[4910-13-P]

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2012-1069; Directorate Identifier 2012-NM-044-AD]

RIN 2120-AA64

Airworthiness Directives; The Boeing Company Airplanes

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Notice of proposed rulemaking (NPRM).

SUMMARY: We propose to supersede an existing airworthiness directive (AD) that applies to all The Boeing Company Model 727 airplanes. The existing AD currently requires repetitive inspections of the in-tank fuel boost pump wiring to detect chafing of the wire insulation, evidence of electrical arcing, or arc-through of the conduit wall, and applicable corrective action; and installation of sleeving over the in-tank fuel boost pump wires. The existing AD also requires repetitive inspections for damage of a certain electrical wire and sleeve, and arcing damage of the conduit and signs of fuel leakage into the conduit; applicable investigative and corrective actions; and repetitive engine fuel suction feed operational tests. Since we issued that AD, we received a report of damage found to the sleeve, jacket, and insulation on an electrical wire during a repetitive inspection. This proposed AD would require replacement of the wire bundles for the wing and center fuel boost pumps with new, improved wire bundles, installation of convoluted liners, and related investigative and corrective actions if necessary. This proposed AD would also require replacement of the fuel quantity indicating system (FQIS) wires with new, improved wires; a low-frequency eddy current inspection for cracking; and repair if necessary. This proposed AD would also require revising the maintenance program to incorporate changes to the airworthiness limitations section. We

are proposing this AD to detect and correct chafing of the fuel boost pump electrical wiring and leakage of fuel into the conduit, and to prevent electrical arcing between the wiring and the surrounding conduit, which could result in arc-through of the conduit, and consequent fire or explosion of the fuel tank.

DATES: We must receive comments on this proposed AD by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

ADDRESSES: You may send comments, using the procedures found in 14 CFR 11.43 and 11.45, by any of the following methods:

• Federal eRulemaking Portal: Go to http://www.regulations.gov. Follow the instructions for submitting comments.

• Fax: 202-493-2251.

• Mail: U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE., Washington, DC 20590.

• Hand Delivery: Deliver to Mail address above between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

For service information identified in this proposed AD, contact Boeing Commercial Airplanes, Attention: Data & Services Management, P. O. Box 3707, MC 2H-65, Seattle, WA 98124-2207; telephone 206-544-5000, extension 1; fax 206-766-5680; 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, WA. 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 proposed AD, the regulatory evaluation, any comments received, and other information. The street address for the Docket Office (phone: 800-647-5527) is in the ADDRESSES section. Comments will be available in the AD docket shortly after receipt.

FOR FURTHER INFORMATION CONTACT: Rebel Nichols, Aerospace Engineer, Propulsion Branch, ANM-140S, FAA, Seattle Aircraft Certification Office, 1601 Lind Avenue SW., Renton, WA 98057-3356; phone: 425-917-6509; fax: 425-917-6590; email: rebel.nichols@faa.gov.

SUPPLEMENTARY INFORMATION:

Comments Invited

We invite you to send any written relevant data, views, or arguments about this proposed AD. Send your comments to an address listed under the ADDRESSES section. Include "Docket No. FAA-2012-1069; Directorate Identifier 2012-NM-044-AD" at the beginning of your comments. We specifically invite comments on the overall regulatory, economic, environmental, and energy aspects of this proposed AD. We will consider all comments received by the closing date and may amend this proposed AD because of those comments.

We will post all comments we receive, without change, to http://www.regulations.gov, including any personal information you provide. We will also post a report summarizing each substantive verbal contact we receive about this proposed AD.

Discussion

On May 1, 2007, we issued AD 2007-11-08, Amendment 39-15065 (72 FR 28594, May 22, 2007), for all The Boeing Company Model 727, 727C, 727-100, 727-100C, 727-200, and 727-200F series airplanes. That AD requires repetitive inspections of the in-tank fuel boost pump wiring to detect chafing of the wire insulation,

evidence of electrical arcing, or arc-through of the conduit wall, and applicable corrective action; and installation of sleeving over the in-tank fuel boost pump wires as a method to protect the wiring from chafing. That AD also requires repetitive inspections for damage of the electrical wire and sleeve that run to the fuel boost pump through a conduit in the fuel tank, and arcing damage of the conduit and signs of fuel leakage into the conduit; applicable investigative and corrective actions; repetitive engine fuel suction feed operational tests; an engine fuel suction feed operational test; related investigative and corrective actions, as applicable; and sending inspection results and damaged parts to the manufacturer.

Actions Since Existing AD (72 FR 28594, May 22, 2007) Was Issued

In the preamble to AD 2007-11-08, Amendment 39-15065 (72 FR 28594, May 22, 2007), the FAA indicated that the actions required by that AD were considered "interim action" and that further rulemaking action was being considered. The FAA now has determined that further rulemaking action is indeed necessary, and this proposed AD follows from that determination.

Further, since we issued AD 2007-11-08, Amendment 39-15065 (72 FR 28594, May 22, 2007), we received a report of damage found to the sleeve, jacket, and insulation on an electrical wire during a repetitive inspection approximately 21,000 flight hours after installation of the sleeve. (The inspection interval in AD 2007-11-08 is 30,000 flight hours.) The sleeve and jacket were worn through, exposing the insulation on the electrical wire inside the jacket. The actions developed by the manufacturer eliminate the possibility of wiring damage during reinstallation following the repetitive inspections.

Relevant Service Information

We reviewed Boeing Alert Service Bulletin 727-28A0133, dated October 5, 2011. This service bulletin describes procedures for replacing wire bundles for the wing and center fuel boost pumps, installing convoluted liners, and related investigative and

corrective actions. This service bulletin specifies that doing these actions eliminates the need for the inspections specified in Boeing Alert Service Bulletin 727-28A0132, dated February 22, 2007 (which is referenced as the appropriate source of service information for inspections specified in AD 2007-11-08, Amendment 39-15065 (72 FR 28594, May 22, 2007)). Replacing the wire bundles and installing the convoluted liners includes:

- Installing new ground brackets, removing fuel boost pumps from the fuel boost pump housing, and removing wire bundles and sleeves.
- Removing or stowing fuel boost pump wire bundles, installing new convoluted liners and new wire bundles in the fuel boost pump conduits.
- Routing new wire bundles.
- Installing fuel boost pumps and making changes to the wire bundles.
- Installing the ground stud assembly for wire bundles.

Related investigative actions include testing the fuel tank conduits for leaks and testing the fuel boost pumps. Corrective actions include repairing or replacing the fuel tank conduit.

Boeing Alert Service Bulletin 727-28A0133, dated October 5, 2011, specifies prior or concurrent accomplishment of the actions specified in Boeing Service Bulletin 727-28-0131, dated August 18, 2010, for the following actions:

- Replacing the FQIS wires with new wires, which includes: Installing new ground brackets in the left and right wing, a new disconnect bracket in the cargo compartment, and a new tie plate in the cargo compartment; making and installing new doublers in the left and right wing; installing new standoffs in the left and right wing; drilling new holes or ground holes in left and right wing; changing the wire bundles; making changes to wire bundle routes; and making changes to wire bundles and assembling wire bundle overbraids.

- Doing a low-frequency eddy current (LFEC) inspection for cracks in certain locations of the fuselage skin, and repair if necessary, in accordance with Boeing Service Bulletin 727-28-0131, dated August 18, 2010.

Airworthiness Limitation Instruction (ALI) Task 28-AWL-20, "Fuel Boost Pump Wires in Conduit Installation – In Fuel Tank;" and Critical Design Configuration Control Limitation (CDCCL) Task 28-AWL-21, "Fuel Boost Pump Wires in Conduit Installation – In Fuel Tank;" of Section 9 of Boeing 727-100/200 Airworthiness Limitations (AWLs), D6-8766-AWL, Revision August 2010, provide maintenance instructions for the wiring changes and replace the requirements of CDCCL Task 28-AWL-14 of Section 9 of Boeing 727-100/200 Airworthiness Limitations (AWLs), D6-8766-AWL.

FAA's Determination

We are proposing this AD because we evaluated all the relevant information and determined the unsafe condition described previously is likely to exist or develop in other products of the same type design.

Proposed AD Requirements

This proposed AD would retain certain requirements of AD 2007-11-08, Amendment 39-15065 (72 FR 28594, May 22, 2007). This proposed AD would also require accomplishing the actions specified in the service information described previously, except as provided under "Differences Between the AD and the Service Information."

Differences Between the Proposed AD and the Service Information

Although Boeing Alert Service Bulletin 727-28A0133, dated October 5, 2011, specifies that operators may contact the manufacturer for disposition of certain repair conditions, this proposed AD would require operators to repair those conditions using a method approved by the FAA.

Change to Existing AD

This proposed AD would remove the reporting requirements of paragraph (m) of AD 2007-11-08, Amendment 39-15065 (72 FR 28594, May 22, 2007). The inspection report requirement gathered sufficient information for the manufacturer to develop corrective actions.

This proposed AD would retain certain requirements of AD 2007-11-08, Amendment 39-15065 (72 FR 28594, May 22, 2007). Since AD 2007-11-08 was issued, the AD format has been revised, and certain paragraphs have been rearranged. Also, certain notes have been re-designated as paragraphs. As a result, the corresponding paragraph identifiers have changed in this proposed AD, as listed in the following table:

Revised paragraph identifiers

Requirement in AD 2007-11-08, Amendment 39-15065 (72 FR 28594, May 22, 2007)	Corresponding requirement in this proposed AD
paragraph (f)	paragraph (g)(1)
paragraph (g)	paragraph (g)(2)
paragraph (h)	paragraph (g)(3)
paragraph (i)	paragraph (h)
paragraph (j)	paragraph (i)
paragraph (k)	paragraph (j)
paragraph (l)	paragraph (k)

Costs of Compliance

We estimate that this proposed AD affects 569 airplanes of U.S. registry.

We estimate the following costs to comply with this proposed AD:

Estimated costs

Action	Labor cost	Parts cost	Cost per product	Number of U.S. Airplanes	Cost on U.S. operators
Inspection, test, and corrective actions [retained actions from existing AD 2007-11-08, Amendment 39-15065 (72 FR 28594, May 22, 2007)]	10 work-hours X $85 per hour = $850	$0	$850	260	$221,000
Replacement [proposed action]	185 work-hours X $85 per hour = $15,725	$28,771	$44,496	569	$25,318,224
Revise Maintenance Program [proposed action]	1 work-hour X $85 per hour = $85	$0	$85	569	$48,365
Concurrent FQIS wire replacement [proposed action]	Up to 248 work-hours X $85 per hour = $21,080	Up to $34,865	Up to $55,945	569	Up to $31,832,705
Concurrent low frequency eddy current (LFEC) inspection [proposed action]	2 work-hours X $85 per hour = $170	$0	$170	569	$96,730

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

We have determined that this proposed AD would not have federalism implications under Executive Order 13132. This proposed AD would 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 proposed 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),

(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.

The Proposed Amendment

Accordingly, under the authority delegated to me by the Administrator, the FAA proposes to amend 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 removing airworthiness directive (AD) 2007-11-08, Amendment 39-15065 (72 FR 28594, May 22, 2007), and adding the following new AD:

The Boeing Company: Docket No. FAA-2012-1069; Directorate Identifier 2012-NM-044-AD.

(a) Comments Due Date

The FAA must receive comments on this AD action by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

(b) Affected ADs

This AD supersedes AD 2007-11-08, Amendment 39-15065 (72 FR 28594, May 22, 2007), which superseded AD 99-12-52, Amendment 39-11199 (64 FR 33394, June 23, 1999).

(c) Applicability

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

(2) This AD requires revisions to certain operator maintenance documents to include new actions (e.g., inspections) and/or Critical Design Configuration Control Limitations (CDCCLs). Compliance with these actions and/or CDCCLs is required by 14 CFR 91.403(c). For airplanes that have been previously modified, altered, or repaired

in the areas addressed by this AD, the operator may not be able to accomplish the actions 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 (p) of this AD. The request should include a description of changes to the required actions that will ensure the continued operational safety of the airplane.

(d) Subject

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

(e) Unsafe Condition

This AD was prompted by a report of damage found to the sleeve, jacket, and insulation on an electrical wire during a repetitive inspection. We are issuing this AD to detect and correct chafing of the fuel boost pump electrical wiring and leakage of fuel into the conduit, and to prevent electrical arcing between the wiring and the surrounding conduit, which could result in arc-through of the conduit, and consequent fire or explosion of the fuel tank.

(f) Compliance

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

(g) Retained Compliance Times

This paragraph restates the requirements of paragraphs (f), (g), and (h) of AD 2007-11-08, Amendment 39-15065 (72 FR 28594, May 22, 2007).

(1) For airplanes with 50,000 or more total flight hours as of June 28, 1999 (the effective date of AD 99-12-52, Amendment 39-11199 (64 FR 33394, June 23, 1999)): Within 20 days after June 28, 1999, accomplish the requirements of paragraph (h) of this AD.

(2) For airplanes with less than 50,000 total flight hours, but more than 30,000 total flight hours, as of June 28, 1999 (the effective date of AD 99-12-52, Amendment

39-11199 (64 FR 33394, June 23, 1999)): Within 30 days after June 28, 1999, accomplish the requirements of paragraph (h) of this AD.

(3) For airplanes with 30,000 total flight hours or less as of June 28, 1999 (the effective date of AD 99-12-52, Amendment 39-11199 (64 FR 33394, June 23, 1999)): Within 90 days after June 28, 1999, accomplish the requirements of paragraph (h) of this AD.

(h) Retained Detailed Inspection, Corrective Action, and Installation

This paragraph restates the requirements of paragraph (i) of AD 2007-11-08, Amendment 39-15065 (72 FR 28594, May 22, 2007).

(1) Perform a detailed inspection of the in-tank fuel boost pump wire bundles, and applicable corrective actions; and, except as provided by paragraph (i) of this AD, install sleeving over the wire bundles; in accordance with Boeing Alert Service Bulletin 727-28A0126, dated May 24, 1999; Boeing Service Bulletin 727-28A0126, Revision 1, dated May 18, 2000; or Boeing Alert Service Bulletin 727-28A0132, dated February 22, 2007.

(2) For the purposes of this AD, a detailed inspection is: "An intensive examination of a specific item, installation, or assembly to detect damage, failure, or irregularity. Available lighting is normally supplemented with a direct source of good lighting at an intensity deemed appropriate. Inspection aids such as mirror, magnifying lenses, etc., may be necessary. Surface cleaning and elaborate procedures may be required."

(i) Retained Installation: Possible Deferral

This paragraph restates the optional actions of paragraph (j) of AD 2007-11-08, Amendment 39-15065 (72 FR 28594, May 22, 2007). Installation of sleeving over the wire bundles, as required by paragraph (h) of this AD, may be deferred if, within 18 months or 6,000 flight hours, whichever occurs first, after accomplishment of the

inspection and applicable corrective actions required by paragraph (h) of this AD, the following actions are accomplished: Perform a detailed inspection of the in-tank fuel boost pump wire bundles, and applicable corrective actions; and install sleeving over the wire bundles; in accordance with Boeing Alert Service Bulletin 727-28A0126, dated May 24, 1999; Boeing Service Bulletin 727-28A0126, Revision 1, dated May 18, 2000; or Boeing Alert Service Bulletin 727-28A0132, dated February 22, 2007.

(j) Retained Repetitive Inspections and Corrective Actions

This paragraph restates the requirements of paragraph (k) of AD 2007-11-08, Amendment 39-15065 (72 FR 28594, May 22, 2007). Repeat the detailed inspection and applicable corrective actions required by paragraphs (h) and (i) of this AD, as applicable, at intervals not to exceed 30,000 flight hours, until the initial inspection, applicable corrective actions, and engine fuel suction feed operational test required by paragraph (k) of this AD have been done.

(k) Retained Inspection, Test, and Related Investigative and Corrective Actions

This paragraph restates the requirements of paragraph (l) of AD 2007-11-08, Amendment 39-15065 (72 FR 28594, May 22, 2007). For all airplanes: Within 120 days after June 6, 2007 (the effective date of AD 2007-11-08), or 5,000 flight hours after the last inspection or corrective action done before June 6, 2007, as required by paragraph (h), (i), or (j), as applicable, of this AD, whichever occurs later, do a detailed inspection for damage of the sleeve and electrical wire of the fuel boost pump, and do an engine fuel suction feed operational test; and, before further flight, do related investigative and corrective actions, as applicable; by doing all applicable actions in and in accordance with the Accomplishment Instructions of Boeing Alert Service Bulletin 727-28A0132, dated February 22, 2007. Repeat the detailed inspection and engine fuel suction feed operational test thereafter at intervals not to exceed 15,000 flight cycles. Accomplishment of the initial inspection, applicable corrective actions, and engine fuel suction feed

operational test of this paragraph terminates the requirements of paragraphs (h), (i), and (j) of this AD.

(l) New Installation

Within 60 months after the effective date of this AD: Install new shielded wire bundles in convoluted liners in the wing and center fuel tank conduits and do all applicable related investigative and corrective actions, in accordance with the Accomplishment Instructions of Boeing Alert Service Bulletin 727-28A0133, dated October 5, 2011. Related investigative and corrective actions must be done before further flight. Doing the actions in paragraphs (l) and (m) of this AD terminates the requirements of paragraphs (g), (h), (i), (j), and (k) of this AD.

(m) New Concurrent Requirement

Before or concurrently with accomplishing the requirements of paragraph (l) of this AD, replace the fuel quantity indicating system (FQIS) wire bundles and do a low frequency eddy current inspection for cracking, in accordance with the Accomplishment Instructions of Boeing Service Bulletin 727-28-0131, dated August 18, 2010. If any cracking is found during the inspection, before further flight, repair using a method approved in accordance with the procedures specified in paragraph (p) of this AD.

(n) New Maintenance Program Revision

Within 60 days after the effective date of this AD: Revise the maintenance program to incorporate Airworthiness Limitation Instruction (ALI) Task 28-AWL-20, "Fuel Boost Pump Wires in Conduit Installation – In Fuel Tank;" and CDCCL Task 28-AWL-21, "Fuel Boost Pump Wires in Conduit Installation – In Fuel Tank," of Section 9 of Boeing 727-100/200 Airworthiness Limitations (AWLs), D6-8766-AWL, Revision August 2010. The initial compliance time for the inspections is within 60 months after the effective date of this AD.

(o) No Alternative Actions, Intervals, and/or CDCCLs

After accomplishing the revision required by paragraph (n) of this AD, no alternative actions (e.g., inspections), intervals, and/or CDCCLs may be used unless the actions, intervals, and/or CDCCLs are approved as an alternative method of compliance (AMOC) in accordance with the procedures specified in paragraph (p) of this AD.

(p) Alternative Methods of Compliance (AMOCs)

(1) The Manager, Seattle Aircraft Certification Office (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 emailed 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) AMOCs approved previously in accordance with AD 2007-11-08, Amendment 39-15065 (72 FR 28594, May 22, 2007), are approved as AMOCs for the corresponding provisions of this AD.

(q) Related Information

(1) For more information about this AD, contact Rebel Nichols, Aerospace Engineer, Propulsion Branch, ANM-140S, FAA, Seattle Aircraft Certification Office, 1601 Lind Avenue SW., Renton, WA 98057-3356; phone: 425-917-6509; fax: 425-917-6590; email: rebel.nichols@faa.gov.

(2) For service information identified in this AD, contact Boeing Commercial Airplanes, Attention: Data & Services Management, P. O. Box 3707, MC 2H-65, Seattle,

WA 98124-2207; telephone 206-544-5000, extension 1; fax 206-766-5680; 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, WA. For information on the availability of this material at the FAA, call 425-227-1221.

Issued in Renton, Washington, on September 28, 2012.

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

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