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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2016-9501; Directorate Identifier 2016-NM-137-AD; Amendment 39-18961; AD 2017-15-01]

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 777 airplanes. This AD was prompted by reports of uncommanded altitude display changes in the mode control panel (MCP) altitude window. This AD requires replacing the existing MCP with a new MCP having a different part number. We are issuing this AD to address the unsafe condition on these products.

DATES: This AD is effective August 25, 2017.

The Director of the Federal Register approved the incorporation by reference of a certain publication listed in this AD as of August 25, 2017.

ADDRESSES: For service information identified in this final rule, 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 Airplane Directorate, 1601 Lind Avenue SW., Renton, WA. For information on the availability of this material at the FAA, call 425-227-1221. It is also available on the Internet at http://www.regulations.gov by searching for and locating Docket No. FAA-2016-9501.

Examining the AD Docket

You may examine the AD docket on the Internet at http://www.regulations.gov by searching for and locating Docket No. FAA-2016-9501; 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 Docket 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: Frank Carreras, Aerospace Engineer, Systems and Equipment Branch, ANM-130S, FAA, Seattle Aircraft Certification Office (ACO), 1601 Lind Avenue SW., Renton, WA 98057-3356; phone: 425-917-6442; fax: 425-917-6590; email: frank.carreras@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 certain The Boeing Company Model 777 airplanes. The NPRM published in the Federal Register on December 20, 2016 (81 FR 92740) ("the NPRM"). The NPRM was prompted by reports of uncommanded altitude display changes in the MCP altitude window. The NPRM proposed to require replacing the existing MCP with a new MCP having a different part number. We are issuing this AD to prevent uncommanded changes to the MCP selected at altitude; such uncommanded changes could result in incorrect spatial separation between airplanes, midair collision, or controlled flight into terrain.

Comments

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

Support for the NPRM

Boeing and FedEx stated that they concur with the contents of the NPRM.

Request To Reduce the Compliance Time

Air Line Pilots Association, International (ALPA), indicated its support for the NPRM but requested that the compliance time in paragraph (g) of the proposed AD be reduced from 60 months to 50 months. The commenter did not provide justification for its request.

We do not agree with the commenter's request to reduce the compliance time. In developing an appropriate compliance time, we considered the safety implications and the availability of required parts. In addition, we also received manufacturer concurrence for the 60-month compliance time. In consideration of all of these factors, we determined that the compliance time, as proposed, represents an appropriate interval in which the MCP parts can be replaced in a timely manner within the fleet, while still maintaining an adequate level of safety. For most ADs, operators are permitted to accomplish the requirements at a time earlier than the specified compliance time; for this AD, an operator may choose to replace the affected MCP at any time up to 60 months after the effective date of this AD. If additional data are presented that would justify a shorter compliance time, we might consider further rulemaking on this issue. We have not changed this AD in this regard.

Request To Revise the Applicability

United Airlines (UAL) requested that the applicability of the proposed AD be limited to only those MCP series parts on which the uncommanded changes in the speed/mach window occurred. The commenter noted that the NPRM did not indicate if the uncommanded changes were reported on all three MCP series parts (MCP-770, MCP-771, and MCP-770C) or only one MCP series part. The

commenter suggested that if the uncommanded changes occurred only on one MCP series part, then the applicability of the proposed AD should be limited to that particular MCP series part. The commenter observed that this would reduce the number of MCP parts that need to be replaced or upgraded and reduce the compliance time needs.

We agree that clarification is necessary regarding the affected MCP series parts. Based on the manufacturer's installation review, the unsafe condition has been identified to exist in all three MCP series parts. Therefore, no change to this AD is required regarding this issue.

Request To Review the MCP Design

One commenter, Geoffrey Barrance, noted that the FAA has issued AD 2016-25-01, Amendment 39-18727 (81 FR 94949, December 27, 2016), which addressed uncommanded autopilot engagement before takeoff. The commenter thought that there was a similarity in the root causes (malfunction of the MCP) of the unsafe conditions in AD 2016-25-01 and this final rule. The commenter recommended that the FAA initiate a review of the MCP design, including changes that might have been introduced over the life of these units, to identify if the design was initially susceptible to, or has been subsequently compromised in a way that could result in the unsafe conditions of both ADs.

We infer the commenter may think the unsafe condition associated with AD 2016-25-01 resulted from a similar root cause as the unsafe condition addressed by this AD based on a statement in the Discussion section of the NPRM (80 FR 79735, December 23, 2015) associated with AD 2016-25-01. That statement noted that “the erroneous autopilot engage request is believed to have come from the mode control panel (MCP) and to have been caused by contamination within the MCP.” During the public comment period for the NPRM associated with AD 2016-25-01, Boeing stated that this statement was speculative and requested that the FAA remove it and replace it with a statement that possible failures in the autopilot flight director system can cause an uncommanded engagement of the autopilot. We agreed the replacement statement would be less speculative; however, because the Discussion section of an NPRM is not repeated in the final rule, AD 2016-25-01 was not revised.

We do not agree with the commenter's request because we have determined that there is no similarity in the root cause of the unsafe condition of AD 2016-25-01 and this AD. The unsafe condition identified in AD 2016-25-01 is different from the unsafe condition identified in this final rule. AD 2016-25-01 addresses uncommanded autopilot engagement on the ground, potentially resulting in incorrect stabilizer trim adjustment during takeoff. This final rule addresses uncommanded altitude display changes in the MCP while the autopilot is engaged. We have not changed this AD regarding this issue.

Requests To Revise the Estimated Costs of Compliance

Cathay Pacific Airlines asked why operators are being charged for the parts and labor associated with compliance with the proposed AD if the unsafe condition is the result of a design flaw (the problematic MCP-770 part) that could not be detected during flight tests or the design phase. We infer that the commenter is requesting that either the estimated costs of the proposed AD be revised or the manufacturer's warranty coverage.

We do not agree to revise the cost estimates. We do not control the manufacturer's warranty coverage. We have identified an unsafe condition that must be corrected to ensure that airplanes are operated in an airworthy condition, as required by the Federal Aviation Regulations. We have not changed this AD in regard to this issue.

UAL requested a revision to the estimated costs of the proposed AD because the estimated costs provided are too low. UAL stated that only MCP-770C can be upgraded and all other MCP series parts would need to be replaced. UAL observed that its estimated fleet cost would exceed $8,000,000.

We do not agree with the commenter's request. We acknowledge that the cost estimate does not include the cost of a new MCP. The estimated costs in the NPRM were based on data provided in Boeing Special Attention Service Bulletin 777-22-0034, dated March 3, 2016. The cost section of the

NPRM indicated that we have received no definitive data regarding the cost of a new MCP. Although UAL provided a cost estimate for its fleet, we still have not received a definitive cost estimate for a new MCP. We have not changed this AD regarding this issue.

Conclusion

We reviewed the relevant data, considered the comments received, and determined that air safety and the public interest require adopting this AD as proposed except for minor editorial changes. We have determined that these minor changes:

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

We also determined that these changes will not increase the economic burden on any operator or increase the scope of this AD.

Related Service Information Under 1 CFR Part 51

We reviewed Boeing Special Attention Service Bulletin 777-22-0034, dated March 3, 2016. The service information describes procedures for replacing the existing MCP part with a new MCP part having a different part number, in the glareshield in the flight compartment. 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

We estimate that this AD affects 203 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
Replacement	2 work-hours × $85 per hour = $170	Up to $5,800[1]	Up to $5,970	Up to $1,211,910.[1]

[1] Since we have received no definitive data regarding the cost of a new MCP we have provided costs for the upgrade (modified part) only.

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):

2017-15-01 The Boeing Company: Amendment 39-18961; Docket No. FAA-2016-9501; Directorate Identifier 2016-NM-137-AD.

(a) Effective Date

This AD is effective August 25, 2017.

(b) Affected ADs

None.

(c) Applicability

This AD applies to The Boeing Company Model 777-200, -200LR, -300, -300ER, and 777F series airplanes, certificated in any category, identified in Boeing Special Attention Service Bulletin 777-22-0034, dated March 3, 2016.

(d) Subject

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

(e) Unsafe Condition

This AD was prompted by reports of uncommanded altitude display changes in the mode control panel (MCP) altitude window. We are issuing this AD to prevent uncommanded changes to the MCP selected altitude; such uncommanded changes could result in incorrect spatial separation between airplanes, midair collision, or controlled flight into terrain.

(f) Compliance

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

(g) Replacement of MCP

Within 60 months after the effective date of this AD: Replace the existing MCP part with a new MCP part having a different part number, in accordance with the Accomplishment Instructions of Boeing Special Attention Service Bulletin 777-22-0034, dated March 3, 2016.

(h) 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 (i) 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 Commercial Airplanes Organization Designation Authorization (ODA) that has been authorized by the Manager, Seattle ACO, 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) For service information that contains steps that are labeled as Required for Compliance (RC), the provisions of paragraphs (h)(4)(i) and (h)(4)(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.

(i) Related Information

For more information about this AD, contact Frank Carreras, Aerospace Engineer, Systems and Equipment Branch, ANM-130S, FAA, Seattle ACO, 1601 Lind Avenue SW., Renton, WA 98057-3356; phone: 425-917-6442; fax: 425-917-6590; email: frank.carreras@faa.gov.

(j) 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 777-22-0034, dated March 3, 2016.

(ii) Reserved.

(3) For service information identified in this AD, contact Boeing Commercial Airplanes, Attention: Data & Services Management, P.O. Box 3707, MC 2H-65, Seattle, WA 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 the FAA, Transport Airplane Directorate, 1601 Lind Avenue SW., Renton, WA. 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 July 7, 2017.
Dionne Palermo,
Acting Manager, Transport Airplane Directorate,
Aircraft Certification Service.