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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2010-1272; Directorate Identifier 2010-NM-226-AD; Amendment 39-16712; AD 2011-12-05]

RIN 2120-AA64

Airworthiness Directives; The Boeing Company Model 727, 727C, 727-100, 727-100C, 727-200, and 727-200F Series Airplanes

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule.

SUMMARY: We are adopting a new airworthiness directive (AD) for the products listed above. This AD requires replacing the existing unshielded fuel quantity indication system (FQIS) wire bundles with double shielded FQIS wire bundles, installing a new wire feed-through fitting, and grounding the wire shields, as applicable; and doing repetitive low frequency eddy current (LFEC) inspections for cracking of the fuselage skin, and corrective actions if necessary. This AD also requires revising the maintenance program to incorporate certain airworthiness limitations. This AD was prompted by fuel system reviews conducted by the manufacturer. We are issuing this AD to increase the level of protection from lightning strikes and prevent the potential of ignition sources inside fuel tanks, which, in combination with flammable fuel vapors, could result in fuel tank explosions and consequent loss of the airplane.

DATES: This AD is effective July 15, 2011.

The Director of the Federal Register approved the incorporation by reference of certain publications listed in the AD as of July 15, 2011.

ADDRESSES: For service information identified in this AD, contact Boeing Commercial Airplanes, Attention: Data & Services Management, P.O. Box 3707, MC 2H-65, Seattle, Washington 98124-2207; telephone 206-544-5000, extension 1; fax 206-766-5680; e-mail me.boecom@boeing.com; Internet <https://www.myboeingfleet.com>. You may review copies of the referenced service information at the FAA, Transport Airplane Directorate, 1601 Lind Avenue, SW., Renton, Washington. For information on the availability of this material at the FAA, call 425-227-1221.

Examining the AD Docket

You may examine the AD docket on the Internet at <http://www.regulations.gov>; or in person at the Docket Management Facility between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this AD, the regulatory evaluation, any comments received, and other information. The address for the Docket Office (phone: 800-647-5527) is Document Management Facility, U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue, SE., Washington, DC 20590.

FOR FURTHER INFORMATION CONTACT: Louis Natsiopoulos, Aerospace Engineer, Systems and Equipment Branch, ANM-130S, FAA, Seattle Aircraft Certification Office, 1601 Lind Avenue, SW., Renton, Washington 98057-3356; phone: 425-917-6478; fax: 425-917-6590; e-mail: elias.natsiopoulos@faa.gov.

SUPPLEMENTARY INFORMATION:

Discussion

We issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 to include an airworthiness directive (AD) that would apply to the specified products. That NPRM published in the Federal Register on January 3, 2011 (76 FR 31). That NPRM proposed to require replacing the existing unshielded fuel quantity indication system (FQIS) wire bundles with double shielded FQIS wire bundles, installing a new wire feed-through fitting, and grounding the wire shields, as applicable; and doing repetitive low frequency eddy current (LFEC) inspections for cracking of the fuselage skin, and corrective actions if necessary. That NPRM also proposed to require revising the maintenance program to incorporate certain airworthiness limitations.

Comments

We gave the public the opportunity to participate in developing this AD. The following presents the comment received on the proposal and the FAA's response to the comment.

Request for Explanation of Alternative Method of Compliance (AMOC) Authority for Structures Portions of the NPRM

Boeing requested that we explain that some designees with AMOC authority may be necessary for the structural portions of the AD. Boeing stated that repairs to airplane structure, if needed, would also be an AMOC to the AD and would need to be noted as such and approved by the FAA or a Boeing Authorized Representative designated with AMOC authority for the structural aspects of this installation. Boeing added that any repair would need to address damage tolerance issues associated with 14 CFR 25.571 and 14 CFR part 26, subpart E. of the Federal Aviation Regulations. Boeing stated that these requirements are the basis for the inspections provided in Boeing Service Bulletin 727-28-0131, dated August 18, 2010, and changes to the installation with repairs may revise the inspection requirements.

We agree with the request to add explanatory information to paragraph (i) of this AD. Any structural repairs that cannot be done in accordance with the accomplishment instructions of Boeing Service Bulletin 727-28-0131, dated August 18, 2010, will require a request for an AMOC. The requested AMOC, if it provides an acceptable level of safety, may be approved by the Boeing Commercial Airplanes Organization Designation Authorization (ODA) that has been authorized by the Manager, Seattle ACO to make those findings. Paragraph (i) of this AD has been changed to explain that some designees with AMOC authority for the structures portions of the AD might be necessary.

Conclusion

We reviewed the relevant data, considered the comments received, and determined that air safety and the public interest require adopting the AD with the change described previously and minor editorial changes. We have determined that these minor changes:

- Are consistent with the intent that was proposed in the NPRM for correcting the unsafe condition; and
- Do not add any additional burden upon the public than was already proposed in the NPRM.

We also determined that these changes will not increase the economic burden on any operator or increase the scope of the AD.

Costs of Compliance

We estimate that this AD affects 566 airplanes of U.S. registry.

We estimate the following costs to comply with this AD:

Estimated Costs

Action	Labor cost	Parts cost	Cost per product	Cost on U.S. operators
Installation	Between 86 and 247 work-hours X \$85 per hour = Between \$7,310 - \$20,995 ¹	Between \$16,191 and \$34,712 ¹	Between \$23,501 and \$55,707 ¹	Up to \$27,195,925 ²
Inspection	2 work-hours X \$85 per hour = \$170 per inspection cycle	\$0	\$170	\$96,220 per inspection cycle
Maintenance Program Revision	1 work-hour X \$85 per hour = \$85	\$0	\$85	\$48,110

¹ Depending on configuration.

² The cost to U.S. operators is based on configuration and number of airplanes in that configuration.

We have received no definitive data that would enable us to provide a cost estimate for the on-condition action specified in this AD.

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

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),
- (3) Will not affect intrastate aviation in Alaska, and
- (4) 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.

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 FAA amends § 39.13 by adding the following new airworthiness directive (AD):



2011-12-05 The Boeing Company: Amendment 39-16712; Docket No. FAA-2010-1272; Directorate Identifier 2010-NM-226-AD.

Effective Date

(a) This AD is effective July 15, 2011.

Affected ADs

(b) None.

Applicability

(c) This AD applies to The Boeing Company Model 727, 727C, 727-100, 727-100C, 727-200, and 727-200F series airplanes, all variable numbers, certificated in any category.

Note 1: This AD requires revisions to certain operator maintenance documents to include new inspections. Compliance with these inspections is required by 14 CFR 91.403(c). For airplanes that have been previously modified, altered, or repaired in the areas addressed by these inspections, the operator may not be able to accomplish the inspections described in the revisions. In this situation, to comply with 14 CFR 91.403(c), the operator must request approval for an alternative method of compliance according to paragraph (l) of this AD. The request should include a description of changes to the required inspections that will ensure the continued operational safety of the airplane.

Subject

(d) Joint Aircraft System Component (JASC)/Air Transport Association (ATA) of America Code 28, Fuel.

Unsafe Condition

(e) This AD was prompted by fuel system reviews conducted by the manufacturer. We are issuing this AD to increase the level of protection from lightning strikes and prevent the potential of ignition sources inside fuel tanks, which, in combination with flammable fuel vapors, could result in fuel tank explosions and consequent loss of the airplane.

Compliance

(f) Comply with this AD within the compliance times specified, unless already done.

Installation

(g) Within 60 months after the effective date of this AD, install double shielded fuel quantity indicating system (FQIS) wire bundles, install a new wire feed-through fitting, and ground the wire

shields, as applicable, in accordance with Part 1 of the Accomplishment Instructions of Boeing Service Bulletin 727-28-0131, dated August 18, 2010.

Repetitive Inspections

(h) At the applicable times specified in paragraphs (h)(1) or (h)(2) of this AD, do low frequency eddy current (LFEC) inspections for cracking of the fuselage skin, in accordance with Part 2 of the Accomplishment Instructions of Boeing Service Bulletin 727-28-0131, dated August 18, 2010.

(1) For Model 727, 727-100, 727-100C, and 727C series airplanes: Before the accumulation of 45,000 total flight cycles, or within 8,000 flight cycles after the effective date of this AD, whichever occurs later. Repeat the inspections thereafter at intervals not to exceed 8,000 flight cycles.

(2) For Model 727-200 and 727-200F series airplanes: Before the accumulation of 45,000 total flight cycles, or within 16,000 flight cycles after the effective date of this AD, whichever occurs later. Repeat the inspections thereafter at intervals not to exceed 16,000 flight cycles.

(i) If any cracking is found during any inspection required by paragraph (h) of this AD: Before further flight, repair the crack in accordance with a method approved by the Manager, Seattle ACO, FAA. For a repair method to be approved, the repair must meet the certification basis of the airplane, and the approval must specifically refer to this AD. An alternative method of compliance that provides an acceptable level of safety may be used for any repair required by this AD if it is approved by the Boeing Commercial Airplanes Organization Designation Authorization (ODA) that has been authorized by the Manager, Seattle ACO, to make those findings.

Maintenance Program Revision

(j) Before or concurrently with doing the actions required by paragraph (g) of this AD, or within 30 days after the effective date of this AD, whichever occurs later: Revise the maintenance program by incorporating airworthiness limitations (AWL) No. 28-AWL-18 and 28-AWL-19 in Section D of Section 9 ("AIRWORTHINESS LIMITATIONS-FUEL SYSTEMS") of the Boeing 727-100/200 Airworthiness Limitations (AWLs) Document, D6-8766-AWL, Revision August 2010. The initial compliance time for AWL No. 28-AWL-18 is within 10 years after the accomplishment of paragraph (g) of this AD, or within 10 years after the effective date of this AD, whichever occurs later.

No Alternative Inspections, Inspection Intervals, or Critical Design Configuration Control Limitations (CDCCLs)

(k) After accomplishing the action specified in paragraph (j) of this AD, no alternative inspections, inspection intervals, or CDCCLs may be used unless the inspections, intervals, or CDCCLs are approved as an alternative method of compliance in accordance with the procedures specified in paragraph (l) of this AD.

Alternative Methods of Compliance (AMOCs)

(l)(1) The Manager, Seattle ACO, FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. In accordance with 14 CFR 39.19, send your request to your principal inspector or local Flight Standards District Office, as appropriate. If sending information directly to the manager of the ACO, send it to the attention of the person identified in the Related Information section of this AD. Information may be e-mailed to: 9-ANM-Seattle-ACO-AMOC-Requests@faa.gov.

(2) Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the local flight standards district office/certificate holding district office.

(3) An AMOC that provides an acceptable level of safety may be used for any repair required by this AD if it is approved by the Boeing Commercial Airplanes ODA that has been authorized by the Manager, Seattle ACO, to make those findings. For a repair method to be approved, the repair must meet the certification basis of the airplane, and the approval must specifically refer to this AD.

Related Information

(m) For more information about this AD, contact Louis Natsiopoulos, Aerospace Engineer, Systems and Equipment Branch, ANM-130S, FAA, Seattle Aircraft Certification Office, 1601 Lind Avenue, SW., Renton, Washington 98057-3356; phone: 425-917-6478; fax: 425-917-6590; e-mail: elias.natsiopoulos@faa.gov.

Material Incorporated by Reference

(n) You must use Boeing Service Bulletin 727-28-0131, dated August 18, 2010; and Section 9 of the Boeing 727-100/200 Airworthiness Limitations (AWLs) Section 9, Document D6-8766-AWL, Revision August 2010; to do the actions required by this AD, unless the AD specifies otherwise. "Section 9" is referenced only in the List of Effective Pages section of the Boeing 727-100/200 AWLs Document.

(1) The Director of the Federal Register approved the incorporation by reference of the service information under 5 U.S.C. 552(a) and 1 CFR part 51.

(2) For service information identified in this AD, contact Boeing Commercial Airplanes, Attention: Data & Services Management, P.O. Box 3707, MC 2H-65, Seattle, Washington 98124-2207; telephone 206-544-5000, extension 1; fax 206-766-5680; e-mail me.boecom@boeing.com; Internet <https://www.myboeingfleet.com>.

(3) You may review copies of the service information at the FAA, Transport Airplane Directorate, 1601 Lind Avenue, SW., Renton, Washington. For information on the availability of this material at the FAA, call 425-227-1221.

(4) You may also review copies of the service information that is incorporated by reference at the National Archives and Records Administration (NARA). For information on the availability of this material at an NARA facility, call 202-741-6030, or go to http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html.

Issued in Renton, Washington, on May 11, 2011.

Ali Bahrami,
Manager, Transport Airplane Directorate,
Aircraft Certification Service.