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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2007-27023; Directorate Identifier 98-ANE-47-AD; Amendment 39-14978;
AD 2007-05-17]

RIN 2120-AA64

Airworthiness Directives; Pratt & Whitney JT9D 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) JT9D series turbofan engines. That AD currently requires revisions to the Airworthiness Limitations Section (ALS) of the manufacturer's Instructions for Continued Airworthiness (ICA) to include required enhanced inspection of selected critical life-limited parts at each piece-part opportunity. This AD modifies the JT9D series engines ALS sections of the manufacturer's manuals and an air carrier's approved continuous airworthiness maintenance program to incorporate additional inspection requirements. This AD results from the need to require enhanced inspection of selected critical life-limited parts of JT9D 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.

DATES: This AD becomes effective April 12, 2007.

ADDRESSES: 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: Mark Riley, Aerospace Engineer, Engine Certification Office, FAA, Engine and Propeller Directorate, 12 New England Executive Park, Burlington, MA 01803-5299; 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 series turbofan engines. We published the proposed AD in the Federal Register on November 2, 2005 (70 FR 66300). That action proposed to modify the JT9D series engines ALS sections of the manufacturer's manuals and an air carrier's approved continuous airworthiness maintenance program to incorporate additional inspection requirements. PW has added mandatory eddy current inspections (ECIs) for the web cooling holes in high pressure turbine (HPT) stage 1 disks installed in engine models JT9D-7R4D, -7R4D1, -7R4E, and -7R4E1,

and for web tie-rod holes in HPT stage 2 disks installed in JT9D-3A, -7, -7A, -7H, -7AH, -7F, -7J, -20, and -20J engines. 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.

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 Delete ECIs for JT9D-59A, -70A, -7Q, and -7Q3 Engines

One commenter, Japan Airlines, requests that we delete the ECIs for JT9D-59A, -70A, -7Q, and -7Q3 engines from the table in the proposed AD compliance section. The commenter points out that the proposed AD preamble paragraph entitled “FAA's Determination and Requirements of the Proposed AD” does not include ECIs for JT9D-59A, -70A, -7Q, and -7Q3 engines.

We do not agree. We inadvertently omitted listing the requirement of ECI of the HPT stage 1 disk web cooling holes on JT9D-59A, -70A, -7Q, and -7Q3 engines, under the proposed AD preamble paragraph entitled “FAA's Determination and Requirements of the Proposed AD”. The proposed AD compliance section and the compliance section in this AD, correctly list those engine models. We did not change the AD.

Request To Wait To Issue the AD

Japan Airlines requests that we wait to issue the AD until Pratt & Whitney provides the ECI procedure to the operators. The commenter states that the JT9D-7 Engine Manual Section 72-51-02, Inspection 05, has not been published yet.

We do not agree. Although the ECI procedure was not published in the JT9D-7 Engine Manual as of December 26, 2005 when the comment was sent, it was incorporated into the JT9D-7 Engine Manual on February 15, 2006. We do not need to wait to issue the AD.

Request To Revise Engine Manual

Japan Airlines requests that we recommend to Pratt & Whitney to revise the JT9D engine manual to remove the specific manufacturer's name of the ECI equipment required to perform ECIs, and to only list the technical specifications required to perform the ECIs. The commenter states that operators may not own the ECI equipment specified in the Pratt & Whitney JT9D engine manual, but may have similar equipment capable of performing the inspections.

We partially agree. This AD requires operators to revise the Airworthiness Limitations Section of the engine manual to include a mandatory opportunistic inspection. We do not intend for the AD to specify only one vendor's inspection equipment to accomplish the inspection. Nor do we intend that this AD change the way operators seek approval for alternative methods of inspections. We did not change the AD.

JT9D-3A Model Added to the Compliance Table

Upon review of the proposed AD, we discovered that the JT9D-3A model was inadvertently left out of the compliance table. We added the JT9D-3A model to the compliance table in the AD.

Update to the Costs of Compliance

Since we published the proposed AD on November 2, 2005, the number of engines affected and the hourly labor rate have changed. We updated this information in this AD preamble.

Correction to Compliance Table

Upon review of the proposed AD, we discovered that the compliance table needs correcting in the section for the -3A/7/7A/7AH/7F/7H/7J/20/20J engine models. "All HPT Stage 2 Disk Web Cooling Holes 71-51-02 Inspection-05" is corrected to read "All HPT Stage 2 Disk Web Tie-rod Holes 72-51-02 Inspection-05".

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 504 JT9D series turbofan engines are installed on U.S.-registered airplanes and will be affected by this AD. We also estimate that 87 engines will require this inspection per year and about one work-hour per engine is needed to perform the actions, and that the average labor rate is \$80 per work-hour. Since this is an added inspection requirement that will be part of the normal maintenance cycle, no additional parts costs are involved. Based on these figures, we estimate the total annual cost of the AD to U.S. operators to be \$6,960.

Docket Number Change

We are transferring the docket for this AD to the Docket Management System as part of our ongoing docket management consolidation efforts. The new Docket No. is FAA-2007-27023. The old Docket No. became the Directorate Identifier, which is 98-ANE-47-AD. This AD might get logged into the DMS docket, ahead of the previously collected documents from the old docket file, as we are in the process of sending those items to the DMS.

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 removing Amendment 39-12719 (67 FR 19663, April 23, 2002), and by adding a new airworthiness directive, Amendment 39-14978, to read as follows:



2007-05-17 Pratt & Whitney: Amendment 39-14978. Docket No. FAA-2007-27023; Directorate Identifier 98-ANE-47-AD.

Effective Date

- (a) This airworthiness directive (AD) becomes effective April 12, 2007.

Affected ADs

- (b) This AD supersedes AD 2002-08-11, Amendment 39-12719.

Applicability

(c) This AD applies to Pratt & Whitney (PW) JT9D-3A, -7, -7A, -7H, -7AH, -7F, -7J, -20J, -59A, -70A, -7Q, -7Q3, -7R4D, -7R4D1, -7R4E, -7R4E1, -7R4E4, -7R4G2, and -7R4H1 series turbofan engines. These engines are installed on, but not limited to, Boeing 747 and 767 series, McDonnell Douglas DC-10 series, and Airbus Industrie A300 and A310 series airplanes.

Unsafe Condition

(d) This AD results from the need to require enhanced inspection of selected critical life-limited parts of JT9D 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 180 days after the effective date of this AD, revise the manufacturer's Instructions for Continued Airworthiness Limitations Section (ALS), and for air carrier operations revise the approved continuous airworthiness maintenance program by adding the following:

Mandatory Inspections

(1) Perform inspections of the following parts at each piece-part opportunity in accordance with the instructions provided in the applicable manual provisions:

Engine Model	Engine Manual Part Number (P/N)	Part Nomenclature	Inspect per Manual Section	Inspection/Check
3A/7/7A/7AH/7F/7H/7J/20/20J	*646028 (or the equivalent customized versions, 770407 and 770408)	All Fan Hubs	72-31-04	Inspection-02
		All HPC Stage 5 – 15 Disks and Rear Compressor Drive Turbine Shafts	72-35-00	Inspection-03
		All HPT Stage 1-2 Disks and Hubs	72-51-00	Inspection-03
		All HPT Stage 2 Disk Web Tie-rod Holes	72-51-02	Inspection-05
		All LPT Stage 3 – 6 Disks and Hubs	72-52-00	Inspection-03
59A/70A	754459	All Fan Hubs	72-31-00	Check-00
		All HPC Stage 5 – 15 Disks and Rear Compressor Drive Turbine Shafts	72-35-00	Check-00
		All HPT Stage 1-2 Disks and Hubs	72-51-00	Check-03
		All HPT Stage 1 Disk Web Cooling Holes	72-51-02	Check-03
		All LPT Stage 3 – 6 Disks and Hubs	72-52-00	Check-03
7Q/7Q3	777210	All Fan Hubs	72-31-00	Inspection-03
		All HPC Stage 5 – 15 Disks and Rear Compressor Drive Turbine Shafts	72-35-00	Inspection-03
		All HPT Stage 1-2 Disks and Hubs	72-51-00	Inspection-03
		All HPT Stage 1 Disk Web Cooling Holes	72-51-06	Inspection-03
		All LPT Stage 3 – 6 Disks and Hubs	72-52-00	Inspection-03
7R4 ALL	785058, 785059, and 789328	All Fan Hubs	72-31-00	Inspection/Check-03

Engine Model	Engine Manual Part Number (P/N)	Part Nomenclature	Inspect per Manual Section	Inspection/ Check
		All HPC Stage 5 – 15 Disks and Rear Compressor Drive Turbine Shafts	72-35-00	Inspection/ Check 03
		All HPT Stage 1-2 Disks and Hubs	72-51-00	Inspection/ Check 03
		All LPT Stage 3 – 6 Disks and Hubs	72-52-00	Inspection/ Check 03
7R4D/D1/E/E1	785058 and 785059	All HPT Stage 1 Disk Web Cooling Holes	72-51-06	Inspection/ Check-02

*** P/N 770407 and 770408 are customized versions of P/N 646028 engine manual.**

(2) For the purposes of these mandatory inspections, piece-part opportunity means:

- (i) The part is considered completely disassembled when done in accordance with the disassembly instructions in the manufacturer's engine manual; and
- (ii) The part has accumulated more than 100 cycles-in-service since the last piece-part opportunity inspection, provided that the part was not damaged or related to the cause for its removal from the engine.”

Alternative Methods of Compliance

(g) You must perform these mandatory inspections using the ALS of the Instructions for Continued Airworthiness 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 when you change the manufacturer's Instructions for Continued Airworthiness ALS specified in paragraph (f) of this AD. For air carriers operating under part 121 of the Federal Aviation Regulations (14 CFR part 121), you have met the requirements of this AD when you modify your continuous airworthiness maintenance plan to reflect those changes. You do not need to record each piece-part inspection as compliance to this AD but you must maintain records of those inspections according to the regulations governing your operation. For air carriers operating under part 121, you may use either the system established to comply with section 121.369 or an alternative accepted by your principal maintenance inspector if that alternative:

- (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 record keeping requirements apply only to the records used to document the mandatory inspections required as a result of revising the ALS of the Instructions for Continued Airworthiness as specified in paragraph (f) of this AD. These record keeping requirements do not alter or amend the record keeping requirements for any other AD or regulatory requirement.

Related Information

(k) 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; e-mail: mark.riley@faa.gov for more information about this AD.

Issued in Burlington, Massachusetts, on March 1, 2007.

Peter A. White,

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

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SUPERSEDED