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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2023-1649; Project Identifier AD-2022-00905-T; Amendment 39-22667; AD 2024-02-03]

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 747-8 and 747-8F series airplanes. This AD was prompted by a report that all six Integrated Display Units (IDUs) became blank when new flight plan data was entered in the Flight Management System (FMS), and by a determination that indication of decaying airspeed in certain scenarios is required. This AD requires installing updated software. The FAA is issuing this AD to address the unsafe condition on these products.

DATES:

This AD is effective March 21, 2024.

The Director of the Federal Register approved the incorporation by reference of a certain publication listed in this AD as of March 21, 2024.

ADDRESSES:

AD Docket: You may examine the AD docket at *regulations.gov* under Docket No. FAA-2023-1649; 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.

Material Incorporated by Reference:

- For service information identified in this final rule, contact Boeing Commercial Airplanes, Attention: Contractual & Data Services, 2600 Westminister Boulevard., MC 110-SK57, Seal Beach, CA 90740-5600; telephone 562-797-1717; website myboeingfleet.com.
- You may view this service information at the FAA, Airworthiness Products Section, Operational Safety Branch, 2200 South 216th Street, Des Moines, WA. For information on the availability of this material at the FAA, call 206-231-3195. It is also available at regulations.gov under Docket No. FAA-2023-1649.

FOR FURTHER INFORMATION CONTACT:

Raja Vengadasalam, Aviation Safety Engineer, FAA, 2200 South 216th Street, Des Moines, WA 98198; telephone 206-231-3537; email raja.vengadasalam@faa.gov.

SUPPLEMENTARY INFORMATION:

Background

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 747-8 and 747-8F series airplanes. The NPRM published in the **Federal Register** on August 25, 2023 ([88 FR 58120](#)). The NPRM was prompted by a report indicating all six IDUs became blank when new flight plan data was entered in the FMS. It was determined that the Jeppesen airport map database (AMDB) had an error in the data structure tied to the Sydney airport (YSSY). The Electronic Flight Instrumentation System/Engine Indicating and Crew Alerting System (EICAS) Interface Units (EIUs) were unable to process the data structure, resulting in the displays blanking. Jeppesen subsequently fixed the AMDB to address the issue with YSSY and additional airport codes with an incorrect data structure. The current EIU software is unable to process incorrect data structures, which results in an EIU fault that cannot be cleared by the automated reset function of an EIU. After five resets the EIU defaults to shut down, resulting in all six IDUs, which are controlled by the EIUs, becoming blank. The EIU shut down can also result in an autothrottle disconnect and a degraded autopilot mode. The problem can occur on the ground when an airport code with an incorrect data structure in the AMDB is entered as an origin or destination and the flight plan is then put into operation by the FMS. In flight, the problem can occur when an airport code with an incorrect data structure in the AMDB is entered as the selected diversion airport.

Additionally, the existing software does not provide an earlier indication of decaying airspeed during the landing phase for flap settings 25 and 30. The revised software provides an earlier threshold for triggering the low airspeed alerting EICAS Caution message.

In the NPRM, the FAA proposed to require installing updated software. The unsafe condition, if not addressed, could result in loss of all flight deck displays (Primary Flight Display/EICAS/Navigation Display, not including standby displays) combined with potential impact to the autopilot and auto-

throttle functionality and lack of crew visibility of any subsequent system failures, which can prevent continued safe flight and landing; it could also result in inadequate alerting of decaying airspeed, unacceptably low airspeed, and loss of control of the airplane.

Discussion of Final Airworthiness Directive

Comments

The FAA received comments from two commenters. Boeing stated it had no technical objection to the proposed AD. An anonymous individual commented generally on the manufacturer but provided no comments on the proposed actions or on the determination of the costs.

Conclusion

The FAA reviewed the relevant data, considered any comments received, and determined that air safety requires adopting this AD as proposed. Accordingly, the FAA is issuing this AD to address the unsafe condition on these products. Except for minor editorial changes, this AD is adopted as proposed in the NPRM. None of the changes will increase the economic burden on any operator.

Related Service Information Under [1 CFR Part 51](#)

The FAA reviewed Boeing Alert Requirements Bulletin 747-31A2544 RB, dated March 31, 2020. This service information specifies procedures for installing Integrated Display System (IDS) 804 software in each of the six Liquid Crystal Display (LCD) IDUs and in each of the three EIUs, if not already installed; followed by installing IDS 805 software, which includes EIU software part number COL3F-0034-E805 and LCD software part number 3177-COL-DL8-05.

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 **ADDRESSES** section.

Costs of Compliance

The FAA estimates that this AD affects 19 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
Software Installation	Up to 6 work-hours × \$85 per hour = \$510	Up to \$650	Up to \$1,160	Up to \$22,040.

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

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:

2024-02-03 The Boeing Company: Amendment 39-22667; Docket No. FAA-2023-1649; Project Identifier AD-2022-00905-T.

(a) Effective Date

This airworthiness directive (AD) is effective March 21, 2024.

(b) Affected ADs

None.

(c) Applicability

This AD applies to The Boeing Company Model 747-8 and 747-8F series airplanes, certificated in any category, as identified in Boeing Alert Requirements Bulletin 747-31A2544 RB, dated March 31, 2020.

(d) Subject

Air Transport Association (ATA) of America Code: 31, Instruments.

(e) Unsafe Condition

This AD was prompted by a report that all six Integrated Display Units (IDUs) became blank when new flight plan data was entered in the Flight Management System, and by a determination that indication of decaying airspeed in certain scenarios is required. The FAA is issuing this AD to address problems with the Electronic Flight Instrumentation System/Engine Indicating and Crew Alerting System (EICAS) Interface Units (EIUs), which control the IDUs. The unsafe condition, if not addressed, could result in loss of all flight deck displays (Primary Flight Display/EICAS/Navigation Display, not including standby displays) combined with potential impact to the autopilot and auto-throttle functionality and lack of crew visibility of any subsequent system failures, which can prevent continued safe flight and landing; it could also result in inadequate alerting of decaying airspeed, unacceptably low airspeed, and loss of control of the airplane.

(f) Compliance

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

(g) Required Actions

Except as specified by paragraph (h) of this AD: At the applicable times specified in the "Compliance" paragraph of Boeing Alert Requirements Bulletin 747-31A2544 RB, dated March 31, 2020, do all applicable actions identified in, and in accordance with, the Accomplishment Instructions of Boeing Alert Requirements Bulletin 747-31A2544 RB, dated March 31, 2020.

Note 1 to paragraph (g): Guidance for accomplishing the actions required by this AD can be found in Boeing Alert Service Bulletin 747-31A2544, dated March 31, 2020, which is referred to in Boeing Alert Requirements Bulletin 747-31A2544 RB, dated March 31, 2020.

(h) Exceptions to Service Information Specifications

(1) Where the Compliance Time column of the table in the “Compliance” paragraph of Boeing Alert Requirements Bulletin 747–31A2544 RB, dated March 31, 2020, uses the phrase “the original issue date of Requirements Bulletin 747–31A2544 RB,” this AD requires using “the effective date of this AD.”

(2) For Group 2 airplanes identified in Boeing Alert Requirements Bulletin 747–31A2544 RB, dated March 31, 2020: The concurrent requirements specified in Action 1 of Table 1 of the Accomplishment Instructions of Boeing Alert Requirements Bulletin 747–31A2544 RB, dated March 31, 2020, do not apply.

(i) Alternative Methods of Compliance (AMOCs)

(1) The Manager, AIR–520 Continued Operational Safety 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 responsible Flight Standards 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 (j) 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 responsible Flight Standards 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 that has been authorized by the Manager, AIR–520 Continued Operational Safety 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.

(j) Related Information

For more information about this AD, contact Raja Vengadasalam, Aviation Safety Engineer, FAA, 2200 South 216th Street, Des Moines, WA 98198; telephone 206–231–3537; email raja.vengadasalam@faa.gov.

(k) Material Incorporated by Reference

(1) The Director of the Federal Register approved the incorporation by reference 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 Alert Requirements Bulletin 747–31A2544 RB, dated March 31, 2020.

(ii) [Reserved]

(3) For service information identified in this AD, contact Boeing Commercial Airplanes, Attention: Contractual & Data Services, 2600 Westminister Boulevard, MC 110–SK57, Seal Beach, CA 90740–

5600; telephone 562-797-1717; website *myboeingfleet.com*.

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

(5) You may view this material at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, visit www.archives.gov/federal-register/cfr/ibr-locations or email fr.inspection@nara.gov.

Issued on January 26, 2024.

Michael Linegang,

Acting Director, Compliance & Airworthiness Division, Aircraft Certification Service.

[[FR Doc. 2024-03082](#) Filed 2-14-24; 8:45 am]

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