DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. 94–ANE–51; Amendment 39–9721; AD 96–17–11]

RIN 2120–AA64

Airworthiness Directives; Pratt & Whitney JT9D–7R4 Series Turbofan Engines

AGENCY: Federal Aviation Administration, DOT.

ACTION: Final rule.

SUMMARY: This amendment adopts a new airworthiness directive (AD), applicable to Pratt & Whitney (PW) JT9D–7R4 series turbofan engines, that requires replacement of 3rd, 4th, and 5th stage low pressure turbine (LPT) vane retention bolts and nuts, the removal of the 5th stage vane configuration which includes an electro-discharge machined (EDM) slot and replacement with a cast slot configuration, and prohibits the use of uncured anti-gallant compound on vane retention hardware. This amendment is prompted by reports of LPT failures that resulted in uncontained engine failures. The actions specified by this AD are intended to prevent LPT vane failures, which can result in uncontained engine failure, fire, and possible damage to the aircraft.

DATES: Effective November 18, 1996.

The incorporation by reference of certain publications listed in the regulations is approved by the Director of the Federal Register as of November 18, 1996.

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) 565–6600, fax (860) 565–4503. This information may be examined at the Federal Aviation Administration (FAA), New England Region, Office of the Assistant Chief 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: John Fisher, Aerospace Engineer, Engine Certification Office, FAA, Engine and Propeller Directorate, 12 New England Executive Park, Burlington, MA 01803–5299; telephone (617) 238–7149, fax (617) 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 (PW) JT9D–7R4 series turbofan engines was published in the Federal Register on October 16, 1995 (60 FR 53556). That action proposed to require replacement of 3rd, 4th, and 5th stage low pressure turbine (LPT) vane retention bolts and nuts and the removal of the 5th stage vane configuration which includes an electro-discharge machined (EDM) slot, and replacement with a 5th stage vane featuring a cast slot configuration. In addition, the proposed AD would prohibit use of uncured anti-gallant compound on the bolts or nuts, as uncured anti-gallant compound was a contributor to the unsafe condition. The actions would be required to be accomplished in accordance with PW Service Bulletin (SB) No. JT9D–7R4–72–473, Revision 2, dated February 8, 1993; PW Alert Service Bulletin (ASB) No. JT9D–7R4–72–480, dated April 20, 1993; PW ASB No. JT9D–7R4–72–481, dated April 20, 1993; and PW SB No. JT9D–7R4–72–484, Revision 1, dated October 9, 1993.

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

Two commenters basically concur with the intent of the AD, but recommend a change in the accomplishment time, from the next shop visit to the next LPT module disassembly. The commenters believe accomplishment at the next shop visit causes an undue scheduling burden and increases cost by an estimated $558,900. The FAA does not concur. The FAA has reviewed the risk analysis, which predicts that if the accomplishment time is extended, the risk would quadruple, which the FAA considers unacceptable.

Two commenters recommend a change to the acceptable configurations. They state that paragraph (b)(2) of the compliance section should be revised to reference PW SB No. JT9D–7R4–72–488, Revision 1, dated November 20, 1993, as an additional approved and acceptable configuration, as the configuration defined by that SB became available after the criteria for the NPRM was established. The FAA concurs in part. Pratt & Whitney SB No. JT9D–7R4–72–488, Revision 1, dated November 20, 1993, which describes modifying the vane retention stops, is not an alternative to PW SB No. JT9D–7R4–72–484, Revision 1, dated October 9, 1993, but can be added as a compliance option for an additional acceptable configuration. The FAA has therefore revised this final rule to include the following configurations as acceptable: (1) PW ASB No. JT9D–7R4–72–481, dated April 20, 1993; (2) PW SB No. JT9D–7R4–72–484, Revision 1, dated October 9, 1993; or (3) PW SB No. JT9D–7R4–72–484, Revision 1, dated October 9, 1993, and PW SB No. JT9D–7R4–72–488, Revision 1, dated November 20, 1993.

One commenter states that the reference to not using uncured anti-gallant compound on the bolt threads in the compliance section should be deleted, and that the issue should only be addressed in the discussion section. The commenter believes that the prohibition against using anti-gallant compound in the compliance section is not appropriate as a maintenance action within an AD, and would result in no terminating action being available to the airlines. The FAA does not concur. The primary cause of the LPT vane retention hardware failures was the use of uncured anti-gallant compound. Therefore, the FAA has determined that the prohibition against using uncured anti-gallant compound is a key element of the AD, and must be an integral part of the compliance section.

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 FAA estimates that 600 engines installed on aircraft of U.S. registry will be affected by this AD, that it will take approximately 22 work hours per engine to accomplish the required actions, and that the average labor rate is $60 per work hour. Based on these figures, the total cost impact of the AD on U.S. operators is estimated to be $792,000.

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 USC 106(g), 40113, 44701.

§ 39.13 [AMENDED]

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

96–17–11 Pratt & Whitney: Amendment 39–9721. Docket 94–ANE–51.

Applicability: Pratt & Whitney (PW) JT9D–7R4 series turbofan engines, installed on but not limited to Airbus A300 and A310 series, and Boeing 747 and 767 series aircraft.

Note: 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 (e) 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 low pressure turbine (LPT) vane failures, which can result in uncontained engine failure, fire, and possible damage to the aircraft, accomplish the following, accomplish the following:

(a) Remove 5th stage LPT vane cluster segments that incorporate electro-discharge machined (EDM) slots, Part Numbers (P/N) 787885 or 787885–001, and replace with the cast pocket vane configuration, P/N 796985, 795175, 796985–001, 808875, 811985, or 811985–001, at the next shop visit, but not later than 5,000 cycles in service (CIS) after the effective date of this AD, in accordance with PW Alert Service Bulletin (ASB) No. JT9D–7R4–72–480, dated April 20, 1993.

Note: Pratt & Whitney SB No. JT9D–7R4–72–473, Revision 2, dated February 8, 1993, may be used to segregate EDM slot from cast pocket 5th stage LPT vane clusters sharing the same P/N 787885 and 787885–001.

(b) For LPT modules that previously have had the 3rd, 4th, or 5th stage vane retention hardware disassembled for any reason perform paragraph (b)(1), (b)(2), or (b)(3) of this AD at the next shop visit, but not later than 5,000 CIS after the effective date of this AD, accomplish one of the following. Do not use uncured anti-gallant compound on the bolts or nuts:

(1) Install new 3rd, 4th, and 5th stage LPT vane bolts and nuts, in accordance with PW ASB No. JT9D–7R4–72–481, dated April 20, 1993; or

(2) Install new 3rd, 4th, and 5th stage LPT vane bolts and nuts, and install heat shield assemblies and air sealing ring stop assemblies in accordance with PW SB No. JT9D–7R4–72–484, Revision 1, dated October 9, 1993; or

(3) Install new 3rd, 4th, and 5th stage LPT vane bolts and nuts, and install heat shield assemblies and air sealing ring stop assemblies in accordance with PW SB No. JT9D–7R4–72–484, Revision 1, dated October 9, 1993, and PW SB No. JT9D–7R4–72–488, Revision 1, dated November 20, 1993.

(c) For LPT modules that have never had the 3rd, 4th, or 5th stage vane retention hardware disassembled, perform paragraph (b)(1), (b)(2), or (b)(3) of this AD at the first LPT module disassembly. Do not use uncured anti-gallant compound on the bolts or nuts.

(d) For the purpose of this AD, a shop visit is defined as the induction of an engine into a maintenance facility for the purpose of either:

(1) Separation of pairs of major mating engine flanges; or

(2) The removal of an engine disk, hub, or spool.

(e) 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. The request should be forwarded through an appropriate FAA Principal Maintenance Inspector, who may add comments and then send it to the Manager, Engine Certification Office.

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

(f) Special flight permits may be issued in accordance with sections 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.

(g) The actions required by this AD shall be done in accordance with the following PW service documents:

Document No.	Pages	Revision	Date
SB No. JT9D–7R4 –72–473	1	2	February 8, 1993.
	2–5	Original	November 11, 1992.
	6, 7	2	February 8, 1993.
	8	Original	November 11, 1992.
	9	1	December 16, 1992.
	10, 11	2	February 8, 1993.
Total Pages: 11.			
ASB No. JT9D–7R4–72–480	1–13	Original	April 20, 1993.
Total Pages: 13.			
ASB No. JT9D–7R4–72–481	1–11	Original	April 20, 1993.
Total Pages: 11.			
SB No. JT9D–7R4–72–484	1	1	October 9, 1993.
	2–8	Original	August 2, 1993.
	9	1	October 9, 1993.
	10–16	Original	August 2, 1993.
	17	1	October 9, 1993.
	18–44	Original	August 2, 1993.
Total Pages: 44.			
SB No. JT9D–7R4–72–488	1	1	November 20, 1993
	2	Original	October 7, 1993.
	3	1	November 20, 1993.
	4–17	Original	October 7, 1993.

Document No.	Pages	Revision	Date
Total Pages: 18.	18	1	November 20, 1993.

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, Publications Department, Supervisor Technical Publications Distribution, M/S 132–30,400 Main St., East Hartford, CT 06108; telephone (860) 565–6600, fax (860) 565–4503. Copies may be inspected at the FAA, New England Region, Office of the Assistant Chief 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.

(h) This amendment becomes effective on November 18, 1996.

Issued in Burlington, Massachusetts, on August 15, 1996.

Jay J. Pardee,

Manager, Engine and Propeller Directorate, Aircraft Certification Service.

[FR Doc. 96–22771 Filed 9–16–96; 8:45 am]

BILLING CODE 4910–13–U

14 CFR Part 39

[Docket No. 96–NM–216–AD; Amendment 39–9757; AD 96–19–10]

RIN 2120–AA64

Airworthiness Directives; Boeing Model 767 Series Airplanes

AGENCY: Federal Aviation Administration, DOT.

ACTION: Final rule; request for comments.

SUMMARY: This amendment adopts a new airworthiness directive (AD) that is applicable to certain Boeing Model 767 series airplanes. This action requires a one-time inspection to detect discrepancies of the main battery shunt, and replacement with a serviceable part, if necessary. This action also requires inspection of certain wires, washers, and brass jam nuts to detect any discrepancy, and replacement with a serviceable part, if necessary. Additionally, this action requires inspection, and adjustment if necessary, of the torque and resistance of the installation of the main battery ground stud. This amendment is prompted by reports of interruptions of electrical power during flight due to improper installation of the main battery shunt and ground stud connection of the main battery. The actions specified in this AD are intended to prevent such electrical power interruptions, which could result in loss of battery power to the source of standby power for the airplane.

DATES: Effective October 2, 1996.

The incorporation by reference of certain publications listed in the regulations is approved by the Director of the Federal Register as of October 2, 1996.

Comments for inclusion in the Rules Docket must be received on or before November 18, 1996.

ADDRESSES: Submit comments in triplicate to the Federal Aviation Administration (FAA), Transport Airplane Directorate, ANM–103, Attention: Rules Docket No. 96–NM–216–AD, 1601 Lind Avenue, SW., Renton, Washington 98055–4056.

The service information referenced in this AD may be obtained from Boeing Commercial Airplane Group, P.O. Box 3707, Seattle, Washington 98124–2207. This information may be examined at the FAA, Transport Airplane Directorate, 1601 Lind Avenue, SW., Renton, Washington; or at the Office of the Federal Register, 800 North Capitol Street, NW., suite 700, Washington, DC.

FOR FURTHER INFORMATION CONTACT: Chris Hartonas, Aerospace Engineer, Systems and Equipment Branch, ANM–130S, FAA, Seattle Aircraft Certification Office, 1601 Lind Avenue, SW., Renton, Washington; telephone (206) 227–2864; fax (206) 227–1181.

SUPPLEMENTARY INFORMATION: The FAA recently received a report indicating that interruptions of electrical power occurred during flight on a Boeing Model 767 series airplane. These power interruptions resulted in the loss of battery power to the hot battery bus (HBB). The HBB is the source of standby power to the airplane. Investigation revealed that the reported loss of power to the HBB occurred due to cracked shunts, improper installation of fasteners on the shunt studs, and improper torque of shunt fasteners. It appears that the improper installation of fasteners on the shunt studs and improper torque of shunt fasteners occurred during manufacture.

Loose fasteners on the shunt studs can create an open circuit or high resistance in the connection of the main battery ground stud, which can cause an interruption of the battery charger and the loss of the HBB. The loss of the HBB and associated loads will cause multiple advisory level messages on the Engine Indication and Crew Alerting System (EICAS); loss of power to the standby buses/loads during standby operation; and the potential loss of center bus power. Such loss of standby power could adversely affect the function of the following systems:

1. the captain's standby instruments,
2. flight control electronics,
3. Very High Frequency (VHF) communications,
4. thrust reverser control,
5. standby ignition,
6. passenger oxygen,
7. fire detection and extinguishing, and
8. wing and engine anti-ice systems, among others.

Improper installation of the main battery shunt and ground stud connection of the main battery, if not corrected, could cause an interruption of electrical power and loss of battery power to the HBB during flight.

Explanation of Relevant Service Information

The FAA has reviewed and approved Boeing Alert Service Bulletin 767–24A0112, Revision 1, dated August 8, 1996, which describes procedures for inspection of the main battery shunt to detect contaminated fasteners, missing pressure washers or washers having an incorrect part number, or damage to the terminal posts or to the plastic base, and replacement of the main battery shunt, if necessary. The alert service bulletin also describes inspection of certain wire, washers, and brass jam nuts to detect any discrepancy, and replacement of any discrepant part with a serviceable part. Additionally, the alert service bulletin describes procedures for an inspection of the main battery ground stud to verify the torque and resistance, and adjustment of the torque and resistance, if necessary.

Explanation of the Requirements of the Rule

Since an unsafe condition has been identified that is likely to exist or develop on other Boeing Model 767 series airplanes of the same type design, this AD is being issued to prevent interruption of the electrical power during flight, which could result in loss of battery power to the source of standby power for the airplane. This AD requires inspection of the main battery shunt to detect contaminated fasteners, missing pressure washers or washers having an incorrect part number, or