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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. 98-ANE-48-AD; Amendment 39-14398; AD 2005-25-05]

RIN 2120-AA64

Airworthiness Directives; Pratt & Whitney JT8D Series Turbofan Engines

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

ACTION: Final rule.

SUMMARY: The FAA is superseding an existing airworthiness directive (AD) for Pratt & Whitney (PW) JT8D-1, -1A, -1B, -7, -7A, -7B, -9, -9A, -11, -15, -15A, -17, -17A, -17R, and -17AR series turbofan engines. That AD currently requires revisions to the engine manufacturer's time limits section (TLS) to include enhanced inspection of selected critical life-limited parts at each piece-part opportunity. This AD modifies the airworthiness limitations section of the manufacturer's manual and an air carrier's approved continuous airworthiness maintenance program to add an eddy current inspection. An FAA study of in-service events involving uncontained failures of critical rotating engine parts has indicated the need for mandatory inspections. The mandatory inspections are needed to identify those critical rotating parts with conditions, which if allowed to continue in service, could result in uncontained failures. We are issuing this AD to prevent critical life-limited rotating engine part failure, which could result in an uncontained engine failure and damage to the airplane.

DATES: This AD becomes effective June 12, 2006.

ADDRESSES: You may examine the AD docket at the FAA, New England Region, Office of the Regional Counsel, 12 New England Executive Park, Burlington, MA.

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: The FAA proposed to amend 14 CFR Part 39 with a proposed airworthiness directive (AD). The proposed AD applies to PW JT8D-1, -1A, -1B, -7, -7A, -7B, -9, -9A, -11, -15, -15A, -17, -17A, -17R, and -17AR series turbofan engines. We published the proposed AD in the Federal Register on August 18, 2004 (69 FR 51203). That action proposed to

require modifying the time limitations section of the manufacturer's manual and an air carrier's approved continuous airworthiness maintenance program to incorporate additional inspection requirements.

Examining the AD Docket

You may examine the AD Docket (including any comments and service information), by appointment, between 8 a.m. and 4:30 p.m., Monday through Friday, except Federal holidays. See ADDRESSES for the location.

Comments

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

Request To Change the Effective Date

One commenter asks us to change the effective date to six to eight months. The commenter states the change will allow additional time to order, fabricate, and install automated inspection equipment. It will also allow more time to train employees on using the new equipment. We agree. We have extended the effective date 180 days to allow operators to set up their inspection process.

Concern the Costs To Comply Are Too Low

One commenter suggests the NPRM fails to recognize the substantial up-front investment to get the equipment needed for the eddy current inspection (ECI). In addition, the commenter states we should increase the Costs of Compliance because the complex inspections will require several full-time, specially trained operators. We don't agree. The AD doesn't require air carriers to invest in tooling and equipment or hire more personnel to comply with the proposed AD. The AD requires adding the new ECI to the TLS of the engine manufacturer's manual, and to the air carriers' approved maintenance manuals. Operators can choose to buy equipment to perform the inspection, or they may send the disk to an approved service provider. We have not changed the AD.

Request To Change the ECI for Repaired Parts to Fluorescent Penetrant Inspection (FPI)

The same commenter asks us to change the inspection method for parts previously repaired with bushings from an automated eddy current method to a fluorescent penetrant method. The commenter states that one cannot perform an automated ECI with the bushings installed. The commenter states that removing the bushings to perform the automated ECI would leave score marks because of the tight fit. We don't agree. The operators don't need to remove the bushings. The instructions for Section 72-33-31, Inspection -05, and Section 72-33-33, Inspection -03, state that holes with bushings installed are not subject to the ECI. Holes with bushings installed are subject to FPI and an additional visual inspection within the ECI instructions. We have not changed the AD.

Request To Perform an FPI If the Part Fails the ECI

The same commenter suggests that service-run parts that fail the automated ECI should be subjected to an FPI. If the part fails the FPI, then the part is scrap. If the part passes the FPI, then it would be acceptable to perform the bushing repair. The commenter states that there is a possibility of false readings due to worn or oblong, but not cracked, holes that cause "liftoff" of the probe. We don't agree. The inspection instructions provide an opportunity to clean and reinspect the part. If the part

fails again, the operator may return the disk to the manufacturer for a third opinion before determining if the part is acceptable or if it is scrap. The operator may propose other alternatives through the Alternative Method of Compliance process. We have not changed the AD.

Request for Clear Direction for Preparing the Surface of a Hole

The same commenter asks us to provide clear direction for preparing the surface of a hole that is worn, oblong, or scored from removing a bushing. The commenter states the automated ECI equipment is extremely sensitive to surface finish. It might be necessary to machine the surface to provide an acceptable surface finish for the inspection. The commenter further states this is not desirable since the machining operation might mask or remove crack indications. We do not agree that we need to provide clearer instructions. The manufacturer has provided instructions to prepare the part for ECI. This AD does not allow any machining operations, although it does allow certain cleaning operations. Bushings are not subject to the ECI and must not be removed. We have not changed 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

There are about 6,085 Pratt & Whitney JT8D-1, -1A, -1B, -7, -7A, -7B, -9, -9A, -11, -15, -15A, -17, -17A, -17R, and -17AR series turbofan engines of the affected design in the worldwide fleet. We estimate that this AD will affect 3,236 engines installed on airplanes of U.S. registry. We also estimate that it will take about 8 work hours per engine to perform the proposed inspections, and that the average labor rate is \$65 per work hour. Since this is an added inspection requirement, included as part of the normal maintenance cycle, no additional part costs are involved. Based on these figures, we estimate the total cost of the AD to U.S. operators to be \$1,682,720.

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 by sending a request to us at the address listed under ADDRESSES. Include "AD Docket No. 98-ANE-48-AD" in your request.

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 removing Amendment 39-12867, (67 FR 55108 August 28, 2002), and by adding a new airworthiness directive, Amendment 39-14398, to read as follows:

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/aircraft/safety/alerts/

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).

2005-25-05 Pratt & Whitney: Amendment 39-14398. Docket No. 98-ANE-48-AD.

Effective Date

- (a) This AD becomes effective June 12, 2006.

Affected ADs

- (b) This AD supersedes AD 2002-17-02.

Applicability

(c) This AD applies to Pratt & Whitney (PW) JT8D-1, -1A, -1B, -7, -7A, -7B, -9, -9A, -11, -15, -15A, -17, -17A, -17R, and -17AR series turbofan engines. These engines are installed on, but not limited to Boeing 727 and 737 series, and McDonnell Douglas DC-9 series airplanes.

Unsafe Condition

(d) This AD results from the need to require enhanced inspection of selected critical life-limited parts of PW JT8D series turbofan engines. We are issuing this AD to prevent critical life-limited rotating engine part failure, which could result in an uncontained engine failure 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.

(f) Within the next 30 days after the effective date of this AD, (1) revise the Time Limits Section (TLS) of the manufacturer's Engine Manual, Part Number 481672, as appropriate for PW JT8D-1, -1A, -1B, -7, -7A, -7B, -9, -9A, -11, -15, -15A, -17, -17A, -17R, and -17AR series turbofan engines, and

(2) for air carriers, revise the approved mandatory inspections section of the continuous airworthiness maintenance program, by adding the following:

"Critical Life Limited Part Inspection

A. Inspection Requirements:

(1) This section has the definitions for individual engine piece parts and the inspection procedures which are necessary when these parts are removed from the engine.

(2) It is necessary to do the inspection procedures of the piece parts in paragraph B when:

(a) The part is removed from the engine and disassembled to the level specified in paragraph B and

(b) The part has accumulated more than 100 cycles since the last piece part inspection, provided that the part was not damaged or related to the cause for its removal from the engine.

(3) The inspections specified in this paragraph do not replace or make not necessary other recommended inspections for these parts or other parts.

B. Parts Requiring Inspection:

Note: Piece part is defined as any of the listed parts with all the blades removed.

Description	Section	Inspection Number
Hub (Disk), 1st Stage Compressor:		
Hub Detail—All P/Ns	72-33-31	-02, -03, -04, -05
Hub Assembly—All P/Ns	72-33-31	-02, -03, -04, -05
2nd Stage Compressor:		
Disk—All P/Ns	72-33-33	-02, -03
Disk Assembly—All P/Ns	72-33-33	-02, -03
Disk, 13th Stage Compressor—All P/Ns	72-36-47	-02
HP Turbine Disk, First Stage w/integral Shaft—All P/Ns	72-52-04	-03
HP Turbine, First Stage, w/separable Shaft:		
Rotor Assembly—All P/Ns	72-52-02	-04
Disk—All P/Ns	72-52-02	-03
Disk, 2nd Stage Turbine—All P/Ns	72-53-16	-02
Disk, 3rd Stage Turbine—All P/Ns	72-53-17	-02
Disk (Separable), 4th Stage Turbine—All P/Ns	72-53-15	-02
Disk (Integral Disk/Hub), 4th Stage Turbine—All P/Ns	72-53-18	-02"

Alternative Methods of Compliance

(g) You must perform these mandatory inspections using the TLS and the applicable Engine Manual unless you receive approval to use an alternative method of compliance under paragraph (h) of this AD. Section 43.16 of the Federal Aviation Regulations (14 CFR 43.16) may not be used to approve alternative methods of compliance or adjustments to the times in which these inspections must be performed.

(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.

Maintaining Records of the Mandatory Inspections

(i) You have met the requirements of this AD by using a TLS of the manufacturer's engine manual changed as specified in paragraph (f) of this AD, and, for air carriers operating under part 121 of the Federal Aviation Regulations (14 CFR part 121), by modifying your continuous airworthiness maintenance plan to reflect those changes. You must maintain records of the mandatory inspections that result from those changes to the TLS according to the regulations governing your operation. You do not need to record each piece-part inspection as compliance to this AD. For air carriers operating under part 121, you may use either the system established to comply with section 121.369 or use an alternative system that your principal maintenance inspector has accepted if that alternative system:

(1) Includes a method for preserving and retrieving the records of the inspections resulting from this AD; and

(2) Meets the requirements of section 121.369(c); and

(3) Maintains the records either indefinitely or until the work is repeated.

(j) These recordkeeping requirements apply only to the records used to document the mandatory inspections required as a result of revising the TLS as specified in paragraph (f) of this AD, and do not alter or amend the recordkeeping requirements for any other AD or regulatory requirement.

Related Information

(k) None.

Issued in Burlington, Massachusetts, on December 1, 2005.

Peter A. White,

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

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