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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2019-1072; Product Identifier 2019-NM-181-AD; Amendment 39-19888; AD 2020-06-19]

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 727, 727C, 727-100, 727-100C, 727-200, and 727-200F series airplanes. This AD was prompted by reports of nuisance stick shaker activation while the airplane accelerated to cruise speed at the top of climb. This AD was also prompted by an investigation of those reports that revealed that the angle of attack (AOA) (also known as angle of airflow) sensor vanes could not prevent the build-up of ice, causing the AOA sensor vanes to become immobilized, which resulted in nuisance stick shaker activation. This AD requires a general visual inspection of the AOA sensors for certain AOA sensors, and replacement of affected AOA sensors. The FAA is issuing this AD to address the unsafe condition on these products.

DATES: This AD is effective June 22, 2020.

The Director of the Federal Register approved the incorporation by reference of a certain publication listed in this AD as of February 3, 2020 (84 FR 71778, December 30, 2019).

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, Transport Standards 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-2019-1072.

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-2019-1072; 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, the regulatory evaluation, 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: Jeffrey W. Palmer, Aerospace Engineer, Systems and Equipment Section, FAA, Los Angeles ACO Branch, 3960 Paramount Boulevard, Lakewood, CA 90712-4137; phone: 562-627-5351; fax: 562-627-5210; email: Jeffrey.W.Palmer@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 727, 727C, 727-100, 727-100C, 727-200, and 727-200F series airplanes. The NPRM published in the Federal Register on January 17, 2020 (85 FR 2914). The NPRM was prompted by reports of nuisance stick shaker activation while the airplane accelerated to cruise speed at the top of climb. The NPRM was also prompted by an investigation of those reports that revealed that the AOA sensor vanes could not prevent the build-up of ice, causing the AOA sensor vanes to become immobilized, which resulted in nuisance stick shaker activation. The NPRM proposed to require a general visual inspection of the AOA sensors for certain AOA sensors, and replacement of affected AOA sensors.

The FAA is issuing this AD to address ice buildup in the AOA sensor faceplate and vane, which may immobilize the AOA sensor vanes, and could result in inaccurate or unreliable AOA sensor data being transmitted to airplane systems and consequent loss of controllability of the airplane.

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. Boeing, Richard Rodriguez, and Shaun Felix indicated support for the NPRM.

Request To Reduce the Compliance Time

An anonymous commenter supported the intent of the NPRM, but the FAA infers that the commenter requests that the FAA reduce the proposed compliance time from 2,750 flight hours or 36 months, whichever occurs first, to 12 months. The commenter stated the time period feels too slow. The commenter also stated repairing a piece of technology from 1963 in 12 months should not be insurmountable. Richard Rodriguez also commented that the compliance time is excessive compared to the 12-month compliance time for other models. The FAA infers the commenter is requesting the compliance time be shortened to 12 months.

The FAA does not agree with the request to shorten the compliance time. After considering all the available information, the FAA has determined that the compliance time, as proposed, represents an appropriate interval of time in which the required actions can be performed in a timely manner within the affected fleet, while still maintaining an adequate level of safety. In developing an appropriate compliance time, the FAA considered the safety implications, parts availability, and normal maintenance schedules for timely accomplishment of the inspection and applicable replacements. Furthermore, other models affected by this unsafe condition are subject to AD 2019-

24-18, Amendment 39-21007 (84 FR 71778, December 30, 2019) (“AD 2019-24-18”), which requires compliance within 36 months or at the applicable time specified in the applicable service information, whichever occurs first. The compliance time in AD 2019-24-18 is consistent with the compliance time in 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 as proposed, except for 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.

Related Service Information Under 1 CFR Part 51

The FAA reviewed Boeing Alert Service Bulletin 727-34A0247, Revision 1, dated October 1, 2019, which the Director of the Federal Register approved for incorporation by reference as of February 3, 2020 (84 FR 71778, December 30, 2019). 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 1 airplane of U.S. registry. The FAA estimates the following costs to comply with this AD:

Estimated Costs for Required Actions

Action	Labor cost	Parts cost	Cost per product	Cost on U.S. operators
Inspection	1 work-hour × \$85 per hour = \$85	\$0	\$85	\$85.
Replacement	Up to 3 work-hours × \$85 per hour = Up to \$255	Up to \$54,000	Up to \$54,255	Up to \$54,255.

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 (AD):



2020-06-19 The Boeing Company: Amendment 39-19888; Docket No. FAA-2019-1072; Product Identifier 2019-NM-181-AD.

(a) Effective Date

This AD is effective June 22, 2020.

(b) Affected ADs

None.

(c) Applicability

This AD applies to The Boeing Company Model 727, 727C, 727-100, 727-100C, 727-200, and 727-200F series airplanes, certificated in any category, variable numbers QB065, QD191, QD192, QD402, QD403, QD407, and QD410.

(d) Subject

Air Transport Association (ATA) of America Code 34, Navigation.

(e) Unsafe Condition

This AD was prompted by reports of nuisance stick shaker activation while the airplane accelerated to cruise speed at the top of climb. This AD was also prompted by an investigation of those reports that revealed that the angle of attack (AOA) (also known as angle of airflow) sensor vanes could not prevent the build-up of ice, causing the AOA sensor vanes to become immobilized, which resulted in nuisance stick shaker activation. The FAA is issuing this AD to address ice buildup in the AOA sensor faceplate and vane, which may immobilize the AOA sensor vanes, and could result in inaccurate or unreliable AOA sensor data being transmitted to airplane systems and consequent loss of controllability of the airplane.

(f) Compliance

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

(g) Required Actions

Except as specified in paragraph (h) of this AD: Within 36 months after the effective date of this AD or at the applicable times specified in paragraph 1.E., "Compliance," of Boeing Alert Service Bulletin 727-34A0247, Revision 1, dated October 1, 2019, whichever occurs first, do all applicable actions identified as "RC" (required for compliance) in, and in accordance with, the Accomplishment Instructions of Boeing Alert Service Bulletin 727-34A0247, Revision 1, dated October 1, 2019.

(h) Exceptions to Service Information Specifications

Where Boeing Alert Service Bulletin 727-34A0247, Revision 1, dated October 1, 2019, uses the phrase “the original issue date of this service bulletin,” this AD requires using “the effective date of this AD.”

(i) Credit for Previous Actions

This paragraph provides credit for the actions specified in paragraph (g) of this AD, if those actions were performed before the effective date of this AD using Boeing Alert Service Bulletin 727-34A0247, dated January 2, 2019.

(j) Alternative Methods of Compliance (AMOCs)

(1) The Manager, Los Angeles 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 (k)(1) of this AD. Information may be emailed to: 9-ANM-LAACO-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, Los Angeles 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.

(4) Except as specified by paragraph (h) of this AD: For service information that contains steps that are labeled as Required for Compliance (RC), the provisions of paragraphs (j)(4)(i) and (ii) of this AD apply.

(i) The steps labeled as RC, including substeps under an RC step and any figures identified in an RC step, must be done to comply with the AD. If a step or substep is labeled “RC Exempt,” then the RC requirement is removed from that step or substep. An AMOC is required for any deviations to RC steps, including substeps and identified figures.

(ii) Steps not labeled as RC may be deviated from using accepted methods in accordance with the operator's maintenance or inspection program without obtaining approval of an AMOC, provided the RC steps, including substeps and identified figures, can still be done as specified, and the airplane can be put back in an airworthy condition.

(k) Related Information

(1) For more information about this AD, contact Jeffrey W. Palmer, Aerospace Engineer, Systems and Equipment Section, FAA, Los Angeles ACO Branch, 3960 Paramount Boulevard, Lakewood, CA 90712-4137; phone: 562-627-5351; fax: 562-627-5210; email: Jeffrey.W.Palmer@faa.gov.

(2) Service information identified in this AD that is not incorporated by reference is available at the addresses specified in paragraphs (l)(4) and (5) of this AD.

(I) 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 this AD specifies otherwise.

(3) The following service information was approved for IBR on February 3, 2020 (84 FR 71778, December 30, 2019).

(i) Boeing Alert Service Bulletin 727-34A0247, Revision 1, dated October 1, 2019.

(ii) [Reserved]

(4) 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>.

(5) You may view this service information at the FAA, Transport Standards Branch, 2200 South 216th St., Des Moines, WA. For information on the availability of this material at the FAA, call 206-231-3195.

(6) 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 March 27, 2020.

Lance T. Gant,

Director, Compliance & Airworthiness Division, Aircraft Certification Service.

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