Rules and Regulations

Federal Register
Vol. 61, No. 198
Thursday, October 10, 1996

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. 96–NM–205–AD; Amendment 39–9767; AD 96–20–01]

RIN 2120–AA64

Airworthiness Directives; Boeing Model 777–200 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 777–200 series airplanes. This action requires a one-time inspection to determine the serial numbers of various switch modules on the overhead panel and control stand, and replacement of switch modules with new improved modules. This AD also requires repetitive tests of the cargo fire extinguishing system, and one-time tests of the fuel crossfeed valve, pack, trim air, and alternate flap control switches; and repair or replacement of switch modules with new improved modules, if necessary. This amendment is prompted by a report indicating that the flight crew received a warning of fire in the forward cargo compartment during flight; later inspection revealed that the metered fire bottles failed to discharge due to suspected contamination of the arming switch contacts of the cargo fire extinguishing system. The actions specified in this AD are intended to minimize contamination of the switch contacts and consequent failure of the switches, which, if not corrected, could result in inability of the flight crew to activate the cargo fire extinguishing, fuel, air conditioning, and alternate flap systems.

DATES: Effective October 25, 1996.

The incorporation by reference of certain publications listed in the regulations is approved by the Director of the Federal Register as of October 25, 1996.

Comments for inclusion in the Rules Docket must be received on or before December 9, 1996.

ADDRESSES: Submit comments in triplicate to the Federal Aviation Administration (FAA), Transport Airplane Directorate, ANM–103, Attention: Rules Docket No. 96–NM–205–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: Jeffrey Duven, Aerospace Engineer, Propulsion Branch, ANM–140S, FAA, Seattle Aircraft Certification Office, 1601 Lind Avenue, SW., Renton, Washington; telephone (206) 227–2688; fax (206) 227–1181.

SUPPLEMENTARY INFORMATION: The FAA received a report indicating that the flight crew received a warning of fire in the forward cargo compartment of a Boeing Model 777–200 series airplane during flight. In response to the warning, the flight crew pushed the forward arming and cargo fire discharge switches in an attempt to discharge the fire extinguishing bottles in the forward cargo compartment; subsequently, the flight crew landed the airplane safely. During a subsequent inspection, no evidence of smoke or fire was found in the forward cargo compartment. Both dump bottles of the fire extinguishing system (bottles 1A and 1B) had discharged. (Discharge of extinguishant from these dump bottles will bring a fire to a controllable level.) None of the three fire bottles of the metered system (bottles 2A, 2B, and 2C) had discharged. (If the fire bottles of the metered system do not discharge, the capability of the fire extinguishing system to suppress a sustained fire is reduced.) Additionally, the ventilation control mode for fire did not operate as designed. (The ventilation control for fire prevents smoke from entering the main deck and maintains the necessary concentration of Halon extinguishant in the cargo compartment.)

The false fire warning may have been caused by the high moisture content of the cargo located in the forward cargo compartment. Moisture has been known to trigger false detections in other cargo smoke detection systems. Failure of the fire bottles to discharge may have been caused by contamination of the arming switch contacts of the cargo fire extinguishing system. This contamination is a result of particles originating from a component internal to the switch. The internal component is made from a polyester material that has been found to be subject to knicking and chafing during assembly and subsequent operation of the switch. When the switch is pushed and activated, particles from the polyester material can contaminate the switch contacts and can prevent the switch from activating.

Subsequent to the report of the incident described previously, the FAA received several additional reports of failures of switches that are used in systems of the airplane other than the cargo fire extinguishing system, including the fuel, air conditioning, and alternate flaps systems. The FAA has determined that the switches in these systems are equally susceptible to the contamination described previously.

Contamination of the switch contacts and consequent failure of the switches, if not corrected, could result in inability of the flight crew to activate the cargo fire extinguishing, fuel, air conditioning, and alternate flap systems.

Explanation of Relevant Service Information

The FAA has reviewed and approved Boeing Alert Service Bulletin 777–26A0004, dated June 21, 1996. The alert service bulletin describes procedures for a one-time inspection to determine the serial numbers of the switch modules of the forward arming switch, the aft arming switch, and the discharge switch of the cargo fire extinguishing system; and replacement of certain switch modules with new improved modules, if necessary. These new improved switch modules are made of a more resilient nylon material that will reduce contamination. The alert service bulletin also describes procedures for functional tests of the cargo fire extinguishing system following

accomplishment of the inspection/replacement. The alert service bulletin references Boeing Component Service Bulletin 233W3212–80–01, dated June 21, 1996, as an additional source of service information for accomplishment of the inspection/replacement.

The FAA also has reviewed and approved Boeing Alert Service Bulletin 777–31A0013, dated August 29, 1996. The alert service bulletin describes procedures for a one-time inspection to determine the serial numbers of the switch modules of the alternate flaps arm switch on the P10 control stand, the forward and aft fuel crossfeed switches on the fuel/fuel jettison module assembly, and the left and right air conditioning pack and trim air switches on the air conditioning module assembly; and replacement of certain switch modules with new improved modules.

The alert service bulletin also describes procedures for a one-time functional test of the fuel crossfeed valve switches; and a one-time operational test of the pack switches, the trim air switches, and the alternate flap control switches following accomplishment of the inspection/replacement.

This alert service bulletin references two other service bulletins as additional sources of service information for accomplishing the inspection/replacement:

1. Boeing Component Service Bulletin 233W3204–21–01, dated August 29, 1996 (for the pack and trim air switches); and

2. Boeing Component Service Bulletin 233W3203–28–01, dated August 29, 1996 (for the fuel crossfeed valve switches).

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 777–200 series airplanes of the same type design, this AD is being issued to minimize contamination of the switch contacts and consequent failure of the switches, which, if not corrected, could result in inability of the flight crew to activate the cargo fire extinguishing, fuel, air conditioning, and alternate flap systems. This AD requires a one-time inspection to determine the serial numbers of various switch modules on the overhead panel and control stand, and replacement of switch modules with new improved modules. This AD also requires repetitive tests of the cargo fire extinguishing system, and one-time tests of the fuel crossfeed valve, pack, trim air, and alternate flap control switches; and repair or replacement of switch modules with new improved modules, if necessary. The repair is required to be accomplished in accordance with normal maintenance practices. Other actions are required to be accomplished in accordance with the alert service bulletins described previously.

This AD also prohibits dispatch of an airplane with any air conditioning pack or fuel crossfeed valve inoperative until the one-time inspection of the switch modules of alternate flaps arm switch, the fuel crossfeed switches, and the air conditioning pack and trim air switches is accomplished, switch modules are replaced (as necessary), and the one-time tests of the fuel crossfeed valve, pack, trim air, and alternate flap control switches are accomplished.

Differences Between Relevant Service Information and AD

1. Operators should note that Boeing Alert Service Bulletin 777–31A0013 identifies the new improved switch modules as those on which the first four digits of the serial number are 9544 or greater. However, the FAA has been advised that switch modules on which the first four digits of the serial number are 9634, 9635, 9636, 9637, and 9638 were potentially subjected to excessive heat and pressure during the manufacturing process and are subject to internal shorting, which can cause malfunction of a switch. ''New improved modules'' are defined in this AD as those on which the first four digits of the serial number are 9544 or greater, excluding 9634, 9635, 9636, 9637, and 9638.

2. In addition, the effectivity listing specified in Boeing Alert Service Bulletin 777–26A0004 does not address recently delivered airplanes having line positions 33 and subsequent. Further, the effectivity listing specified in Boeing Alert Service Bulletin 777–31A0013 does not address airplanes having line positions 37 and subsequent. This AD, however, requires that the actions of paragraph (a), (b), or (c), as applicable, be accomplished on airplanes having line positions 1 through 40 (inclusive).

3. While the effect of all AD's, in conjunction with section 39.3 of the Federal Aviation Regulations (14 CFR 39.3), is to prohibit installation of ''bad'' parts after the deadline for their replacement, the FAA has determined that it is appropriate to make this prohibition explicit in this case because of the commonality of the part number of the ''bad'' and ''good'' parts. The intent of paragraph (d) of this AD is to ensure that any replacement of a switch module associated with certain flight-critical systems that is accomplished as of 30 days after the effective date of this AD is consistent with the original intent of the AD; that is, the switch module must be replaced with a new improved switch module [that is, a module on which the first four digits of the serial number are 9544 or greater (excluding 9634 through 9638 inclusive)].

Interim Action

The requirements of this AD are considered to be interim action. The FAA has determined that as many as 76 switches on these airplanes may be equally susceptible to the addressed contamination problems. This AD requires actions to address the 10 switches that are associated with the most flight-critical systems. The FAA is considering additional rulemaking to address other switches that are susceptible to contamination.

Determination of Rule's Effective Date

Since a situation exists that requires the immediate adoption of this regulation, it is found that notice and opportunity for prior public comment hereon are impracticable, and that good cause exists for making this amendment effective in less than 30 days.

Comments Invited

Although this action is in the form of a final rule that involves requirements affecting flight safety and, thus, was not preceded by notice and an opportunity for public comment, comments are invited on this rule. Interested persons are invited to comment on this rule by submitting such written data, views, or arguments as they may desire. Communications shall identify the Rules Docket number and be submitted in triplicate to the address specified under the caption **ADDRESSES**. All communications received on or before the closing date for comments will be considered, and this rule may be amended in light of the comments received. Factual information that supports the commenter's ideas and suggestions is extremely helpful in evaluating the effectiveness of the AD action and determining whether additional rulemaking action would be needed.

Comments are specifically invited on the overall regulatory, economic, environmental, and energy aspects of the rule that might suggest a need to modify the rule. All comments submitted will be available, both before and after the closing date for comments, in the Rules Docket for examination by interested persons. A report that summarizes each FAA-public contact concerned with the substance of this AD will be filed in the Rules Docket.

Commenters wishing the FAA to acknowledge receipt of their comments submitted in response to this rule must submit a self-addressed, stamped postcard on which the following statement is made: ''Comments to Docket Number 96–NM–205–AD.'' The postcard will be date stamped and returned to the commenter.

Regulatory Impact

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.

The FAA has determined that this regulation is an emergency regulation that must be issued immediately to correct an unsafe condition in aircraft, and that it is not a ''significant regulatory action'' under Executive Order 12866. It has been determined further that this action involves an emergency regulation under DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979). If it is determined that this emergency regulation otherwise would be significant under DOT Regulatory Policies and Procedures, a final regulatory evaluation will be prepared and placed in the Rules Docket. A copy of it, if filed, 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:

96–20–01 Boeing: Amendment 39–9767. Docket 96–NM–205–AD.

Applicability: Model 777–200 series airplanes having line positions 1 through 40 inclusive, certificated in any category.

Note 1: This AD applies to each airplane identified in the preceding applicability provision, regardless of whether it has been otherwise modified, altered, or repaired in the area subject to the requirements of this AD. For airplanes 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 minimize contamination of the switch contacts and consequent failure of the switches, which, if not corrected, could result in inability of the flight crew to activate the cargo fire extinguishing, fuel, air conditioning, and alternate flap systems; accomplish the following:

(a) For airplanes having line positions 1 through 40 inclusive: Within 30 days after the effective date of this AD, accomplish the requirements of paragraphs (a)(1) and (a)(2) of this AD in accordance with Boeing Alert Service Bulletin 777–26A0004, dated June 21, 1996.

Note 2: Boeing Alert Service Bulletin 777–26A0004 references Boeing Component Service Bulletin 233W3212–80–01, dated June 21, 1996, as an additional source of service information for accomplishment of the one-time inspection and replacement.

(1) Perform a one-time inspection to determine the serial numbers of the switch modules of the forward arming switch, the aft arming switch, and the discharge switch of the cargo fire extinguishing system; in accordance with the alert service bulletin. If the first four digits of the serial number of the switch module are less than 9544, or if the first four digits of the serial number of the switch module are 9634, 9635, 9636, 9637, or 9638, prior to further flight, replace the switch module with a new improved module (that is, a module on which the first four digits of the serial number are 9544 or greater, excluding 9634 through 9638 inclusive) in accordance with the alert service bulletin. And

(2) Perform a functional test of the cargo fire extinguishing system in accordance with paragraph III.C. of the Accomplishment Instructions of the alert service bulletin. Thereafter, repeat the functional test at intervals not to exceed 12 months.

(i) If the cargo fire extinguishing system fails any functional test required by paragraph (a)(2) of this AD and the failure is determined to be caused by a defective switch module, prior to further flight, replace any discrepant switch module in that system with a new improved module (a module on which the first four digits of the serial number are 9544 or greater, excluding 9634 through 9638 inclusive) in accordance with the alert service bulletin.

(ii) If the cargo fire extinguishing system fails any functional test required by paragraph (a)(2) of this AD and the failure is determined to be caused by a condition other than a defective switch module, prior to further flight, repair in accordance with normal maintenance practices.

(b) For airplanes having line positions 2 through 9 inclusive, 11 through 13 inclusive, 15 through 17 inclusive, and 19 through 36 inclusive: The airplane may not be dispatched with any air conditioning pack or fuel crossfeed valve inoperative. Once the actions required by paragraph (c) of this AD are accomplished, the airplane may be dispatched with one or both air conditioning packs and one fuel crossfeed valve inoperative, in accordance with the provisions and limitations specified in the Master Minimum Equipment List (MMEL).

(c) For airplanes having line positions 1 through 40 inclusive: Within 30 days after the effective date of this AD, accomplish the requirements of paragraphs (c)(1) and (c)(2) in accordance with Boeing Alert Service Bulletin 777–31A0013, dated August 29, 1996.

Note 3: Boeing Alert Service Bulletin 777–31A0013 references Boeing Component Service Bulletin 233W3204–21–01, dated August 29, 1996 (for the pack and trim air switches), and Boeing Component Service Bulletin 233W3203–28–01, dated August 29, 1996 (for the fuel crossfeed valve switches), as additional sources of service information for accomplishment of the one-time inspection and replacement.

(1) Perform a one-time inspection to determine the serial numbers of the switch modules of the alternate flaps arm switch on the P10 control stand, the forward and aft fuel crossfeed switches on the fuel/fuel jettison module assembly, and the left and right air conditioning pack and trim air switches on the air conditioning module assembly; in accordance with the Accomplishment Instructions of the alert service bulletin, with the exception of paragraph A of those Accomplishment Instructions. In lieu of that paragraph of the alert service bulletin, accomplish the following: Open the circuit breakers listed in Table 1 of this AD and attach ''DO-NOT-CLOSE'' tags:

TABLE 1.—CIRCUIT BREAKERS TO BE OPENED AND TAGGED

Location (panel/grid)	Name	Circuit breaker
P110/L23	FUEL XFEED VLV FWD	C28629.

TABLE 1.—CIRCUIT BREAKERS TO BE OPENED AND TAGGED—Continued

Location (panel/grid)	Name	Circuit breaker
P310/G9	FUEL XFEED VLV AFT	C28612.
P310/A8	SNSR EXC 1	C27513.
P310/D3	FSEU 1	C27601.
P210/F21	SNSR EXC 2	C27514.
P210/K4	FSEU 2	C27602.
P11/D6	OPAS 1	C23603.
P11/G20	OPAS 2	C23602.
P11/B7	OPAS 3	C23605.
P210/K8	SLATS ELEC CNTL RLY PWR	C27630.
P110/K17	FLAPS ELEC CNTL RLY PWR	C27631.
P110/F4	OVHD INST & PNL LTS/FWD PNL FLOOD LTS	C33410.
P110/G4	AISLE STAND INST & PNL LTS	C33492.
P110/N25	MD & T CHANNEL 1	C33605.
P310/B3	MD & T CHANNEL 3	C33610.
P310/F4	MD & T CHANNEL 4	C33611.
P210/M3	MD & T CHANNEL 5	C33604.

If the first four digits of the serial number of the switch module are less than 9544; or if the first four digits of the serial number of the switch module are 9634, 9635, 9636, 9637, or 9638; prior to further flight, replace the switch module with a new improved switch module (a module on which the first four digits of the serial number are 9544 or greater, excluding 9634 through 9638 inclusive) in accordance with the alert service bulletin.

Note 4: Opening the three OPAS circuit breakers will disable control of the air conditioning packs from the air conditioning control panel. If it is desired to turn on the air conditioning pack during incorporation of the alert service bulletin, the pack should be turned on before opening the OPAS circuit breakers.

(2) Perform a one-time functional test of the fuel crossfeed valve switches, a one-time operational test of the pack switches, a one-time operational test of the trim air switches, and a one-time operational test of the alternate flap control switches in accordance with paragraphs III.F., III.G., III.H., and III.I., respectively, of the Accomplishment Instructions of the alert service bulletin.

(i) If any switch module fails any test required by paragraph (c)(2) of this AD and the failure is determined to be caused by a defective switch module, prior to further flight, replace any discrepant switch module in that system with a new improved module (a module on which the first four digits of the serial number are 9544 or greater, excluding 9634 through 9638 inclusive) in accordance with the alert service bulletin.

(ii) If any switch module fails any test required by paragraph (c)(2) of this AD and the failure is determined to be caused by a condition other than a defective switch module, prior to further flight, repair in accordance with normal maintenance practices.

(d) For airplanes having line positions 1 through 40 inclusive: As of 30 days after the effective date of this AD, no person shall install on any airplane a switch module on which the first four digits of the serial number are less than 9544, or a switch module on which the first four digits of the serial number are 9634, 9635, 9636, 9637, or 9638 at the locations listed in paragraphs (d)(1) through (d)(6) of this AD:

(1) the discharge switch of the cargo fire extinguishing system;

(2) the alternate flaps arm switch on the P10 control stand;

(3) the forward and aft arming switches of the cargo fire extinguishing system;

(4) the forward and aft fuel crossfeed switches on the fuel/fuel jettison module assembly;

(5) the left and right air conditioning pack switches on the air conditioning module assembly; and

(6) the left and right trim air switches on the air conditioning module assembly.

(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, Seattle Aircraft Certification Office (ACO), FAA, Transport Airplane Directorate. Operators shall submit their requests through an appropriate FAA Principal Maintenance Inspector, who may add comments and then send it to the Manager, Seattle ACO.

Note 5: Information concerning the existence of approved alternative methods of compliance with this AD, if any, may be obtained from the Seattle ACO.

(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 airplane to a location where the requirements of this AD can be accomplished.

(g) The inspection and replacement shall be done in accordance with Boeing Alert Service Bulletin 777–26A0004, dated June 21, 1996, and Boeing Alert Service Bulletin 777–31A0013, dated August 29, 1996. 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 Boeing Commercial Airplane Group, P.O. Box 3707, Seattle, Washington 98124–2207. Copies may be inspected 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.

(h) This amendment becomes effective on October 25, 1996.

Issued in Renton, Washington, on October 2, 1996.

Ronald T. Wojnar,

Manager, Transport Airplane Directorate, Aircraft Certification Service.

[FR Doc. 96–25814 Filed 10–9–96; 8:45 am]

BILLING CODE 4910–13–P

14 CFR Part 39

[Docket No. 95–ANE–15; Amendment 39–9742; AD 96–18–16]

RIN 2120–AA64

Airworthiness Directives; CFM International CFM56–2/–2A/–2B/–3/–3B/–3C/–5 Series Turbofan Engines

AGENCY: Federal Aviation Administration, DOT.

ACTION: Final rule.

SUMMARY: This amendment adopts a new airworthiness directive (AD), applicable to CFM International (CFMI) CFM56–2/–2A/–2B/–3/–3B/–3C/–5 series turbofan engines, that requires part number reidentification of certain low pressure turbine rotor (LPTR) stub shafts and conical supports, and reduction of the low cycle fatigue (LCF) retirement lives for these reidentified parts. This amendment is prompted by the results of a refined life analysis performed by the manufacturer which revealed minimum calculated LCF lives significantly lower than published LCF retirement lives. The actions specified by this AD are intended to prevent an LCF failure of the LPTR stub shaft and conical support, which could result in an uncontained engine failure and damage to the aircraft.

DATES: Effective December 9, 1996.

The incorporation by reference of certain publications listed in the