



## **DEPARTMENT OF TRANSPORTATION**

### **Federal Aviation Administration**

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

**[Docket No. FAA-2014-0755; Directorate Identifier 2014-NM-080-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 adopt a new airworthiness directive (AD) for all The Boeing Company Model 737-600, -700, -700C, -800, -900, and -900ER series airplanes, Model 757 airplanes, Model 767 airplanes, and Model 777 airplanes. This proposed AD results from fuel system reviews conducted by the manufacturer. This proposed AD would require an inspection to determine if certain spar-mounted motor-operated valve actuators for the spar-mounted fuel valves are installed, and replacement of any affected actuators. We are proposing this AD to prevent electrical energy from lightning, hot shorts, or fault current from entering the fuel tank through the actuator shaft, which could result in fuel tank explosions and consequent loss of the airplane.

**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.

### **Examining the AD Docket**

You may examine the AD docket on the Internet <http://www.regulations.gov> by searching for and locating Docket No. FAA-2014-0755; 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](mailto:rebel.nichols@faa.gov).

### **SUPPLEMENTARY INFORMATION:**

#### **Comments Invited**

We invite you to send any written relevant data, views, or arguments about this proposal. Send your comments to an address listed under the **ADDRESSES** section. Include “Docket No. FAA-2014-0755; Directorate Identifier 2014-NM-080-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**

The FAA has examined the underlying safety issues involved in fuel tank explosions on several large transport airplanes, including the adequacy of existing regulations, the service history of airplanes subject to those regulations, and existing maintenance practices for fuel tank systems. As a result of those findings, we issued a regulation titled “Transport Airplane Fuel Tank System Design Review, Flammability Reduction and Maintenance and Inspection Requirements” (66 FR 23086, May 7, 2001). In addition to new airworthiness standards for transport airplanes and new maintenance requirements, this rule included Special Federal Aviation Regulation No. 88 (“SFAR 88,” Amendment 21-78, and subsequent Amendments 21-82 and 21-83).

Among other actions, SFAR 88 (66 FR 23086, May 7, 2001) requires certain type design (i.e., type certificate (TC) and supplemental type certificate (STC)) holders to substantiate that their fuel tank systems can prevent ignition sources in the fuel tanks. This requirement applies to type design holders for large turbine-powered transport airplanes and for subsequent modifications to those airplanes. It requires them to perform design reviews and to develop design changes and maintenance procedures if their designs do not meet the new fuel tank safety standards. As explained in the preamble to the rule, we intended to adopt airworthiness directives to mandate any changes found necessary to address unsafe conditions identified as a result of these reviews.

In evaluating these design reviews, we have established four criteria intended to define the unsafe conditions associated with fuel tank systems that require corrective

actions. The percentage of operating time during which fuel tanks are exposed to flammable conditions is one of these criteria. The other three criteria address the failure types under evaluation: single failures, single failures in combination with a latent condition(s), and in-service failure experience. For all four criteria, the evaluations included consideration of previous actions taken that may mitigate the need for further action.

We have determined that the actions identified in this AD are necessary to reduce 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.

We are proposing this AD to prevent electrical energy from lightning, hot shorts, or fault current from entering the fuel tank through the actuator shaft, which could result in fuel tank explosions and consequent loss of the airplane.

#### **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 these same type designs.

#### **Proposed AD Requirements**

This proposed AD would require an inspection to determine whether any spar-mounted motor-operated valve (MOV) actuators for the spar-mounted fuel valves having part number (P/N) MA20A1001-1 (S343T003-39) are installed, and replacement of any affected actuator with a serviceable, FAA-approved MOV actuator other than one having P/N MA20A1001-1 (S343T003-39).

#### **Costs of Compliance**

We estimate that this proposed AD affects 2,140 airplanes of U.S. registry.

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

**Estimated costs**

<b>Action</b>	<b>Labor cost</b>	<b>Parts cost</b>	<b>Cost per product</b>	<b>Cost on U.S. operators</b>
Inspection to determine part number	1 work-hour X \$85 per hour = \$85	\$0	\$85	\$181,900

We estimate the following costs to do any necessary replacements that would be required based on the results of the proposed inspection. We have no way of determining the number of aircraft that might need these replacements:

**On-condition costs**

<b>Action</b>	<b>Labor cost</b>	<b>Parts cost</b>	<b>Cost per product</b>
Replace actuator	1 work-hour X \$85 per hour = \$85 per actuator	\$5,000 per actuator	\$5,085 per actuator

**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 proposed 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 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 this 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 adding the following new airworthiness directive (AD):

**The Boeing Company:** Docket No. FAA-2014-0755; Directorate Identifier 2014-NM-080-AD.

**(a) Comments Due Date**

We must receive comments by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

**(b) Affected ADs**

None.

**(c) Applicability**

This AD applies to all The Boeing Company airplanes identified in paragraphs (c)(1) through (c)(4) of this AD, certificated in any category.

(1) Model 737-600, -700, -700C, -800, -900, and -900ER series airplanes.

(2) Model 757-200, -200PF, -200CB, and -300 series airplanes.

(3) Model 767-200, -300, -300F, and -400ER series airplanes.

(4) Model 777-200, -200LR, -300, -300ER, and-777F series airplanes.

**(d) Subject**

Air Transport Association (ATA) of America Code 28, Fuel Selector/Shut-off Valve.

**(e) Unsafe Condition**

This AD results from fuel system reviews conducted by the manufacturer. We are issuing this AD to prevent electrical energy from lightning, hot shorts, or fault current from entering the fuel tank through the actuator shaft, which could result in fuel tank explosions and consequent loss of the airplane.

**(f) Compliance**

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

**(g) Inspection to Determine Part Number**

Within 60 months after the effective date of this AD: Do an inspection to determine whether any motor-operated shutoff valve (MOV) actuators having part number (P/N) MA20A1001-1 (S343T003-39) for the fuel tanks or fuel feed system are

installed on the airplane. A review of airplane maintenance records is acceptable in lieu of this inspection if the part number of the actuator can be conclusively determined from that review.

**(h) Replacement**

If, during the inspection required by paragraph (g) of this AD, any MOV actuator having (P/N) MA20A1001-1 (S343T003-39) for the fuel tanks is installed: Within 60 months after the effective date of this AD, replace the affected MOV actuator with a serviceable, FAA-approved MOV actuator other than one having P/N MA20A1001-1 (S343T003-39).

**(i) Parts Installation Prohibition**

As of the effective date of this AD, no person may install an MOV actuator having part number MA20A1001-1 (S343T003-39) on any airplane.

**(j) 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 paragraph (k) 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) 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 Organization Designation Authorization (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.

**(k) Related Information**

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.

Issued in Renton, Washington, on October 30, 2014.

**Jeffrey E. Duven,**  
*Manager,*  
*Transport Airplane Directorate,*  
*Aircraft Certification Service.*

**BILLING CODE 4910-13-P**

**[FR Doc. 2014-26534 Filed 11/06/2014 at 8:45 am; Publication Date: 11/07/2014]**