

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. 98-ANE-48-AD; Amendment 39-12867; AD 2002-17-02]

RIN 2120-AA64

Airworthiness Directives; Pratt & Whitney JT8D Series Turbofan Engines

AGENCY: Federal Aviation Administration, DOT.

ACTION: Final rule.

SUMMARY: This amendment supersedes an existing airworthiness directive (AD), that is applicable to certain Pratt & Whitney JT8D series turbofan engines. That AD currently requires revisions to the Time Limits Section (TLS) of the manufacturer's Engine Manuals (EM's) to include required enhanced inspection of selected critical life-limited parts at each piece-part exposure. This amendment requires modification of the airworthiness limitations section of the manufacturer's manual and an air carrier's approved continuous airworthiness maintenance program to incorporate additional inspection requirements. A Federal Aviation Administration (FAA) study of in-service events involving uncontained failures of critical rotating engine parts 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. The actions specified by this AD are intended to prevent critical life-limited rotating engine part failure, which could result in an uncontained engine failure and damage to the airplane.

DATES: Effective February 24, 2003.

ADDRESSES: Information regarding this action may be examined, by appointment, at the Federal Aviation Administration (FAA), New England Region, Office of the Regional Counsel, 12 New England Executive Park, Burlington, MA.

FOR FURTHER INFORMATION CONTACT: Christopher Spinney, Aerospace Engineer, Engine Certification Office, FAA, Engine and Propeller Directorate, 12 New England Executive Park, Burlington, MA 01803-5299; telephone (781) 238-7175; fax (781) 238-7199.

SUPPLEMENTARY INFORMATION: A proposal to amend part 39 of the Federal Aviation Regulations (14 CFR part 39) by superseding AD 2000-21-08, Amendment 39-11940 (65 FR 65731, November 2, 2000), which is applicable to Pratt & Whitney JT8D series turbofan engines, was

published in the Federal Register on January 7, 2002, (67 FR 697). Subsequently, a supplemental proposal, which corrected the engine applicability in the proposal published on January 7, 2002, was published in the Federal Register on February 14, 2002 (67 FR 6888). That action proposed to require modifications to the airworthiness limitations section of the manufacturer's manual and an air carrier's approved continuous airworthiness maintenance program to include required enhanced inspections of selected critical life-limited parts at each piece part exposure.

Comments

Interested persons have been afforded an opportunity to participate in the making of this amendment. Due consideration has been given to the comments received.

Correction of Errors

Several commenters request correction of errors in the applicability of the notice of proposed rulemaking (NPRM).

The FAA agrees. Most of the applicability errors were corrected with the issuance of the supplemental NPRM; however, in paragraph (b) the engine manual referenced to perform the inspections was incorrectly identified. The referenced Engine Manual is corrected corrected in this final rule.

Publication Date

One commenter requests a 180-day period between the publication date and the effective date of the AD, similar to AD 2000-21-08.

The FAA agrees. The effective date of this AD has been extended to 180 days after publication to allow time for the specific procedures to be published. The extra time, until the AD becomes effective, should also allow the manufacturer to issue a manual revision.

Part Numbers in the AD

One commenter believes that the FAA has reversed its position relative to not incorporating part numbers in the AD.

The FAA partially agrees. As the commenter notes, the FAA had previously viewed the engine manual for this engine model to be structured so as to make reference to "all" part numbers impractical. The FAA has again reviewed the engine manual and the proposed new changes and has determined that individual part numbers may be removed. Therefore, this AD references "all" part numbers, as with other engine lines. The decision not to include part numbers was originally made to accommodate the industry. The removal of part numbers eliminates the requirement to modify the TLS and Continuous Airworthiness Maintenance programs every time a new part number is introduced by the manufacturer for those parts covered by the AD.

Proposed Cleaning and Inspection Procedures

Two commenters express concern over the proposed cleaning and inspection procedures of the assembled high pressure turbine (HPT) and shaft assembly. Residual alkaline cleaning solution may introduce corrosion in the mating surfaces of the disk, shaft, or bolts, or damage the coated surfaces of the shaft during the subsequent rinse cycle. Entrapped fluorescent penetrant inspection (FPI) fluid may lead to chemical degradation of the disk shaft assembly.

The FAA disagrees. The standard practice operating procedure for alkaline cleaning of the first stage HPT disk and shaft assembly requires a fresh water rinse after performing the alkaline cleaning. When properly rinsed, the residual alkaline cleaning solution is removed. Many overhaul shops have been using the alkaline and subsequent rinse on this part geometry and more complex part geometries for years without any reports of detrimental effects caused by the alkaline solution. In addition, all solutions used in the FPI process, penetrants, emulsifiers and developers, are not corrosive to engine parts and have passed corrosion compatibility testing. Based on the above supporting data, the FAA has determined that the proposed cleaning and inspection processes meet the applicable airworthiness requirements, and are therefore approved for the first stage HPT disk and shaft assembly as stated in the Engine Manual, 481672, Section 72-52-04, inspection "04.

Engine Manual 72-52-02, Inspections-04, Figure 801

One commenter requests a change to the view of Figure 801 of inspection-04. The present view displays a disassembled view of the disk and shaft assembly, which could lead to confusion as the inspection applies to the assembly.

The FAA agrees. The manufacturer has agreed to change Figure 801 to show the first stage HPT disk and shaft assembly in place of the disassembled view currently contained in the inspection procedure.

After careful review of the available data, including the comments noted above, the FAA has determined that air safety and the public interest require the adoption of the rule with the changes described previously. The FAA has determined that these changes will neither increase the economic burden on any operator nor increase the scope of the AD.

Economic Analysis

There are approximately 5,821 Pratt & Whitney JT8D series turbofan engines of the affected design in the worldwide fleet. The FAA estimates that 5,821 engines installed on aircraft of U.S. registry will be affected by this AD, that it will take approximately 8 work hours per engine to perform the required enhanced inspections. The average labor rate is \$60 per work hour. The cost of the enhanced inspections per engine is approximately \$480 per year while the approximate total cost to the U.S. fleet will be \$2,794,080 per year.

Regulatory Impact

This final rule does not have federalism implications, as defined in Executive Order 13132, because it would 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. Accordingly, the FAA has not consulted with state authorities prior to publication of this final rule.

For the reasons discussed above, I certify that this action (1) is not a "significant regulatory action" under Executive Order 12866; (2) is not a "significant rule" under the 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. A final evaluation has been prepared for this action and it is contained in the Rules Docket. A copy of it may be obtained by contacting the Rules Docket at the location provided under the caption ADDRESSES.

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Safety.

Adoption of the Amendment

Accordingly, pursuant to the authority delegated to me by the Administrator, the Federal Aviation Administration amends part 39 of the Federal Aviation Regulations (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.

Sec. 39.13 [Amended]

2. Section 39.13 is amended by removing Amendment 39-11940 (65 FR 65731, November 2, 2000) and by adding a new airworthiness directive 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.airweb.faa.gov/rgl"

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).

2002-17-02 Pratt & Whitney: Docket No. 98-ANE-48-AD. Supersedes AD 2000-21-08, Amendment 39-11940.

Applicability

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

Note 1: This AD applies to each engine identified in the preceding applicability provision, regardless of whether it has been modified, altered, or repaired in the area subject to the requirements of this AD. For engines that have been modified, altered, or repaired so that the performance of the requirements of this AD is affected, the owner/operator must request approval for an alternative method of compliance in accordance with paragraph (c) of this AD. The request should include an assessment of the effect of the modification, alteration, or repair on the unsafe condition addressed by this AD; and, if the unsafe condition has not been eliminated, the request should include specific proposed actions to address it.

Compliance

Compliance with this AD is required as indicated, unless already done.

To prevent critical life-limited rotating engine part failure, which could result in an uncontained engine failure and damage to the airplane, do the following:

Inspections

(a) Within 30 days after the effective date of this AD, revise the Time Limits Section (TLS) of the JT8D-1, -1A, -1B, -7, -7A, -7B, -9, -9A, -11, -15, -15A, -17, -17A, -17R, and -17AR Turbofan Engine Manual, part number 481672, and for air carrier operations revise the approved 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
Hub (Disk), 1st Stage Compressor:		
Hub Detail—All P/N's	72-33-31	-02, -03, -04
Hub Assembly—All P/N's	72-33-31	-02, -03, -04
2nd Stage Compressor:		
Disk—All P/N's	72-33-33	-02
Disk Assembly—All P/N's	72-33-33	-02
Disk, 13th Stage Compressor—All P/N's	72-36-47	-02
HP Turbine Disk, First Stage w/integral Shaft All P/N's	72-52-04	-03
HP Turbine, First Stage, w/ Separable shaft:		
Rotor Assembly—All P/N's	72-52-02	-04
Disk—All P/N's	72-52-02	-03
Disk, 2nd Stage Turbine—All P/N's	72-53-16	-02
Disk, 3rd Stage Turbine—All P/N's	72-53-17	-02
Disk (Separable), 4th Stage Turbine—All P/N's	72-53-15	-02
Disk (Integral Disk/Hub), 4th Stage Turbine—All P/N's	72-53-18	-02"

(b) Except as provided in paragraph (c) of this AD, and notwithstanding contrary provisions in section 43.16 of the Federal Aviation Regulations (14 CFR 43.16), these mandatory inspections must be performed using the TLS of the PW JT8D-1, -1A, -1B, -7, -7A, -7B, -9, -9A, -11, -15, -15A, -17, -17A, -17R, and -17AR Turbofan Engine Manual.

Alternative Methods of Compliance

(c) An alternative method of compliance or adjustment of the compliance time that provides an acceptable level of safety may be used if approved by the Manager, Engine Certification Office (ECO). Operators must submit their request through an appropriate FAA Principal Maintenance Inspector (PMI), who may add comments and then send it to the Manager, ECO.

Note 2: Information concerning the existence of approved alternative methods of compliance with this airworthiness directive, if any, may be obtained from the ECO.

Special Flight Permits

(d) Special flight permits may be issued in accordance with 21.197 and 21.199 of the Federal Aviation Regulations (14 CFR 21.197 and 21.199) to operate the airplane to a location where the requirements of this AD can be done.

Continuous Airworthiness Maintenance Program

(e) FAA-certificated air carriers that have an approved continuous airworthiness maintenance program in accordance with the record keeping requirement of Sec. 121.369 (c) of the Federal Aviation Regulations (14 CFR 121.369 (c)) of this chapter must maintain records of the mandatory inspections that result from revising the Time Limits section of the Instructions for Continuous Airworthiness (ICA) and the air carrier's continuous airworthiness program. Alternately, certificated air carriers may establish an approved system of record retention that provides a method for preservation and retrieval of the maintenance records that include the inspections resulting from this AD, and include the policy and procedures for implementing this alternate method in the air carrier's maintenance manual required by Sec. 121.369 (c) of the Federal Aviation Regulations (14 CFR 121.369 (c)); however, the alternate system must be accepted by the appropriate PMI and require the maintenance records be maintained either indefinitely or until the work is repeated. Records of the piece-part inspections are not required under Sec. 121.380 (a) (2) (vi) of the Federal Aviation Regulations (14 CFR 121.380 (a) (2) (vi)). All other operators must maintain the records of mandatory inspections required by the applicable regulations governing their operations.

Note 3: The requirements of this AD have been met when the engine manual changes are made and air carriers have modified their continuous airworthiness maintenance plans to reflect the requirements in the engine manuals.

Effective Date

(f) This amendment becomes effective on February 24, 2003.

Issued in Burlington, Massachusetts, on August 21, 2002.

Jay J. Pardee,

Manager, Engine and Propeller Directorate, Aircraft Certification Service.

[FR Doc. 02-21832 Filed 8-27-02; 8:45 am]

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