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## **DEPARTMENT OF TRANSPORTATION**

### **Federal Aviation Administration**

#### **14 CFR Part 39**

**[Docket No. FAA-2008-0646; Directorate Identifier 2007-NM-359-AD; Amendment 39-16031; AD 2009-20-08]**

**RIN 2120-AA64**

#### **Airworthiness Directives; Boeing Model 727 Airplanes**

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

**ACTION:** Final rule.

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**SUMMARY:** The FAA is adopting a new airworthiness directive (AD) for certain Boeing Model 727 airplanes. This AD requires performing an operational test of the engine fuel suction feed of the fuel system, and other related testing and corrective actions if necessary. This AD results from a report of in-service occurrences of loss of fuel system suction feed capability, followed by total loss of pressure of the fuel feed system. We are issuing this AD to detect and correct failure of the engine fuel suction feed capability of the fuel system, which could result in multi-engine flameout, inability to restart the engines, and consequent forced landing of the airplane.

**DATES:** This AD becomes effective November 5, 2009.

The Director of the Federal Register approved the incorporation by reference of a certain publication listed in the AD as of November 5, 2009.

**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>.

#### **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 (telephone 800-647-5527) is the 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:** Sue Lucier, Aerospace Engineer, Propulsion Branch, ANM-140S, FAA, Seattle Aircraft Certification Office, 1601 Lind Avenue, SW., Renton, Washington 98057-3356; telephone (425) 917-6438; fax (425) 917-6590.

## **SUPPLEMENTARY INFORMATION:**

### **Discussion**

The FAA issued a supplemental notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 to include an AD that would apply to certain Boeing Model 727 airplanes. That supplemental NPRM was published in the Federal Register on December 10, 2008 (73 FR 75009). That supplemental NPRM proposed to require performing an operational test of the engine fuel suction feed of the fuel system, and other related testing and corrective actions if necessary. That supplemental NPRM also proposed to reduce the compliance time for low-utilization airplanes.

### **Comments**

We provided the public the opportunity to participate in the development of this AD. We have considered the comments received on the supplemental NPRM.

### **Support for the AD**

Boeing concurs with the content of the supplemental NPRM.

### **Request for Credit for Certain Actions in AD 2007-11-08**

FedEx Express states that the operational test of the engine fuel suction feed of the fuel system, provided in Boeing Service Bulletin 727-28-80, dated June 21, 1985, and specified in paragraph (f) of the supplemental NPRM, seems to be equivalent to the operational test required by AD 2007-11-08, amendment 39-15065 (72 FR 28594, May 22, 2007). We referred to Boeing Alert Service Bulletin 727-28-A0132, dated February 22, 2007, as the appropriate source of service information for doing certain requirements (including an operational test) in AD 2007-11-08. FedEx Express believes that the supplemental NPRM accomplishes the same operational test as AD 2007-11-08.

From this comment, we infer that FedEx Express is requesting that we give credit in this AD for operational tests done in accordance with Boeing Alert Service Bulletin 727-28-A0132, dated February 22, 2007, as required by AD 2007-11-08. We agree. The operational test specified in Boeing Alert Service Bulletin 727-28-A0132, dated February 22, 2007; and Boeing Service Bulletin 727-28-80, dated June 21, 1985; are equivalent procedures found in the Boeing 727 airplane maintenance manual (AMM). Therefore, we have added a new paragraph (g) to this AD, and reidentified subsequent paragraphs accordingly, to give credit for operational tests done in accordance with AD 2007-11-08.

### **Request for Clarification of Compliance With Special Federal Aviation Regulation 88 (SFAR 88) Requirements**

FedEx Express asks if Boeing has reviewed and identified any critical design configuration control limitations (CDCCLs) items in Boeing Service Bulletin 727-28-80, dated June 21, 1985.

From this question, we infer that FedEx Express is asking for clarification of whether this AD is compliant with SFAR 88. We reviewed Boeing Service Bulletin 727-28-80, and found that the actions specified do not change the airplane type design. During SFAR 88 evaluations, the original

design in this area was not identified as one requiring a CDCCL to comply with the SFAR 88 requirements. Therefore, there are no SFAR 88 CDCCLs associated with Boeing Service Bulletin 727-28-80, dated June 21, 1985, or this AD. We have made no change to the AD in this regard.

### **Request for Clarification of Functional Test**

FedEx Express states that page 24, Step G., of Boeing Service Bulletin 727-28-80, dated June 21, 1985, specifies performing a functional test per the Boeing 727 AMM. FedEx Express notes that there is no functional test specified in the current Boeing 727 AMM.

From this statement, we infer that FedEx Express is requesting clarification of the functional test that is provided in Boeing Service Bulletin 727-28-80. We have reviewed Subject 28-22-0 of the Boeing 727 AMM, and have determined that the title of the functional test specified in the AMM has changed from "Engine Fuel Feed System Functional Test" to "Engine Fuel Suction Feed–Operational Test." Although the title of this action has changed, we have confirmed that doing the operational test, as specified in Boeing Service Bulletin 727-28-80, fulfills the functional test requirements of this AD. We have not changed the AD in this regard.

### **Request for Clarification of AD Requirements**

FedEx Express asks for clarification of whether the current actions in the supplemental NPRM are applicable to airplanes on which the auxiliary fuel tanks have been removed and/or deactivated.

We agree that clarification in this regard is necessary. The effectivity of Boeing Service Bulletin 727-28-80, dated June 21, 1985, has been divided into airplane groups to reflect different engine fuel feed systems and fuel tank configurations based on the original type certificate configuration. The work instructions of Boeing Service Bulletin 727-28-80, dated June 21, 1985, do not address airplane configurations on which the auxiliary fuel tanks have been removed or deactivated.

Regardless, as provided in sections 39.15 through 39.21 of the Federal Aviation Regulations (14 CFR 39.15 through 39.21), an AD applies to each product identified in the AD, even if an individual product has been changed in the area addressed by the AD. If a change in a product affects an operator's ability to accomplish actions required by the AD, the operator must request approval of an alternative method of compliance (AMOC). According to the provisions of paragraph (i) of this AD, we may approve a request to allow an AMOC to the requirements of this AD for airplanes that have had the auxiliary fuel tanks removed or deactivated, if the request includes data that show that it would provide an acceptable level of safety. We have not changed the AD in this regard.

### **Request to Change Compliance Time**

FedEx Express states that the repetitive detailed inspections and engine fuel suction feed operational tests in AD 2007-11-08 are required at intervals not to exceed 15,000 flight cycles, whereas the repetitive operational tests in the supplemental NPRM are required at intervals not to exceed 7,000 flight hours or 18 months, whichever occurs first. FedEx Express adds that the operational test in the supplemental NPRM would be repeated twice as often within those time periods.

From these statements, we infer that FedEx Express is asking that the repetitive intervals in the supplemental NPRM be changed to match the repetitive intervals in AD 2007-11-08. We do not agree. The requirements in AD 2007-11-08 mandate inspection for wear or chafing of the aluminum conduit of the fuel boost pump. That AD was issued after an outboard fuel tank exploded due to arcing of the wire against the metal conduit. The intervals for the suction feed check in that AD coincide with re-inspection of the wire bundles. In addition, the latent failure condition addressed in the supplemental NPRM was re-analyzed based on allowable failure rates to preclude unsafe system performance, while taking into account the timing of heavy maintenance checks. Although the repetitive interval in the supplemental NPRM does equate to performing the test twice as often as the

interval in AD 2007-11-08, analysis indicates that doing the test at the proposed intervals is necessary to address the unsafe condition identified in this AD in a timely manner and to provide an acceptable level of safety. We have not changed the AD in this regard.

## **Conclusion**

We have carefully reviewed the available data, including the comments received, and determined that air safety and the public interest require adopting the AD with the changes described previously. We have determined that these changes will neither increase the economic burden on any operator nor increase the scope of the AD.

## **Costs of Compliance**

We estimate that this AD affects 709 airplanes of U.S. registry. We also estimate that it takes 1 work-hour per product, per test, to comply with this AD. The average labor rate is \$80 per work-hour. Based on these figures, we estimate the cost of this AD to the U.S. operators to be \$56,720, or \$80 per product, per test.

## **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 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); 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):



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**2009-20-08 Boeing:** Amendment 39-16031. Docket No. FAA-2008-0646; Directorate Identifier 2007-NM-359-AD.

**Effective Date**

- (a) This AD becomes effective November 5, 2009.

**Affected ADs**

- (b) None.

**Applicability**

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

**Unsafe Condition**

- (d) This AD results from a report of in-service occurrences of loss of fuel system suction feed capability, followed by total loss of pressure of the fuel feed system. We are issuing this AD to detect and correct failure of the engine fuel suction feed of the fuel system, which could result in multi-engine flameout, inability to restart the engines, and consequent forced landing of the airplane.

**Compliance**

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

**Operational Test/Other Specified Actions**

- (f) Within 7,000 flight hours or 18 months after the effective date of this AD, whichever occurs first: Perform an operational test of the engine fuel suction feed of the fuel system, and perform all other related testing and corrective actions, as applicable, before further flight, in accordance with the Accomplishment Instructions of Boeing Service Bulletin 727-28-80, dated June 21, 1985. Repeat the operational test thereafter at intervals not to exceed 7,000 flight hours or 36 months, whichever occurs first.

**Credit for Actions Done in Accordance With AD 2007-11-08, Amendment 39-15065**

- (g) Operational tests of the engine fuel suction feed of the fuel system and follow-on corrective actions done in accordance with the requirements of AD 2007-11-08 are acceptable for compliance with the corresponding requirements of this AD if done within the compliance time specified in this AD.

## **Operator's Equivalent Procedure**

(h) If any discrepancy is found, and Boeing Service Bulletin 727-28-80, dated June 21, 1985, specifies that certain actions (i.e., a vacuum test of the fuel feed system) may be accomplished using an operator's "equivalent procedure" (with substitute test equipment): The actions must be accomplished in accordance with Figure 4 of Boeing Service Bulletin 727-28-80, dated June 21, 1985.

## **Alternative Methods of Compliance (AMOCs)**

(i)(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. Send information to ATTN: Sue Lucier, Aerospace Engineer, Propulsion Branch, ANM-140S, FAA, Seattle ACO, 1601 Lind Avenue, SW., Renton, Washington 98057-3356; telephone (425) 917-6438; fax (425) 917-6590. Or, e-mail information to 9-ANM-Seattle-ACO-AMOC-Requests@faa.gov.

(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 principal maintenance inspector (PMI) or principal avionics inspector (PAI), as appropriate, or lacking a principal inspector, your local Flight Standards District Office. The AMOC approval letter must specifically reference this AD.

## **Material Incorporated by Reference**

(j) You must use Boeing Service Bulletin 727-28-80, dated June 21, 1985, to do the actions required by this AD, unless the AD specifies otherwise.

(1) The Director of the Federal Register approved the incorporation by reference of this 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 or 425-227-1152.

(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 NARA, call 202-741-6030, or go to: [http://www.archives.gov/federal\\_register/code\\_of\\_federal\\_regulations/ibr\\_locations.html](http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html).

Issued in Renton, Washington, on September 18, 2009.

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