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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2007-27736; Directorate Identifier 2007-NM-001-AD; Amendment 39-15010; AD 2007-07-05]

RIN 2120-AA64

Airworthiness Directives; Boeing Model 777 Airplanes

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

ACTION: Final rule; request for comments.

SUMMARY: The FAA is adopting a new airworthiness directive (AD) for all Boeing Model 777 airplanes. This AD requires a one-time inspection to determine the part number of the left and right air supply and cabin pressure controllers (ASCPCs) and installation of new ASCPC software if necessary. This AD results from a report of an ASCPC failure during flight. We are issuing this AD to prevent an ASCPC failure that could stop airflow into the airplane, inhibit the cabin altitude warning message, and cause an incorrect display of cabin altitude. These failures could result in depressurization of the airplane without warning.

DATES: This AD becomes effective April 18, 2007.

The Director of the Federal Register approved the incorporation by reference of a certain publication listed in the AD as of April 18, 2007.

We must receive comments on this AD by June 4, 2007.

ADDRESSES: Use one of the following addresses to submit comments on this AD.

- DOT Docket Web site: Go to <http://dms.dot.gov> and follow the instructions for sending your comments electronically.
- Government-wide rulemaking Web site: Go to <http://www.regulations.gov> and follow the instructions for sending your comments electronically.
- Mail: Docket Management Facility; U.S. Department of Transportation, 400 Seventh Street SW., Nassif Building, room PL-401, Washington, DC 20590.
- Fax: (202) 493-2251.
- Hand Delivery: Room PL-401 on the plaza level of the Nassif Building, 400 Seventh Street SW., Washington, DC, between 9:00 a.m. and 5:00 p.m., Monday through Friday, except Federal holidays.

Contact Boeing Commercial Airplanes, P.O. Box 3707, Seattle, Washington 98124-2207, for service information identified in this AD.

FOR FURTHER INFORMATION CONTACT: David Webber, Aerospace Engineer, Cabin Safety and Environmental Systems Branch, ANM-150S, FAA, Seattle Aircraft Certification Office, 1601 Lind Avenue, SW., Renton, Washington 98057-3356; telephone (425) 917-6451; fax (425) 917-6590.

SUPPLEMENTARY INFORMATION:

Discussion

We have received a report indicating that the left air supply and cabin pressure controller (ASCPC) incorrectly shut off the right air conditioning pack and the left bleed, and erratically opened and closed the isolation valves, on a Model 777 airplane during flight. This resulted in periods of loss of conditioned inflow to the cabin and flight deck. The flightcrew descended the airplane to 10,000 feet and returned to the airport. Investigation into this event revealed that the actions of the ASCPC resulted from a solder defect in the Aeronautical Radio, Inc. (ARINC) 629 hardware that occurred during manufacturing. The manufacturing error was determined to be an isolated event. However, subsequent analysis revealed a software deficiency within the ASCPC that would not detect this single point failure. This defect caused an intermittent open to ARINC 629 built-in-test (BIT) 13 for all input words. This, in turn, caused the ASCPC to enter the auxiliary power unit-to-pack takeoff (APT) mode above 30,000 feet. The ASCPC internal BIT did not detect the defect and allowed the ASCPC to continue to operate. This condition, if not corrected, could stop airflow into the airplane, inhibit the cabin altitude warning message, and cause an incorrect display of cabin altitude. These failures could result in depressurization of the airplane without warning.

Relevant Service Information

We have reviewed Boeing Service Bulletin 777-36A0026, Revision 1, dated February 8, 2007. The service bulletin describes procedures for installing new ASCPC operational program software (OPS) to prevent the failures caused by the solder defect. The software also includes updates that are not related to the defect.

The replacement software is different from the existing software as follows:

- APT logic is revised to improve fault tolerance.
- ARINC 629 integrity tests are added.
- Composite critical fault counter (CCFC) is revised to be reset to zero upon determination that no validated critical faults have occurred within the last one hour.
- List of parameters that are stored in the compact flash disk are updated.
- ARINC 429 wraparound BIT logic is revised to correct a fault isolation error.
- Core software for the central processing module (CPM) of the modular digital controller (MDC) is revised to initialize an un-initiated variable that could result in nuisance ASCPC faults.

Accomplishing the actions specified in the service information is intended to adequately address the unsafe condition.

FAA's Determination and Requirements of This AD

The unsafe condition described previously is likely to exist or develop on other airplanes of the same type design. For this reason, we are issuing this AD to prevent an ASCPC failure that could stop airflow into the airplane, inhibit the cabin altitude warning message, and cause an incorrect display of cabin altitude. These failures could result in depressurization of the airplane without warning. This AD requires a one-time inspection to determine the part number of the left and right ASCPCs and installation of new ASCPC software if necessary.

FAA's Determination of the Effective Date

Since an unsafe condition exists that requires the immediate adoption of this AD, we have found that notice and opportunity for public comment before issuing this AD are impracticable, and that good cause exists to make this AD effective in less than 30 days.

Comments Invited

This AD is a final rule that involves requirements that affect flight safety and was not preceded by notice and an opportunity for public comment; however, we invite you to submit any relevant written data, views, or arguments regarding this AD. Send your comments to an address listed in the ADDRESSES section. Include "Docket No. FAA-2007-27736; Directorate Identifier 2007-NM-001-AD" at the beginning of your comments. We specifically invite comments on the overall regulatory, economic, environmental, and energy aspects of the AD that might suggest a need to modify it.

We will post all comments we receive, without change, to <http://dms.dot.gov>, including any personal information you provide. We will also post a report summarizing each substantive verbal contact with FAA personnel concerning this AD. Using the search function of that web site, anyone can find and read the comments in any of our dockets, including the name of the individual who sent the comment (or signed the comment on behalf of an association, business, labor union, etc.). You may review the DOT's complete Privacy Act Statement in the Federal Register published on April 11, 2000 (65 FR 19477-78), or you may visit <http://dms.dot.gov>.

Examining the Docket

You may examine the AD docket on the Internet at <http://dms.dot.gov>, or in person at the Docket Management Facility office between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The Docket Management Facility office (telephone (800) 647-5227) is located on the plaza level of the Nassif Building at the DOT street address stated in the ADDRESSES section. Comments will be available in the AD docket shortly after the Docket Management System receives them.

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 the regulation:

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.

We prepared a regulatory evaluation of the estimated costs to comply with this AD and placed it in the AD docket. See the ADDRESSES section for a location to examine the regulatory evaluation.

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

Adoption of the Amendment

Accordingly, under the authority delegated to me by the Administrator, the FAA 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 Federal Aviation Administration (FAA) amends § 39.13 by adding the following new airworthiness directive (AD):



2007-07-05 Boeing: Amendment 39-15010. Docket No. FAA-2007-27736; Directorate Identifier 2007-NM-001-AD.

Effective Date

(a) This AD becomes effective April 18, 2007.

Affected ADs

(b) None.

Applicability

(c) This AD applies to all Boeing Model 777-200, -200LR, -300, and -300ER series airplanes, certificated in any category.

Unsafe Condition

(d) This AD results from a report of an air supply and cabin pressure controller (ASCPC) failure during flight. We are issuing this AD to prevent an ASCPC failure that could stop airflow into the airplane, inhibit the cabin altitude warning message, and cause an incorrect display of cabin altitude. These failures could result in depressurization of the airplane without warning.

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.

Inspection To Determine Part Number (P/N) of the ASCPCs

(f) For all airplanes: Within 90 days after the effective date of this AD, perform an inspection of the left and right ASCPCs to determine the part number.

ASCPC Software Installation

(g) For airplanes on which any ASCPC having P/N 1152972-4 is found during the inspection required by paragraph (f) of this AD: Within 90 days after the effective date of this AD, install new ASCPC operational program software (OPS) in accordance with the Accomplishment Instructions of Boeing Service Bulletin 777-36A0026, Revision 1, dated February 8, 2007.

Installation of Certain OPS Software Prohibited

(h) As of the effective date of this AD, installation of OPS P/N 3673-GRS-101-00, P/N 3670-GRS-102-00, or P/N 3671-GRS-103-00 is prohibited.

(i) As of the effective date of this AD, no person may install an ASCPC, P/N 111152972-4, on any airplane, unless it has had ASCPC OPS P/N 3676-GRS-104-00 installed in accordance with paragraph (g) of this AD.

Credit for Actions Done Using Previous Service Information

(j) Actions accomplished before the effective date of this AD in accordance with Boeing Alert Service Bulletin 777-36A0026, dated December 19, 2006, are considered acceptable for compliance with the corresponding actions specified in this AD.

Alternative Methods of Compliance (AMOCs)

(k)(1) The Manager, Seattle Aircraft Certification Office, FAA, has the authority to approve AMOCs for this AD, if requested in accordance with the procedures found in 14 CFR 39.19.

(2) To request a different method of compliance or a different compliance time for this AD, follow the procedures in 14 CFR 39.19. Before using any approved AMOC on any airplane to which the AMOC applies, notify your appropriate principal inspector (PI) in the FAA Flight Standards District Office (FSDO), or lacking a PI, your local FSDO.

Material Incorporated by Reference

(l) You must use Boeing Service Bulletin 777-36A0026, Revision 1, dated February 8, 2007, to perform the actions that are required by this AD, unless the AD specifies otherwise. The Director of the Federal Register approved the incorporation by reference of this document in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. Contact Boeing Commercial Airplanes, P.O. Box 3707, Seattle, Washington 98124-2207, for a copy of this service information. You may review copies at the FAA, Transport Airplane Directorate, 1601 Lind Avenue, SW., Renton, Washington; or at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202-741-6030, or go to: <http://www.archives.gov/federal-register/cfr/ibr-locations.html>.

Issued in Renton, Washington, on March 21, 2007.

Ali Bahrami,

Manager, Transport Airplane Directorate, Aircraft Certification Service.

[FR Doc. E7-5897 Filed 4-2-07; 8:45 am]