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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2012-1041; Directorate Identifier 2011-NM-272-AD; Amendment 39-17590; AD 2013-19-08]

RIN 2120-AA64

Airworthiness Directives; The Boeing Company Airplanes

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule.

SUMMARY: We are adopting a new airworthiness directive (AD) for certain The Boeing Company Model 727 airplanes; Model 737-100, -200, and -200C series airplanes; and Model 747-100, -100B, -100B SUD, -200B, -200C, -200F, -300, -400, -400D, -400F, 747SR, and 747SP series airplanes. This AD was prompted by a report of an activation of the control column shaker during takeoff. This AD requires performing a general visual inspection to determine if a certain angle of attack (AOA) sensor with a paddle type vane is installed, and, for affected sensors, performing an operational test of the stall warning system, and replacing the AOA sensor with a new sensor if necessary. We are issuing this AD to prevent erroneous activation of the control column shaker during takeoff, which could result in runway overrun, failure to clear terrain or obstacles after takeoff, or reduced controllability of the airplane.

DATES: This AD is effective November 6, 2013.

The Director of the Federal Register approved the incorporation by reference of certain publications listed in the AD as of November 6, 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, Washington 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: Ray Mei, Aerospace Engineer, Systems and Equipment Branch, ANM-130S, Seattle Aircraft Certification Office, FAA, 1601 Lind Avenue SW., Renton, WA 98057-3356; phone: 425-917-6467; fax: 425-917-6590; email: raymont.mei@faa.gov.

SUPPLEMENTARY INFORMATION:

Discussion

We issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 by adding an AD that would apply to the specified products. The NPRM published in the Federal Register on October 10, 2012 (77 FR 61548). The NPRM proposed to require performing a general visual inspection to determine if a certain angle of attack (AOA) sensor with a paddle type vane is installed, and, for affected sensors, performing an operational test of the stall warning system, and replacing the AOA sensor with a new sensor 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 61548, October 10, 2012) and the FAA's response to each comment.

Supportive Comments

United Airlines and Air Line Pilots Association, International supported the NPRM (77 FR 61548, October 10, 2012).

Request To Allow Credit for Certain "C" Check Actions

Boeing requested that paragraph (f), "Compliance," of the NPRM (77 FR 61548, October 10, 2012) be modified. Boeing stated it recommends the NPRM specifically state that if the maintenance planning document (MPD) "C" check task associated with the stall warning system has been accomplished within the last 15 months, or if one is scheduled within the compliance time, it can take the place of the required inspection. Boeing stated that the intent of the NPRM is then satisfied and no further inspection is required. Boeing also stated that the compliance statement in the Boeing service information is identical to the "SRP 7X7-34-0114" final compliance recommendation submitted to the FAA and it has been agreed upon.

We partially agree with Boeing's request. We agree with the intent of the request that the stall warning system test may be accomplished in lieu of the required inspection of the AOA sensor. However, because maintenance documents vary among operators, operators will have to submit data substantiating that the change would provide an acceptable level of safety. We have added a new paragraph (h) to this AD to allow accomplishment of this optional method of compliance in accordance with a method approved by the FAA. We have redesignated subsequent paragraphs accordingly.

Request To Review the Maintenance Records in Lieu of the Inspection

Lufthansa Technik AG requested that a review of the maintenance records be allowed in lieu of the inspection. Lufthansa Technik stated that in many cases it is possible to determine the part number installed from the airplane maintenance documents. Lufthansa Technik stated that the Boeing delivery documents contain a list with part numbers of the AOA sensors that are installed at airplane delivery. Lufthansa Technik stated that in the case of an AOA sensor being changed or replaced after delivery, it will be recorded in the airplane maintenance records. Lufthansa Technik also stated that some operators keep databases with the part numbers and serial numbers currently installed on their airplanes. Lufthansa Technik stated that in order to avoid incorrect results of the maintenance reviews due to incomplete or unclear maintenance records, the option should be limited to those cases where the part number of the sensors can be determined from that review without any doubt.

We disagree with Lufthansa Technik's request. It is the FAA's intent with this AD to require determination of the type of AOA vanes installed on the airplane by an actual physical inspection of the AOA vane installation. For purposes of correcting a potential unsafe condition in the AOA vanes, the FAA considers actual physical inspection of the type of AOA vanes installed to be the most reliable method of determining what type of vane is installed. Although airplane maintenance records may in some cases document the AOA vane installation, they may also contain incorrect or outdated information, or be incorrectly interpreted (for example, by misreading the installed part number, or misunderstanding part number effectivity in the service information). Although it is true that in some cases the FAA has allowed a review of the maintenance records in lieu of an inspection, the physical inspection of the AOA in this case is far more reliable than the record check and it can be performed easily. We have not changed this 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—and minor editorial changes. We have determined that these minor changes:

- Are consistent with the intent that was proposed in the NPRM (77 FR 61548, October 10, 2012) for correcting the unsafe condition; and
- Do not add any additional burden upon the public than was already proposed in the NPRM (77 FR 61548, October 10, 2012).

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 1,013 airplanes of U.S. registry.

We estimate the following costs to comply with this AD:

Estimated Costs

Action	Labor cost	Parts cost	Cost per product	Cost on U.S. operators
Inspection	3 work-hours × \$85 per hour = \$255	\$0	\$255	\$258,315.

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 this replacement:

On-Condition Costs

Action	Labor cost	Parts cost	Cost per product
Replacement	Up to 2 work-hours × \$85 per hour = \$170	Up to \$36,552	Up to \$36,722.

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):



2013-19-08 The Boeing Company: Amendment 39-17590; Docket No. FAA-2012-1041; Directorate Identifier 2011-NM-272-AD.

(a) Effective Date

This AD is effective November 6, 2013.

(b) Affected ADs

None.

(c) Applicability

This AD applies to The Boeing Company series airplanes, certificated in any category, as specified in paragraphs (c)(1), (c)(2), and (c)(3) of this AD.

(1) Model 727, 727C, -100, -100C, -200, and -200F series airplanes, identified in Boeing Special Attention Service Bulletin 727-34-0245, dated June 4, 2008.

(2) Model 737-100, -200, and -200C series airplanes, identified in Boeing Special Attention Service Bulletin 737-34-2102, dated June 5, 2008.

(3) Model 747-100, -100B, -100B SUD, -200B, -200C, -200F, -300, -400, -400D, -400F, 747SR, and 747SP series airplanes, identified in Boeing Special Attention Service Bulletin 747-34-2925, dated June 4, 2008.

(d) Subject

Joint Aircraft System Component (JASC)/Air Transport Association (ATA) of America Code 3418, Stall Warning System.

(e) Unsafe Condition

This AD was prompted by a report of an erroneous activation of the control column shaker during takeoff. We are issuing this AD to prevent erroneous activation of the control column shaker during takeoff, which could result in runway overrun, failure to clear terrain or obstacles after takeoff, or reduced controllability of the airplane.

(f) Compliance

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

(g) Inspection

Within 36 months after the effective date of this AD: Do a general visual inspection of the left and right angle of attack (AOA) sensor as applicable, to determine if a certain AOA sensor with a paddle type vane is installed, in accordance with the Accomplishment Instructions of the applicable service information specified in paragraph (g)(1), (g)(2), or (g)(3) of this AD.

(1) Boeing Special Attention Service Bulletin 727-34-0245, dated June 4, 2008 (for Model 727 airplanes).

(2) Boeing Special Attention Service Bulletin 737-34-2102, dated June 5, 2008 (for Model 737-100, -200, and -200C series airplanes).

(3) Boeing Special Attention Service Bulletin 747-34-2925, dated June 4, 2008 (for Model 747-100, -100B, -100B SUD, -200B, -200C, -200F, -300, -400, -400D, -400F, 747SR, and 747SP series airplanes).

(h) Optional Method of Compliance

Operators may accomplish a stall warning system test in lieu of the inspection specified in paragraph (g) of this AD by using a method approved by the Manager, Seattle Aircraft Certification Office (ACO), FAA.

(i) Operational Test and Replacement

If, during the inspection required by paragraph (g) of this AD, it is determined that an AOA sensor with a paddle type vane is installed: Before further flight, do an operational test of the stall warning system, in accordance with Part 2 of the Accomplishment Instructions of the applicable service information specified in paragraph (g)(1), (g)(2), or (g)(3) of this AD.

(1) For group 2 airplanes identified in Boeing Special Attention Service Bulletin 747-34-2925, dated June 4, 2008: If you cannot get the values given in the table specified in Part 2 of the Accomplishment Instructions of Boeing Special Attention Service Bulletin 747-34-2925, dated June 4, 2008, before further flight, replace the AOA sensor, in accordance with the Accomplishment Instructions of Boeing Special Attention Service Bulletin 747-34-2925, dated June 4, 2008.

(2) For all airplanes, except those identified in paragraph (i)(1) of this AD: If the AOA sensor fails to activate the control column shaker in the operational test, replace the AOA sensor with a new AOA sensor, in accordance with Part 3 of the Accomplishment Instructions of the applicable service information specified in paragraph (i)(2)(i), (i)(2)(ii), or (i)(2)(iii) of this AD.

(i) Boeing Special Attention Service Bulletin 727-34-0245, dated June 4, 2008 (for Model 727 airplanes).

(ii) Boeing Special Attention Service Bulletin 737-34-2102, dated June 5, 2008 (for Model 737-100, -200, and -200C series airplanes).

(iii) Boeing Special Attention Service Bulletin 747-34-2925, dated June 4, 2008 (for Model 747-100, -100B, -100B SUD, -200B, -200C, -200F, -300, -400, -400D, -400F, 747SR, and 747SP series airplanes).

(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.

(k) Related Information

For more information about this AD, contact Ray Mei, Aerospace Engineer, Systems and Equipment Branch, ANM-130S, Seattle Aircraft Certification Office, FAA, 1601 Lind Avenue SW., Renton, WA 98057-3356; phone: (425) 917-6467; fax: (425) 917-6590; email: raymont.mei@faa.gov.

(l) 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 Special Attention Service Bulletin 727-34-0245, dated June 4, 2008.

(ii) Boeing Special Attention Service Bulletin 737-34-2102, dated June 5, 2008.

(iii) Boeing Special Attention Service Bulletin 747-34-2925, dated June 4, 2008.

(3) For Boeing 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; Internet <https://www.myboeingfleet.com>.

(4) You may view this service information at 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 September 13, 2013.
Jeffrey E. Duven,
Acting Manager, Manager, Transport Airplane Directorate,
Aircraft Certification Service.