

**DEPARTMENT OF TRANSPORTATION****Federal Aviation Administration****14 CFR Part 39**

[Docket No. 98-ANE-31-AD; Amendment 39-11221; AD 99-15-02]

RIN 2120-AA64

**Airworthiness Directives; Pratt & Whitney JT9D Series Turbofan Engines**

AGENCY: Federal Aviation Administration, DOT.

ACTION: Final rule.

**SUMMARY:** This amendment adopts a new airworthiness directive (AD), applicable to certain Pratt & Whitney (PW) JT9D series turbofan engines, that requires initial and repetitive in-shop eddy current and on-wing ultrasonic inspections of the Combustion Chamber Outer Casing (CCOC) forward flange (L-flange) fillet radius for cracking, and replacing cracked L-flanges with serviceable parts. Replacement with an improved L-flange constitutes terminating action to the repetitive inspections. This amendment is prompted by reports of CCOC rupture due to cracking in the L-flange fillet radius. The actions specified by the proposed AD are intended to prevent CCOC rupture due to cracking, which could result in an uncontained engine failure and damage to the aircraft.

**DATES:** Effective date August 16, 1999.

The incorporation by reference of certain publications listed in the regulations is approved by the Director of the Federal Register as of August 16, 1999.

**ADDRESSES:** The service information referenced in this AD may be obtained from Pratt & Whitney, 400 Main St., East Hartford, CT 06108; telephone (860) 565-8770, fax (860) 565-4503. This information may be examined at the Federal Aviation Administration (FAA), New England Region, Office of the Regional Counsel, 12 New England Executive Park, Burlington, MA; or at the Office of the Federal Register, 800 North Capitol Street, NW, suite 700, Washington, DC.

**FOR FURTHER INFORMATION CONTACT:** Peter White, Aerospace Engineer, Engine Certification Office, FAA, Engine and Propeller Directorate, 12 New England Executive Park, Burlington, MA 01803-5299; telephone (781) 238-7128, fax (781) 238-7199.

**SUPPLEMENTARY INFORMATION:** A proposal to amend part 39 of the Federal Aviation Regulations (14 CFR part 39) to include an airworthiness directive (AD) that is applicable to certain Pratt &

Whitney (PW) JT9D series turbofan engines was published in the **Federal Register** on December 21, 1998 (63 FR 70352). That action proposed to require initial and repetitive in-shop eddy current and on-wing ultrasonic inspections of the Combustion Chamber Outer Casing (CCOC) forward flange (L-flange) fillet radius for cracking, and replacing cracked L-flanges with serviceable parts.

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

One commenter supports the proposed actions contained in the notice of proposed rulemaking (NPRM).

One commenter notes that the aircraft applicability may be incorrect because it includes the A300 Aircraft. The commenter believes that the JT9D-7R4 is the only model being installed on the A300 and that the service bulletin (SB) may be incorrect. The commenter is correct. Pratt & Whitney indicates that the JT9D-3/-20 models were never installed on the A300 Aircraft, and that the documents referenced are in error. The Applicability paragraph has been changed accordingly. The listing of aircraft installations in an AD that applies to engines, however, is informative only and does not affect the applicability of the AD to the identified engine models.

One commenter notes that Chromalloy makes a replacement CCOC under a supplemental type certificate (STC) P/N CFL758479, that the FAA should consider as acceptable terminating action to the AD. The commenter also states that Chromalloy makes a replacement CCOC L-flange under a parts manufacturing approval (PMA) which the commenter claims is the equivalent to the flange introduced by PW SB 4482, and should also be considered as acceptable terminating action for the AD. The FAA agrees. These part numbers have been added to the list of parts whose installation will constitute terminating actions to the AD in a new paragraph (e).

One commenter utilizes Standard Practice Operating Procedure (SPOP) 82 florescent penetrant inspection (FPI) of the L-flange when the part is in their shop. For cases that have used SPOP 82 FPI at last shop visit, the commenter requests that the FAA extend the 250 cycle limit to the 500 cycle limit for the initial on-wing inspection. The FAA does not agree. The performance of SPOP 82, when compared to the required ultrasonic inspection, does not raise the probability of detecting a crack sufficiently to increase the initial

inspection requirement from 250 cycles to 500 cycles.

One commenter requested that the effective date of the AD be changed from 30 days after publication in the **Federal Register** to 60 days. The commenter states that he often receives the ADs weeks after their publication date, leaving little time to update his tracking system. The FAA does not agree. All AD's are published in the Federal Register and are available on a subscription basis from the Government Printing Office within days of publication. In addition, all ADs are available on the **Federal Register's** Internet web site the day they are published and are listed on the **Federal Register's** preview web site the day before publication. Additionally, the FAA mails hard copies of ADs to all registered owner/operators within a week of their publication in the **Federal Register**.

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. The regulations adopted herein will not have substantial direct effects 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. Therefore, in accordance with Executive Order 12612, it is determined that this final rule does not have sufficient federalism implications to warrant the preparation of a Federalism Assessment.

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 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 from the Rules Docket at the location provided under the caption **ADDRESSES**.

**List of Subjects in 14 CFR Part 39**

Air Transportation, Aircraft, Aviation safety, Incorporation by reference, 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.

**§ 39.13 [Amended]**

2. Section 39.13 is amended by adding the following new airworthiness directive:

**99-15-02 Pratt & Whitney:** Amendment 39-11221. Docket 98-ANE-31-AD.

*Applicability:* Pratt & Whitney (PW) JT9D-3A, -7, -7H, -7A, -7AH, -7F, -7J, -20, and -20J series turbofan engines, with Combustion Chamber Outer Casing (CCOC), part numbers (P/Ns) 644801, 693294, 709016, 729237, 729238, and 729239, installed. These engines are installed on but not limited to certain models of Boeing 747 and McDonnell Douglas DC-10 series aircraft.

**Note 1:** This airworthiness directive (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 (h) 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:* Required as indicated, unless accomplished previously.

To prevent CCOC rupture due to cracking, which could result in an uncontained engine failure and damage to the aircraft, accomplish the following:

(a) Perform initial on-wing ultrasonic inspections of the CCOC forward flange (L-flange) fillet radius for cracking in accordance with PW Alert Service Bulletin (ASB) No. A6343 Revision 1, dated October 8, 1998, as follows:

(1) For engines that have not had the L-flange fillet radius eddy current inspected using the JT9D Engine Manual (P/N 646028, P/N 770407, P/N 770408, as appropriate) Revision No. 104; or Temporary Revision No. 72-6517, Temporary Revision No. 72-6334, or Temporary Revision No. 72-6206, all of which were superseded by manual Revision No. 104; at the last shop visit, inspect within 250 cycles in service (CIS) after the effective date of this AD, or the next shop visit, whichever occurs first.

(2) For engines that did have the L-flange fillet radius eddy current inspected using the JT9D Engine Manual (P/N 646028, P/N 770407, P/N 770408, as appropriate) Revision No. 104; or Temporary Revision No. 72-6517, Temporary Revision No. 72-6334, or Temporary Revision No. 72-6206, all of which were superseded by manual Revision No. 104; at the last shop visit, inspect within 2,000 CIS, or the next shop visit after the effective date of this AD, whichever occurs first.

(b) Thereafter, ultrasonically inspect on-wing at intervals not to exceed 500 CIS since last on-wing inspection in accordance with PW Alert Service Bulletin (ASB) No. A6343 Revision 1, dated October 8, 1998, or 2000 cycles in service (CIS) since last in-shop ECI inspection, whichever occurs later.

(c) If a crack is found during on-wing inspection, remove the part from service, and replace with a serviceable part as follows:

(1) For cracks found to be over the inspection threshold limit, but less than 2 inches, remove within 5 CIS.

(2) For cracks found to be over the inspection threshold limit and equal to or greater than 2 inches, remove prior to further flight.

(d) If a crack in the L-flange fillet radius of the CCOC is found during in-shop inspection, remove the CCOC and replace with a serviceable part or replace the L-flange with an improved L-flange P/N 734515 or 056-1133-1 in accordance with the accomplishment instructions of PW ASB No. 6343 Revision 1, dated October 8, 1998.

(e) Installation of CCOC's containing improved L-flange P/N's 734515 or 056-1133-1, or installation of CCOC's with P/N's 758479 or CFL758479, constitute terminating action to the repetitive inspection requirements of this AD.

(f) Inspect the CCOC L-flange fillet radius during every CCOC shop visit in accordance with JT9D Engine Manual (P/N 646028, P/N 770407, P/N 770408, as appropriate) Revision No. 104 (or Temporary Revision No. 72-6517, Temporary Revision No. 72-6334, or Temporary Revision No. 72-6206, which were superseded by manual Revision No. 104); that details eddy current inspection procedures for the L-flange fillet radius.

(g) For the purpose of this AD, a shop visit is defined as anytime the L-flange is separated in the process of performing engine repair.

(h) 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. Operators shall submit their request through an appropriate FAA Principal Maintenance Inspector, who may add comments and then send it to the Manager, Engine Certification Office.

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

(i) 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 aircraft to a location where the requirements of this AD can be accomplished.

(j) The inspections must be done in accordance with the following Pratt & Whitney SBs:

Document No.	Pages	Revision	Date	
JT9D A6343 .....	1-5	Rev. 1 .....	October 8, 1998.	
	6-9	Original .....	July 31, 1998.	
	10-11	Rev. 1 .....	October 8, 1998.	
	12	Original .....	July 31, 1998.	
	13	Rev. 1 .....	October 8, 1998.	
Total Pages: 13.				
4482 .....	1	Rev. 1 .....	July 8, 1976.	
	2	Original .....	September 5, 1975.	
	3	Rev. 1 .....	July 8, 1976.	
	4	Original .....	September 5, 1975.	
	5	Rev. 1 .....	July 8, 1976.	
	6-8	Original .....	September 5, 1975.	
	9	Rev. 1 .....	July 8, 1976.	
	10	Original .....	September 5, 1975.	
	Total pages: 10.			

This incorporation by reference was approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a)

and 1 CFR part 51. Copies may be obtained from Pratt & Whitney, 400 Main St., East Hartford, CT 06108; telephone (860) 565-

8770, fax (860) 565-8770. Copies may be inspected at the FAA, New England Region, Office of the Regional Counsel, 12 New

England Executive Park, Burlington, MA; or at the Office of the Federal Register, 800 North Capitol Street, NW, suite 700, Washington, DC.

(k) This amendment becomes effective on August 16, 1999.

Issued in Burlington, Massachusetts, on July 6, 1999.

**David A. Downey,**

*Assistant Manager, Engine and Propeller Directorate, Aircraft Certification Service.*

[FR Doc. 99-17555 Filed 7-15-99; 8:45 am]

BILLING CODE 4910-13-P

## DEPARTMENT OF TRANSPORTATION

### Federal Aviation Administration

#### 14 CFR Part 39

[Docket No. 97-ANE-55-AD; Amendment 39-11220; AD 99-15-01]

RIN 2120-AA64

#### Airworthiness Directives; Pratt & Whitney PW4000 Series Turbofan Engines

**AGENCY:** Federal Aviation Administration, DOT.

**ACTION:** Final rule.

**SUMMARY:** This amendment adopts a new airworthiness directive (AD), applicable to certain Pratt & Whitney PW4000 series turbofan engines, that reduces life limits of certain 4th stage low pressure turbine (LPT) disks. It also allows the original life limits of the disks to be restored if reoperation is performed to incorporate the original slotted cooling hole configuration. This amendment is prompted by reports that a change of a cooling hole geometry, which was introduced in the design of certain 4th stage LPT disks, inadvertently caused a reduction on the cooling air flow to the disk and an increased level of stress. The actions specified by this AD are intended to prevent an uncontained disk failure and damage to the aircraft.

**DATES:** Effective September 14, 1999.

The incorporation by reference of certain publications listed in the regulations is approved by the Director of the Federal Register as of September 14, 1999.

**ADDRESSES:** The service information referenced in this AD may be obtained from Pratt & Whitney, Publications Department, Supervisor Technical Publications Distribution, M/S 132-30, 400 Main St., East Hartford, CT 06108; telephone (860) 565-8770. This information may be examined at the Federal Aviation Administration (FAA), New England Region, Office of the Regional Counsel, 12 New England

Executive Park, Burlington, MA; or at the Office of the Federal Register, 800 North Capitol Street, NW, suite 700, Washington, DC.

#### FOR FURTHER INFORMATION CONTACT:

Chris Gavriel, Aerospace Engineer, Engine Certification Office, FAA, Engine and Propeller Directorate, 12 New England Executive Park, Burlington, MA 01803-5299; telephone (781) 238-7147, fax (781) 238-7199.

#### SUPPLEMENTARY INFORMATION:

A proposal to amend part 39 of the Federal Aviation Regulations (14 CFR part 39) to include an airworthiness directive (AD) that is applicable to Pratt & Whitney Model PW4056, PW4152, PW4156A, PW4164, PW4168, and PW4460 turbofan engines was published in the **Federal Register** on March 9, 1998 (63 FR 11381). That action proposed to reduce life limits of affected 4th stage low pressure turbine (LPT) disks, identified by serial number (S/N). It would also allow the original life limits to be restored, if reoperation is performed to incorporate the slotted cooling air configuration.

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

One commenter states that it does not own any of the disks affected by this AD, and will therefore not be affected by it. The commenter, however, states that the 4th stage LPT disk was subjected to a design change but retained the same part number. The commenter states that for tracking purposes it is desirable to change the part number. The FAA agrees with the concept; however, this issue addresses practices at the manufacturer and not this action, since both part number and serial numbers are identified for tracking purposes. The FAA will communicate this request to the manufacturer for future considerations.

One commenter states that the economic analysis should be revised to note that the labor cost is accurate when the engine is torn down to obtain access to the LPT. The FAA concurs and has added this language to the economic analysis of this final rule.

Two commenters state that they do not own any of the affected disks and that therefore would not be affected by the proposed rule.

One commenter supports the rule as proposed.

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 as proposed. The

FAA has determined that this change will neither increase the economic burden on any operator nor increase the scope of the AD.

There are approximately 27 engines of the affected design in the worldwide fleet. The FAA estimates that there are currently no engines installed on aircraft of U.S. registry that will be affected by this AD, but if one were installed, it would take approximately 4 work hours per engine to accomplish the required actions when the engine is torn down to obtain access to the LPT, and that the average labor rate is \$60 per work hour. Required parts will cost approximately \$240 per engine. Based on these figures, the total cost impact per engine is estimated to be \$480.

The regulations adopted herein will not have substantial direct effects 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. Therefore, in accordance with Executive Order 12612, it is determined that this final rule does not have sufficient federalism implications to warrant the preparation of a Federalism Assessment.

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 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 from the Rules Docket at the location provided under the caption **ADDRESSES**.

#### List of Subjects in 14 CFR Part 39

Air Transportation, Aircraft, Aviation safety, Incorporation by reference, 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.