[4910-13-P]

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2020-0103; Product Identifier 2019-NM-149-AD]

RIN 2120-AA64

Airworthiness Directives; The Boeing Company Airplanes

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Notice of proposed rulemaking (NPRM).

SUMMARY: The FAA proposes to supersede Airworthiness Directive (AD) 2012-21-08, which applies to certain The Boeing Company Model 737-600, -700, -700C, -800, and -900 series airplanes. AD 2012-21-08 requires inspecting for part numbers of the operational program software (OPS) of the flight control computers (FCCs) and installing and testing an updated version of the FCC OPS. Since the FAA issued AD 2012-21-08, the FAA has determined that there is a new unsafe condition which must be addressed by an updated version of the FCC OPS. This proposed AD would retain the requirement to inspect for part numbers of the OPS of the FCCs, and add a new requirement to update the version of the FCC OPS if necessary. This proposed AD would also expand the applicability to include The Boeing Company Model 737-900ER series airplanes. The FAA is proposing this AD to address the unsafe condition on these products.

DATES: The FAA 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 https://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.

For service information identified in this NPRM, contact Boeing Commercial Airplanes, Attention: Contractual & Data Services (C&DS), 2600 Westminster 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-2020-0103.

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-2020-0103; 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 NPRM, the regulatory evaluation, any comments received,

and other information. The street address for Docket Operations is listed above. Comments will be available in the AD docket shortly after receipt.

FOR FURTHER INFORMATION CONTACT: David Sumner, Aerospace Engineer, Systems and Equipment Section, FAA, Seattle ACO Branch, 2200 South 216th St., Des Moines, WA 98198; phone and fax: 206-231-3538; email: david.sumner@faa.gov.

SUPPLEMENTARY INFORMATION:

Comments Invited

The FAA invites 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-2020-0103; Product Identifier 2019-NM-149-AD" at the beginning of your comments. The FAA specifically invites comments on the overall regulatory, economic, environmental, and energy aspects of this NPRM. The FAA will consider all comments received by the closing date and may amend this NPRM because of those comments.

The FAA will post all comments, without change, to https://www.regulations.gov, including any personal information you provide. The FAA will also post a report summarizing each substantive verbal contact the agency receives about this proposed AD.

Discussion

The FAA issued AD 2012-21-08, Amendment 39-17224 (77 FR 64711, October 23, 2012) ("AD 2012-21-08"), for certain The Boeing Company Model 737-600, -700, -700C, -800, and -900 series airplanes. AD 2012-21-08 requires inspecting for part numbers of the OPS of the FCCs and installing and testing an updated version of the FCC

OPS. AD 2012-21-08 resulted from reports of undetected erroneous output from a single radio altimeter channel, which resulted in premature autothrottle retard during approach. The FAA issued AD 2012-21-08 to address this condition, which, if not detected and corrected, could result in the loss of automatic speed control, and consequent loss of control of the airplane.

Actions Since AD 2012-21-08 Was Issued

Since the FAA issued AD 2012-21-08, the FAA has received reports that during autopilot coupled Instrument Landing System (ILS) approaches, the airplane did not capture or track the glideslope correctly. This caused airplanes to continue descending below the glideslope without any fault indication from the autopilot system. The problems were reported with the autopilot engaged while attempting to capture the glideslope from above, with a high descent rate greater than 2,000 feet per minute and late arming of approach mode. The high descent rate is maintained by the autopilot and can result in the airplane descending below the glideslope beam, which requires the flight crew to correct the problem manually. Boeing has developed an upgrade to the FCC OPS for certain affected airplanes equipped with Rockwell Collins FCCs that corrects the glideslope capture problem. The FAA is proposing this AD to address this condition, which can result in controlled flight into terrain on airplanes that do not have the upgraded FCC OPS installed.

Related Service Information under 1 CFR part 51

The FAA reviewed Boeing Alert Requirements Bulletin 737-22A1322 RB, dated November 21, 2018. The service information describes procedures for installing and testing an updated version of the FCC OPS.

This proposed AD would also require Boeing Alert Service Bulletin 737-22A1211, dated April 13, 2010, and Boeing Alert Service Bulletin 737-22A1224, dated May 18, 2012, which the Director of the Federal Register approved for incorporation by reference as of November 27, 2012 (77 FR 64711, October 23, 2012).

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.

FAA's Determination

The FAA is proposing this AD because the FAA evaluated all the relevant information and determined the unsafe condition described previously is likely to exist or develop in other products of the same type design.

Proposed AD Requirements

This proposed AD would retain certain requirements of AD 2012-21-08. This proposed AD would expand the applicability of AD 2012-21-08 to include The Boeing Company Model 737-900ER series airplanes. This proposed AD would also require accomplishment of the actions specified in the Accomplishment Instructions of Boeing Alert Requirements Bulletin 737-22A1322 RB, dated November 21, 2018, described previously, except as discussed under "Differences Between this Proposed AD and the Service Information," and except for any differences identified as exceptions in the regulatory text of this proposed AD.

For information on the procedures and compliance times, see this service information at https://www.regulations.gov by searching for and locating Docket No. FAA-2020-0103.

Explanation of Requirements Bulletin

The FAA worked in conjunction with industry, under the Airworthiness Directive Implementation Aviation Rulemaking Committee (AD ARC), to enhance the AD system. One enhancement is a process for annotating which steps in the service information are "required for compliance" (RC) with an AD. Boeing has implemented this RC concept into Boeing service bulletins.

In an effort to further improve the quality of ADs and AD-related Boeing service information, a joint process improvement initiative was worked between the FAA and Boeing. The initiative resulted in the development of a new process in which the service information more clearly identifies the actions needed to address the unsafe condition in the "Accomplishment Instructions." The new process results in a Boeing Requirements Bulletin, which contains only the actions needed to address the unsafe condition (i.e., only the RC actions).

Differences Between this Proposed AD and the Service Information

The effectivity of Boeing Alert Requirements Bulletin 737-22A1322 RB, dated November 21, 2018, is limited to The Boeing Company Model 737-600, -700, -700C, -800, -900, and 900ER series airplanes, line numbers 1270, 1272, and 1278 through 7153 inclusive in one group. Because the affected software versions are rotable among the airplanes affected by this proposed AD, the FAA has determined that these parts could later be installed on airplanes that were initially delivered with acceptable software versions, thereby subjecting those airplanes to the unsafe condition. Therefore, the applicability of this proposed AD includes all The Boeing Company Model 737-600, -700, -700C, -800, -900, and 900ER series airplanes.. The FAA has confirmed with

Boeing that the Accomplishment Instructions in Boeing Alert Requirements Bulletin 737-22A1322 RB, dated November 21, 2018, are applicable to the expanded group of airplanes.

Boeing Alert Requirements Bulletin 737-22A1322 RB, dated November 21, 2018, specifies that certain airplane line numbers must accomplish an update of the FCC OPS. However, this AD requires that only airplanes equipped with Rockwell Collins FCCs installed with FCC OPS version P8.0 or P9.0 must accomplish an update of the FCC OPS in accordance with the Accomplishment Instructions of Boeing Alert Requirements Bulletin 737-22A1322 RB, dated November 21, 2018.

Costs of Compliance

The FAA estimates that this proposed AD affects 520 airplanes of U.S. registry. The FAA estimates the following costs to comply with this proposed AD:

Estimated costs for required actions

Action	Labor cost	Parts cost	Cost per product	Cost on U.S. operators
Inspection and installation (retained actions from AD 2012-21-08)	3 work-hours X $85 per hour = $255 per inspection	$0	$255	$52,785 (based on 207 affected airplanes)
Part number inspection (new proposed action)	1 work-hour X $85 per hour = $85	$0	$85	$44,200

The FAA estimates the following costs to do any necessary on-condition actions that would be required. The FAA has no way of determining the number of aircraft that might need these on-condition actions:

Estimated costs of on-condition costs

Action	Labor cost	Parts cost	Cost per product
Install upgraded software	1 work-hour X $85 per hour = $85	$0	$85

According to the manufacturer, all of the costs of this proposed AD may be covered under warranty, thereby reducing the cost impact on affected individuals. The FAA does not control warranty coverage for affected individuals. As a result, the FAA has included all costs in our cost estimate.

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

The FAA has 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 that the proposed regulation:

(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.

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 removing Airworthiness Directive (AD) 2012-21-08, Amendment 39-17224 (77 FR 64711, October 23, 2012), and adding the following new AD:

The Boeing Company Airplanes: Docket No. FAA-2020-0103; Product Identifier 2019-NM-149-AD.

(a) Comments Due Date

The FAA must receive comments on this AD action by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

(b) Affected ADs

This AD replaces AD 2012-21-08, Amendment 39-17224 (77 FR 64711, October 23, 2012).

(c) Applicability

This AD applies to all The Boeing Company Model 737-600, -700, -700C, -800, -900, and -900ER series airplanes, certificated in any category.

(d) Subject

Air Transport Association (ATA) of America Code 22, Auto flight.

(e) Unsafe Condition

This AD was prompted by reports that during autopilot coupled instrument landing (ILS) approaches, the airplane did not capture or track the glideslope correctly. The FAA is issuing this AD to address this condition, which could allow the airplane to descend below the glideslope beam and result in controlled flight into terrain.

(f) Compliance

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

(g) Retained Part Numbers Inspection, With Revised Paragraph References and Removed Terminating Action

This paragraph restates the requirements of paragraph (h) of AD 2012-21-08, with revised paragraph references and removed terminating action. For The Boeing Company Model 737-600, -700, -700C, -800, and -900 series airplanes, certificated in any category; delivered with the Rockwell Collins Enhanced Digital Flight Control System (EDFCS),

as identified in the variable number table in Section 1.A.1., Effectivity, of Boeing Alert Service Bulletin 737-22A1211, dated April 13, 2010, and not defined by the "Group 1" description in Section 1.A. of Boeing Alert Service Bulletin 737-22A1211, dated April 13, 2010: Within 3 months after November 27, 2012 (the effective date of AD 2012-21-08), inspect to determine the part number of the operational program software (OPS) of the flight control computers (FCCs), in accordance with the Accomplishment Instructions of Boeing Alert Service Bulletin 737-22A1211, dated April 13, 2010, and install the software as required by paragraph (g)(1) of this AD, or verify that the software is installed as specified by paragraph (g)(2) of this AD, as applicable.

(1) For any OPS having a part number identified in table 1 of the Accomplishment Instructions of Boeing Alert Service Bulletin 737-22A1211, dated April 13, 2010: Before further flight, do the actions specified in paragraph (g)(1)(i) or (ii), as applicable.

(i) Install software identified in table 2 of the Accomplishment Instructions of Boeing Alert Service Bulletin 737-22A1211, dated April 13, 2010, in accordance with the Accomplishment Instructions of Boeing Alert Service Bulletin 737-22A1211, dated April 13, 2010.

(ii) Install software identified in table 2 of the Accomplishment Instructions of Boeing Alert Service Bulletin 737-22A1224, dated May 18, 2012.

(2) For any OPS having a part number identified in table 2 of the Accomplishment Instructions of Boeing Alert Service Bulletin 737-22A1211, dated April 13, 2010; or in table 2 of the Accomplishment Instructions of Boeing Alert Service

Bulletin 737-22A1224, dated May 18, 2012: No further action is required by this paragraph.

(h) Retained Optional Software Installation, With Revised Paragraph References

This paragraph restates the requirements of paragraph (i) of AD 2012-21-08, with revised paragraph references. Installing a version of the FCC OPS approved after May 18, 2012 (the issue date of Boeing Alert Service Bulletin 737-22A1224) terminates the requirements of paragraph (g) of this AD, provided that the conditions specified in paragraphs (h)(1) and (2) of this AD are met.

(1) The version of the FCC OPS must be approved by the Manager, Seattle ACO Branch, FAA; the Manager, Boeing Aviation Safety Oversight Office (BASOO), FAA; or The Boeing Company Organization Designation Authorization (ODA). If approved by the ODA, the approval must include the ODA-authorized signature.

(2) The installation must be done in accordance with a method approved by the Manager, Seattle ACO, FAA; the Manager, BASOO, FAA; or The Boeing Company ODA. If approved by the ODA, the approval must include the ODA-authorized signature.

(i) New Requirement of this AD: Inspection

For all airplanes: Within 12 months after the effective date of this AD, inspect to determine the FCC OPS vendor and version installed on FCC A and FCC B. A review of airplane maintenance records is acceptable in lieu of this inspection if the FCC OPS vendor and version can be conclusively determined from that review.

(j) New Requirement of this AD: Software Installation

(1) For airplanes equipped with Rockwell Collins FCCs with FCC OPS version P8.0 or P9.0 software: Within 12 months after the effective date of this AD, do all

applicable actions identified in, and in accordance with, the Accomplishment Instructions of Boeing Alert Requirements Bulletin 737-22A1322 RB, dated November 21, 2018.

Note 1 to paragraph (j)(1): Guidance for accomplishing the actions required by paragraph (j)(1) of this AD can be found in Boeing Alert Service Bulletin 737-22A1322, dated November 21, 2018, which is referred to in Boeing Alert Requirements Bulletin 737-22A1322 RB, dated November 21, 2018.

(2) For airplanes not equipped with Rockwell Collins FCCs with FCC OPS version P8.0 or P9.0 software: No further action is required by this paragraph.

(k) New Requirement of this AD: Parts Installation Prohibition

For all airplanes: As of the effective date of this AD, no person may install Rockwell Collins FCC OPS software version P1.0, P2.0, P3.0, P8.0, or P9.0, on any airplane.

(l) 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 (m)(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 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.

(m) Related Information

(1) For more information about this AD, contact David Sumner, Aerospace Engineer, Systems and Equipment Section, FAA, Seattle ACO Branch, 2200 South 216th St., Des Moines, WA 98198; phone and fax: 206-231-3538; email: david.sumner@faa.gov.

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

Issued on February 18, 2020.

Gaetano A. Sciortino, Deputy Director for Strategic Initiatives,
Compliance & Airworthiness Division,
Aircraft Certification Service.

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