applies to Pratt & Whitney (PW) JT9D-7R4G2, -7R4E1, -7R4E4, and -7R4H1 series turbofan engines. These engines are installed on, but not limited to, Boeing 747-200, -300, 767-200, and Airbus A300-600 and A310-300 series airplanes.

Unsafe Condition

(d) This AD results from a report of an uncontained failure of the 2nd stage high pressure turbine (HPT) air seal assembly, caused by the air seal assembly brace disengaging from the air seal, due to insufficient cooling air flow. We are issuing this AD to prevent uncontained failure of the 2nd stage HPT air seal assembly, leading to engine in-flight shutdown and damage to the airplane.

Compliance

(e) You are responsible for having the actions required by this AD performed at the next HPT module exposure after the effective date of this AD, unless the actions have already been done.

(f) At the next HPT module exposure, remove reduced cooling flow 2nd stage HPT vane assemblies part numbers (P/Ns): 797282, 796972, 800082, 800072, 803182, 803282, and 822582, installed in 2nd stage HPT vane cluster assemblies: P/Ns 797592, 797372, 799872, 799782, and 822572.

(g) For 2nd stage HPT air seals that have operated in an engine with reduced cooling flow HPT vane assemblies, at the next HPT module exposure do the following:

(1) Perform a onetime visual inspection of the 2nd stage HPT air seal assembly, P/N 815097, using instructions in JT9D-7R4 engine manual, Section 72-51-22, Inspection/Check-01, paragraphs 1.D.(1), 1.D.(4), and 1.D.(6).

(2) Perform a fluorescent penetrant inspection (FPI) of the 2nd stage HPT air seal assembly for cracks, using instructions in JT9D-7R4 engine manual, Section 71-51-00, Inspection/Check-03.

Definition

(h) For the purpose of this AD, an HPT module exposure is defined as removing the 1st stage HPT rotor or the 2nd stage HPT rotor from the HPT case.

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.

Related Information

(j) Pratt & Whitney Alert Service Bulletin JT9D-7R4-A72-596, dated September 15, 2005, contains information for modifying the reduced cooling flow 2nd stage HPT vane assemblies.

Issued in Burlington, Massachusetts, on August 17, 2007.
Peter A. White,
Acting Manager, Engine and Propeller Directorate, Aircraft Certification Service.
[FR Doc. E7-16665 Filed 8-23-07; 8:45 am]