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## **DEPARTMENT OF TRANSPORTATION**

### **Federal Aviation Administration**

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

**[Docket No. FAA-2008-0617; Directorate Identifier 2007-NM-354-AD; Amendment 39-17533; AD 2013-15-17]**

**RIN 2120-AA64**

#### **Airworthiness Directives; The Boeing Company Airplanes**

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

**ACTION:** Final rule.

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**SUMMARY:** We are adopting a new airworthiness directive (AD) for certain The Boeing Company Model 737-600, -700, -700C, -800, -900, and -900ER series airplanes. This AD was prompted by a report of an in-service occurrence of total loss of boost pump pressure of the fuel feed system, followed by loss of fuel system suction feed capability on one engine, and in-flight shutdown of the engine. This AD requires repetitive operational tests of the engine fuel suction feed of the fuel system, and other related testing and corrective action if necessary. We are issuing this AD to detect and correct loss of the engine fuel suction feed capability of the fuel system, which in the event of total loss of the fuel boost pumps could result in dual engine flameout, inability to restart the engines, and consequent forced landing of the airplane.

**DATES:** This AD is effective October 1, 2013.

The Director of the Federal Register approved the incorporation by reference of a certain publication listed in the AD as of October 1, 2013.

**ADDRESSES:** 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, 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:** Sue Lucier, Aerospace Engineer, Propulsion Branch, ANM-140S, Seattle Aircraft Certification Office, FAA, 1601 Lind Avenue SW., Renton, Washington 98057-3356; phone: 425-917-6438; fax: 425-917-6590; email: [suzanne.lucier@faa.gov](mailto:suzanne.lucier@faa.gov).

## **SUPPLEMENTARY INFORMATION:**

### **Discussion**

We issued a supplemental notice of proposed rulemaking (SNPRM) to amend 14 CFR part 39 to include an airworthiness directive (AD) that would apply to the specified products. The SNPRM published in the Federal Register on June 25, 2012 (77 FR 37831). We preceded the SNPRM with a notice of proposed rulemaking (NPRM), which published in the Federal Register on June 6, 2008 (73 FR 32255). The NPRM proposed to require repetitive operational tests of the engine fuel suction feed of the fuel system, and other related testing if necessary. The SNPRM proposed to require repetitive operational tests of the engine fuel suction feed of the fuel system, and other related testing and corrective action if necessary.

### **Comments**

We gave the public the opportunity to participate in developing this AD. The following presents the comments received on the proposal (77 FR 37831, June 25, 2012) and the FAA's response to each comment.

### **Requests To Change Certain Methods of Compliance**

Boeing asked that we change the next to last sentence in paragraph (g) of the SNPRM (77 FR 37831, June 25, 2012), which specifies “. . . using a method approved in accordance with the procedures specified in paragraph (h) of this AD” to read “If the test is not considered successful, as specified in AWL No. 28-AWL-101, before further flight, perform all related testing and corrective actions, and repeat the operational test specified in AWL No. 28-AWL-101.” Boeing noted that paragraph (h) of the SNPRM (paragraph (i) of this final rule) does not provide testing and corrective actions for a failed test, and FAA approval of action taken to address a failed test could result in an excessive burden to operators and could cause unnecessary grounding of airplanes while coordinating planned actions with the FAA.

Delta Airlines (DAL) requested that we include an existing fault isolation manual (FIM) procedure as an approved method for resolving unsuccessful testing.

American Airlines (AAL) stated that paragraph (g) of the SNPRM (77 FR 37831, June 25, 2012) specifies that the corrective action for findings from the operational test is to perform all related testing and corrective actions in accordance with the procedures specified in paragraph (h) of the SNPRM (paragraph (i) of this final rule). AAL added that paragraph (h) of the SNPRM provides information on obtaining AMOCs, and asked for clarification on that approval.

We agree to revise the requirements and methods of compliance specified in paragraph (g) of this AD. In paragraph (g)(1)(i) of this final rule, we have retained the requirement for performing all related testing and corrective actions using a method approved in accordance with the procedures specified in paragraph (i) of this AD. As requested by Boeing, we have added new paragraph (g)(1)(ii) to this final rule to perform all related testing and corrective actions, and to repeat the operational test specified in AWL No. 28-AWL-101. The actions specified in paragraph (g)(1)(ii) do

not require submitting requests to the FAA for approval of a method of compliance. Therefore, including an existing FIM procedure in the AD as an approved method becomes unnecessary for resolving unsuccessful testing since operators may use any method of compliance to resolve unsuccessful testing, provided the operational test is repeated.

In addition, we have reviewed Boeing 737-600/700/700C/800/900/900ER Maintenance Planning Data (MPD) Document, Section 9, Airworthiness Limitations (AWLs) and Certification Maintenance Requirements (CMRs), D626A001-CMR, Revision August 2012, which includes AWL No. 28-AWL-101. As an option for the repetitive operational tests (specified in paragraph (g)(1) of this AD), we have specified incorporating AWL No. 28-AWL-101 into the maintenance program (paragraph (g)(2) of this AD). Compliance with these actions is required by section 91.403(c) of the Federal Aviation Regulations (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 AMOC according to the procedures specified in paragraph (i) 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.

### **Requests To Allow Task Card Instructions as an AMOC; Clarify Airplane Maintenance Manual (AMM) Task**

DAL suggested that the SNPRM (77 FR 37831, June 25, 2012) include compliance with the engine fuel suction feed test using Boeing 737-600/700/800 Task Card 28-050-00-01 as an AMOC. DAL stated that this task card complies with the requirements of AWL No. 28-AWL-101, which is specified in paragraph (g) of the SNPRM. AAL asked for clarification that Boeing AMM Task 28-22-00-710-802, Engine Fuel Suction Feed—Operational Test, can be used as an AMOC.

Although we agree that the task card contains adequate instructions to perform the test, we do not agree with identifying the task card information within the instructions for the mandated action. For clarification, general maintenance instructions are identified within the AWL for guidance, which means that if the operator already has an accepted alternative procedure, that procedure may be used. The maintenance program with the task cards incorporated is an acceptable alternative procedure. We have made no change to the AD in this regard.

### **Request To Increase Repetitive Interval for Operational Tests**

AAL asked that we increase the repetitive operational test interval in the SNPRM (77 FR 37831, June 25, 2012) from 7,500 to 10,000 flight hours. AAL provided a risk-based assessment for extending the intervals based on its experience. AAL stated within its assessment that the loss of suction feed capability would remain remote with the extended testing interval.

We do not agree with the request to increase the repetitive operational test interval. The service data of transport category airplanes indicates that multi-engine flameouts generally result from a common cause such as fuel mismanagement, crew action that inadvertently shuts off the fuel supply to the engines, exposure to common environmental conditions, or engine deterioration occurring on all engines of the same type—not solely the failure of multiple fuel boost pumps. This risk assessment is based on the results of maintenance findings of one operator's fleet, and does not support increasing the repetitive interval. The current interval is based on an overall fleet assessment by the original equipment manufacturer. However, affected operators may request approval of an AMOC for an increase of the repetitive operational test interval under the provisions of paragraph (i) of this AD by submitting data substantiating that the change would provide an acceptable level of safety. We have made no change to the AD in this regard.

## Conclusion

We reviewed the relevant data, considered the comments received, and determined that air safety and the public interest require adopting this AD with the changes described previously. We also determined that these changes will not increase the economic burden on any operator or increase the scope of this AD.

## Costs of Compliance

We estimate that this AD affects 1,080 airplanes of U.S. registry.  
We estimate the following costs to comply with this AD:

### Estimated Costs

Action	Labor cost	Cost per product	Cost on U.S. operators
Operational Test/Revision	1 work-hour × \$85 per hour = \$85	\$85	\$91,800

We have received no definitive data that would enable us to provide a cost estimate for the on-condition actions or the optional terminating 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):



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**2013-15-17 The Boeing Company:** Amendment 39-17533; Docket No. FAA-2008-0617; Directorate Identifier 2007-NM-354-AD.

**(a) Effective Date**

This AD is effective October 1, 2013.

**(b) Affected ADs**

None.

**(c) Applicability**

This AD applies to The Boeing Company Model 737-600, -700, -700C, -800, -900, and -900ER series airplanes, certificated in any category, with a date of issuance of the original airworthiness certificate or the date of issuance of the original export certificate of airworthiness before March 22, 2011.

**(d) Subject**

Joint Aircraft System Component (JASC)/Air Transport Association (ATA) of America Code 2800, Aircraft Fuel System.

**(e) Unsafe Condition**

This AD was prompted by a report of an in-service occurrence of total loss of boost pump pressure of the fuel feed system, followed by loss of fuel system suction feed capability on one engine, and in-flight shutdown of the engine. We are issuing this AD to detect and correct loss of the engine fuel suction feed capability of the fuel system, which in the event of total loss of the fuel boost pumps could result in dual engine flameout, inability to restart the engines, and consequent forced landing of the airplane.

**(f) Compliance**

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

**(g) Repetitive Operational Tests or Maintenance Program Revision**

Do the requirements of paragraph (g)(1) or (g)(2) of this AD.

(1) Within 7,500 flight hours or 36 months after the effective date of this AD, whichever occurs first: Do the initial operational test identified in Airworthiness Limitation (AWL) No. 28-AWL-101, Engine Fuel Suction Feed Operational Test, of Section E., AWL–Fuel Systems of Section 9, Airworthiness Limitations (AWLs) and Certification Maintenance Requirements (CMRs), D626A001-CMR, Revision August 2011 or August 2012, of the Boeing 737-600/700/700C/800/900/900ER Maintenance Planning Data (MPD) Document. Repeat the test

thereafter at intervals not to exceed 7,500 flight hours or 36 months, whichever is earlier. Thereafter, except as provided in paragraph (i) of this AD, no alternative procedure or repetitive test intervals will be allowed. If any test is not considered successful, as specified in AWL No. 28-AWL-101, before further flight, do either paragraph (g)(1)(i) or (g)(1)(ii) of this AD.

(i) Perform all related testing and corrective actions, using a method approved in accordance with the procedures specified in paragraph (i) of this AD.

(ii) Perform all related testing and corrective actions; and repeat the operational test specified in paragraph (g)(1) of this AD.

(2) Within 90 days after the effective date of this AD: Revise the maintenance program to incorporate the limitations specified in AWL No. 28-AWL-101, Engine Fuel Suction Feed Operational Test, of Section E., AWL–Fuel Systems of Section 9, Airworthiness Limitations (AWLs) and Certification Maintenance Requirements (CMRs), D626A001-CMR, Revision August 2012, of the Boeing 737-600/700/700C/800/900/900ER MPD Document. The initial compliance time for the task is within 7,500 flight hours or 36 months after the effective date of this AD, whichever occurs first.

#### **(h) No Alternative Actions or Intervals**

After accomplishing the revision provided by paragraph (g)(2) of this AD, no alternative actions or repetitive test intervals may be used unless the actions or intervals are approved as an alternative method of compliance (AMOC) in accordance with the procedures specified in paragraph (i) of this AD.

#### **(i) 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.

#### **(j) Related Information**

For more information about this AD, contact Sue Lucier, Aerospace Engineer, Propulsion Branch, ANM-140S, Seattle Aircraft Certification Office, FAA, 1601 Lind Avenue SW., Renton, Washington 98057-3356; phone: 425-917-6438; fax: 425-917-6590; email: [suzanne.lucier@faa.gov](mailto:suzanne.lucier@faa.gov).

#### **(k) Material Incorporated by Reference**

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

(2) You must use this service information as applicable to do the actions required by this AD, unless the AD specifies otherwise.

(i) Section 9, Airworthiness Limitations (AWLs) and Certification Maintenance Requirements (CMRs), D626A001-CMR, Revision August 2011, of the Boeing 737-600/700/700C/800/900/900ER Maintenance Planning Data (MPD) Document.

(ii) Section 9, Airworthiness Limitations (AWLs) and Certification Maintenance

Requirements (CMRs), D626A001-CMR, Revision August 2012, of the Boeing 737-600/700/700C/800/900/900ER MPD Document.

(3) 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>.

(4) 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.

(5) You may view this 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/cfr/ibr-locations.html>.

Issued in Renton, Washington, on July 21, 2013.

Stephen P. Boyd,  
Acting Manager, Transport Airplane Directorate,  
Aircraft Certification Service.