



DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2020-0331; Product Identifier 2020-NM-019-AD; Amendment 39-21397; AD 2021-02-14]

RIN 2120-AA64

Airworthiness Directives; The Boeing Company Airplanes

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule.

SUMMARY: The FAA is 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 that the necessary sealant was not applied to the side of body (SOB) slot as a result of a production drawing that provided unclear SOB slot sealant application instructions. This AD requires a general visual inspection for insufficient sealant in the SOB slot, and related investigative and corrective actions. The FAA is issuing this AD to address the unsafe condition on these products.

DATES: This AD is effective [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

The Director of the Federal Register approved the incorporation by reference of a certain publication listed in this AD as of [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

ADDRESSES: For service information identified in this final rule, contact Boeing Commercial Airplanes, Attention: Contractual & Data Services (C&DS), 2600 Westminister Blvd., MC 110-SK57, Seal Beach, CA 90740-5600; telephone 562-797-1717; Internet <https://www.myboeingfleet.com>. You may view this service

information at the FAA, Airworthiness Products Section, Operational Safety Branch, 2200 South 216th St., Des Moines, WA. For information on the availability of this material at the FAA, call 206-231-3195. It is also available on the Internet at <https://www.regulations.gov> by searching for and locating Docket No. FAA-2020-0331.

Examining the AD Docket

You may examine the AD docket on the Internet at <https://www.regulations.gov> by searching for and locating Docket No. FAA-2020-0331; or in person at Docket Operations between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this final rule, any comments received, and other information. The address for Docket Operations is 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: James Laubaugh, Aerospace Engineer, Propulsion Section, FAA, Seattle ACO Branch, 2200 South 216th St., Des Moines, WA 98198; phone and fax: 206-231-3622; email: james.laubaugh@faa.gov.

SUPPLEMENTARY INFORMATION:

Discussion

The FAA issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 by adding an AD that would apply to certain The Boeing Company Model 737-600, -700, -700C, -800, -900, and -900ER series airplanes. The NPRM published in the Federal Register on May 6, 2020 (85 FR 26893). The NPRM was prompted by a report indicating that the necessary sealant was not applied to the SOB slot as a result of a production drawing providing unclear SOB slot sealant application instructions on certain The Boeing Company Model 737-600, -700, -700C, -800, -900, and -900ER series airplanes. The NPRM proposed to require a general visual inspection for insufficient sealant in the SOB slot, and related investigative and corrective actions.

The FAA is issuing this AD to address fuel leaking into the air distribution mix bay (ADMB), which if not addressed, could possibly lead to an ignition of flammable fluid vapors, fire, or explosion, or fuel vapor inhalation by passengers and crew.

Comments

The FAA gave the public the opportunity to participate in developing this final rule. The following presents the comments received on the NPRM and the FAA's response to each comment.

Supportive Comment

United Airlines stated it had no technical objection to the NPRM.

Effects of Winglets on Accomplishment of the Proposed Actions

Aviation Partners Boeing stated that the installation of blended or split scimitar winglets per Supplemental Type Certificate (STC) ST00830SE does not affect compliance with the proposed actions.

The FAA agrees with the commenter that STC ST00830SE does not affect the accomplishment of the manufacturer's service instructions. Therefore, the installation of STC ST00830SE does not affect the ability to accomplish the actions required by this AD. The FAA has not changed this AD in this regard.

Request to Reference Later Revision of Multi Operator Message (MOM)

Boeing requested that the FAA revise the proposed AD to reference a later revision of the MOM, specifically, Boeing Multi Operator Message MOM-MOM-20-0049-01B(R2), with an anticipated publication date of July 31, 2020. Boeing stated that the revision has improved illustration and work instructions, clarifies how to distinguish between certain application flaws and more severe flaws and deterioration, and provides relief from certain corrective actions for certain secondary fuel barrier coating conditions.

The FAA agrees to reference a later revision of the service information. However, Boeing has released additional later revisions that provide additional clarity. Boeing

Multi Operator Message MOM-MOM-20-0049-01B(R4), dated September 28, 2020, provides clarification on the definitions of sufficient sealant in the SOB slot, fillet seal in the SOB slot, and secondary fuel barrier. It also provides clarifications to the inspection area, and revisions were made to improve the identification of applicable figures. The changes in the revision provide relief on repairs of serviceable secondary fuel barrier coating. This later revision 4 contains no substantive change from MOM-MOM-20-0049-01B(R1), dated January 29, 2020. The FAA has revised paragraphs (g) and (i) of this AD to reference Boeing Multi Operator Message MOM-MOM-20-0049-01B(R4), dated September 28, 2020. The FAA has also added paragraph (j) to this AD to provide credit for accomplishing certain earlier revisions of this service information before the effective date of this AD.

Request to Define Type of Inspection Required

Delta Air Lines (Delta) requested clarification on what type of inspection is needed to accomplish the inspection requirements. Delta noted that in the General Notes section of the attachment to Boeing Multi Operator Message MOM-MOM-20-0049-01B(R2), dated August 4, 2020, the MOM provides a definition of a detailed inspection. However, Delta noted that because “detailed inspection” is not used in other parts of the service information, it seems the definition of a detailed visual inspection should have been provided instead. Delta stated that this inconsistency could lead to an inability to comply with the instructions in the MOM.

The FAA agrees to clarify. As stated previously, the FAA has revised this AD to reference Boeing Multi Operator Message MOM-MOM-20-0049-01B(R4), dated September 28, 2020, and in this later revision, both the steps and General Notes refer to “detailed inspection” as well as “general visual inspection.” The FAA has removed paragraph (g) of the proposed AD as this definition is no longer needed. The FAA has redesignated subsequent paragraphs accordingly.

Request to Clarify Figures

Alaska Airlines (Alaska) and Delta requested that the figures within Boeing Multi Operator Message MOM-MOM-20-0049-01B(R1), dated January 29, 2020, be revised to add clarity. Alaska and Delta stated that the figures lack clear reference links from the text to the figures. Delta also stated that not addressing the unclear figures could lead to incorrect accomplishment of the SOB slot inspection.

The FAA agrees that the figures are unclear and the internal reference links need to be revised. As stated previously, this AD has been revised to reference Boeing Multi Operator Message MOM-MOM-20-0049-01B(R4), dated September 28, 2020, which contains improved figure references. No further changes to this AD have been made.

Request to Clarify Inspection Area and Acceptance Criteria for Sealant

Alaska, Delta, and Southwest Airlines requested clarification on what is considered to be acceptable or insufficient sealant in the SOB slot. Alaska and Delta requested that the inspection area and acceptance criteria for sealant in the SOB slot and secondary fuel barrier be clarified. Southwest Airlines proposed a compliance table be added to the proposed AD to define acceptable sealant conditions, and Alaska supported Southwest Airlines' idea. Delta also suggested that the unclear criteria for sealant could lead to incorrect accomplishment of the SOB slot inspection.

The FAA agrees that the criteria for acceptable sealant are unclear. As described above, the FAA has revised this AD to refer to Boeing Multi Operator Message MOM-MOM-20-0049-01B(R4), dated September 28, 2020, which clarifies the area of inspection and the acceptable conditions of the sealant.

Request to Clarify an Inspection Area

Delta requested clarification on the inspection area addressed in certain portions (Part 2, Step 3 and View 2D21's flagnote 63) of Boeing Multi Operator Message MOM-MOM-20-0049-01B(R1), dated January 29, 2020. Delta stated that those parts could be

interpreted to specify that the entire front spar of the center tank must be inspected for the fillet seal and SOB slot, or only the SOB slot area.

The FAA agrees that the specifications of the area to be inspected should be clearer. As discussed above, the FAA has revised this AD to reference Boeing Multi Operator Message MOM-MOM-20-0049-01B(R4), dated September 28, 2020, which clarifies that only the SOB slot area must be inspected as shown in Figure 1 of Boeing Multi Operator Message MOM-MOM-20-0049-01B(R4), dated September 28, 2020. No additional changes to this AD have been made.

Request to Add Service-based Compliance Time

Southwest Airlines requested that a service-based compliance time be added to the calendar-based compliance time proposed in the NPRM. Southwest Airlines proposed that the compliance time be re-written to require compliance within “9 months or 2,000 flight cycles from AD effective date, whichever occurs later.” Southwest Airlines pointed out that due to the reduced flight schedules in response to the COVID-19 pandemic, many airplanes are in long-term storage. Southwest Airlines added that some of these long-term storage facilities might not be capable of providing heavy maintenance, and airplanes would need to be ferried to a facility where these actions may be accomplished.

The FAA disagrees with adding the 2,000 flight cycles to the compliance time. In developing an appropriate compliance time, the FAA considered the safety implications, parts availability, and normal maintenance schedules. In consideration of all of these factors, the FAA determined that the compliance time, as proposed, represents an appropriate interval for the general visual inspection for insufficient sealant in the SOB slot within the fleet, while still maintaining an adequate level of safety. However, under the provisions of paragraph (k) of this AD, the FAA will consider requests for approval of an extension of the compliance time if sufficient data are submitted to substantiate that

the new compliance time would provide an acceptable level of safety. The FAA has not changed this AD in this regard.

Request to Extend Compliance Time

Alaska requested that an additional compliance time deferral of 24 months be allowed under the following conditions: no fuel contamination in the ADMB; no external leak or signs of a previous external leak around the SOB slot; insufficient sealing conditions temporarily corrected with PR-1826 B-1/4 sealant or SF5387 secondary fuel barrier materials, in accordance with certain service information instructions; and repetitive inspections for fuel contamination of the ADMB done at intervals not to exceed 12 months until the repair specified in paragraph (g) of this AD is completed. Alaska stated that the extended compliance time would relieve some of the operational impact and would aid in planning for the time-intensive repair during a heavy maintenance visit.

The FAA does not agree to provide a 24-month compliance time for the repair. The technical specifications provided for the proposed alternative sealant for temporary repair do not provide the FAA with enough information to determine that the temporary repair would comply with the certification basis of the airplane and provide an acceptable level of safety when incorporated into the existing fuel system design. There is also insufficient information on how the procedures for use in the temporary repair would differ from the permanent repair. However, under the provisions of paragraph (k) of this AD, the FAA will consider requests for approval of an extension of the repair compliance time if sufficient data are submitted to substantiate that the conditions and temporary repair would provide an acceptable level of safety. The FAA has not changed this AD in this regard.

Request to Allow Removing Certain Other Parts to Gain Inspection Access

American Airlines and Delta requested a revision to the proposed AD to allow removing the air return grilles or sidewall panels to expose a hole in a beam above the

SOB slot area so the inspection of the sealant can be done through the opening. Both commenters stated that the access procedure specified in Boeing Multi Operator Message MOM-MOM-20-0049-01B(R1), dated January 29, 2020, removes seats and cabin floor panels to gain access to the inspection area. American Airlines also stated that allowing the alternative access procedure for the inspection would reduce the amount of time necessary to accomplish an inspection of the SOB slot, and that accomplishing any required corrective action would then require the removal of seats and cabin floor panels to gain access to the SOB slot area.

The FAA agrees that the inspection could be accomplished by removing the air return grilles or sidewall panels. As discussed previously, the FAA has revised this AD to reference Boeing Multi Operator Message MOM-MOM-20-0049-01B(R4), dated September 28, 2020, which does contain this additional method of compliance for accessing the inspection area. The FAA has not made any additional revisions to this AD in this regard.

Request to Allow Use of Alternative Sealant

Alaska stated that the sealant AC-360 B1/2, which is specified as the sealant to use to fill a void, is discontinued. The FAA infers that Alaska wants the AD to be revised to remove reference to the discontinued sealant.

The FAA agrees that the sealant AC-360 B1/2 has been discontinued. As discussed above, this AD has been revised to reference Boeing Multi Operator Message MOM-MOM-20-0049-01B(R4), dated September 28, 2020, which removes the reference to the sealant AC-360 B1/2, but retains the reference to sealant BMS 5-142, which is the appropriate sealant to use. The FAA has not made any further changes to this AD in this regard.

Request to Use Faster-Curing Sealants

Alaska requested that the FAA allow alternative sealants that cure faster than the ones specified in the service information. Alaska suggested allowing the use of sealant PR-1826 B1/4 in place of BMS 5-142, and SF5387 in place of BMS 5-81. Alaska also provided technical data sheets for the proposed sealants. Alaska noted that use of the slower-curing sealants could result in an airplane being out of service for up to 34 hours, and that time could be reduced by use of faster-curing sealants that provide an equivalent level of safety.

The FAA agrees that the alternative sealants would provide a faster cure time. However, the FAA does not have enough data to determine if the alternative sealants comply with the certification basis of the airplane and if they will provide an acceptable level of safety when incorporated into the existing fuel system design. The FAA will consider requests for alternative sealants as an alternative method of compliance if requested using the procedure specified in paragraph (k) of this AD. The FAA has not changed the AD in this regard.

Conclusion

The FAA reviewed the relevant data, considered the comments received, and determined that air safety and the public interest require adopting this final rule with the changes described previously and minor editorial changes. The FAA has determined that these minor changes:

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

The FAA also determined that these changes will not increase the economic burden on any operator or increase the scope of this final rule.

Related Service Information under 1 CFR Part 51

The FAA reviewed Boeing Multi Operator Message MOM-MOM-20-0049-01B(R4), dated September 28, 2020. This service information describes procedures for a general visual inspection for insufficient sealant in the SOB slot. The service information also describes procedures for related investigative actions including a general visual inspection of the ADMB for fuel contamination, a check for external leaks of the center fuel tank external surfaces inside the pressure boundary, and an internal leak check of the center fuel tank to identify the leakage path(s). The service information also describes procedures for corrective actions including removal of all insulation blankets below the crease beam (left side to right side), clean-up of all fuel contamination, repair of any leak, preparation of the SOB slot for sealing, application of sealant, and repair of the secondary fuel barrier. This service information is reasonably available because the interested parties have access to it through their normal course of business or by the means identified in the ADDRESSES section.

Costs of Compliance

The FAA estimates that this AD affects 731 airplanes of U.S. registry. The FAA estimates the following costs to comply with this AD:

Estimated costs

Action	Labor cost	Parts cost	Cost per product	Cost on U.S. operators
Inspection for sealant	30 work-hours X \$85 per hour = \$2,550	\$0	\$2,550	\$1,864,050

The FAA estimates the following costs to do any necessary repairs that would be required based on the results of the inspection. The FAA has no way of determining the number of aircraft that might need these repairs:

On-condition costs

Action	Labor cost	Parts cost	Cost per product
Repair of sealant	2 work-hours X \$85 per hour = \$170	\$129	\$299
Insulation blanket replacement	24 work-hours X \$85 per hour = \$2,040	\$6,312	\$8,352
Leak checks	6 work-hours X \$85 per hour = \$510	\$0	\$510

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.

The FAA is 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) Will not affect intrastate aviation in Alaska, 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.

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:

2021-02-14 The Boeing Company: Amendment 39-21397 ; Docket No. FAA-2020-0331; Product Identifier 2020-NM-019-AD.

(a) Effective Date

This airworthiness directive (AD) is effective [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

(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, line numbers 1 through 1934 inclusive.

(d) Subject

Air Transport Association (ATA) of America Code 28, Fuel.

(e) Unsafe Condition

This AD was prompted by a report that sealant was not applied to the side of body (SOB) slot inside of a pressurized boundary, which could lead to inconsistent application of the required secondary fuel barrier sealant (vapor barrier). The FAA is issuing this AD to address possible ignition of flammable fluid vapors, fire, or explosion, or fuel vapor inhalation by passengers and crew.

(f) Compliance

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

(g) SOB Slot Inspection and Related Investigative and Corrective Actions

Within 9 months after the effective date of this AD: Do a general visual inspection for insufficient sealant in the SOB slot, and do all applicable related investigative and corrective actions, in accordance with Boeing Multi Operator Message MOM-MOM-20-0049-01B(R4), dated September 28, 2020. Do all related investigative and corrective actions before further flight, except as provided in paragraph (h) of this AD.

(h) Deferred Repair

Repair of insufficient sealant as required by paragraph (g) of this AD may be deferred for 10 days provided there is no fuel present in the center tank as specified in the procedures in item 28-02A of the operator's existing FAA-approved minimum equipment list, and there is no fuel contamination in the air distribution mix bay (ADMB).

(i) Reporting Provisions

Although the service information referenced in Boeing Multi Operator Message MOM-MOM-20-0049-01B(R4), dated September 28, 2020, specifies to report inspection findings, this AD does not require any report.

(j) Credit for Previous Actions

This paragraph provides credit for the actions specified in paragraphs (g), (h), and (i) of this AD, if those actions were performed before the effective date of this AD using the service information identified in paragraph (j)(1), (2), or (3) of this AD.

(1) Boeing Multi Operator Message MOM-MOM-20-0049-01B(R1), dated January 29, 2020.

(2) Boeing Multi Operator Message MOM-MOM-20-0049-01B(R2), dated August 4, 2020.

(3) Boeing Multi Operator Message MOM-MOM-20-0049-01B(R3), dated September 23, 2020.

(k) Alternative Methods of Compliance (AMOCs)

(1) The Manager, Seattle ACO Branch, 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 certification office, send it to the attention of the person identified in paragraph (l)(1) 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, modification, or alteration required by this AD if it is approved by The Boeing Company Organization Designation Authorization (ODA) that has been authorized by the Manager, Seattle ACO Branch, FAA, to make those findings. To be approved, the repair

method, modification deviation, or alteration deviation must meet the certification basis of the airplane, and the approval must specifically refer to this AD.

(l) Related Information

(1) For more information about this AD, contact James Laubaugh, Aerospace Engineer, Propulsion Section, FAA, Seattle ACO Branch, 2200 South 216th St., Des Moines, WA 98198; phone and fax: 206-231-3622; email: james.laubaugh@faa.gov.

(2) Service information identified in this AD that is not incorporated by reference is available at the addresses specified in paragraphs (m)(3) and (4) of this AD.

(m) 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) Boeing Multi Operator Message MOM-MOM-20-0049-01B(R4), dated September 28, 2020.

(ii) [Reserved]

(3) For service information identified in this AD, contact Boeing Commercial Airplanes, Attention: Contractual & Data Services (C&DS), 2600 Westminister Blvd., MC 110-SK57, Seal Beach, CA 90740-5600; telephone 562-797-1717; Internet <https://www.myboeingfleet.com>.

(4) You may view this service information at the FAA, Airworthiness Products Section, Operational Safety Branch, 2200 South 216th St., Des Moines, WA. For information on the availability of this material at the FAA, call 206-231-3195.

(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, email fedreg.legal@nara.gov, or go to:

<https://www.archives.gov/federal-register/cfr/ibr-locations.html>.

Issued on January 14, 2021.

Lance T. Gant, Director,
Compliance & Airworthiness Division,
Aircraft Certification Service.

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