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## **DEPARTMENT OF TRANSPORTATION**

### **Federal Aviation Administration**

#### **14 CFR Part 39**

**[Docket No. FAA-2019-0989; Product Identifier 2019-NM-097-AD; Amendment 39-21265; AD 2020-20-09]**

**RIN 2120-AA64**

### **Airworthiness Directives; The Boeing Company Airplanes**

**AGENCY:** Federal Aviation Administration (FAA), DOT.

**ACTION:** Final rule.

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**SUMMARY:** The FAA is superseding Airworthiness Directives (ADs) 2015-14-07, 2016-07-10, and 2016-24-09. AD 2015-14-07 applied to certain The Boeing Company Model 787-8 airplanes. AD 2016-07-10 and AD 2016-24-09 applied to all The Boeing Company Model 787-8 and 787-9 airplanes. ADs 2015-14-07, 2016-07-10, and 2016-24-09 required actions related to certain flight control module (FCM) software. This AD requires installing flight control electronics (FCE) common block point 5 (CBP5) software, which terminates the requirements of the ADs superseded by this AD. This AD was prompted by certain deficiencies in the FCM software, including a report of an unannounced dual symmetric inboard slat skew. The FAA is issuing this AD to address the unsafe condition on these products.

**DATES:** This AD is effective November 13, 2020.

The Director of the Federal Register approved the incorporation by reference of certain publications listed in this AD as of November 13, 2020.

The Director of the Federal Register approved the incorporation by reference of a certain other publication listed in this AD as of June 6, 2019 (84 FR 18707, May 2, 2019).

The Director of the Federal Register approved the incorporation by reference of a certain other publication listed in this AD as of December 2, 2016 (81 FR 86912, December 2, 2016).

The Director of the Federal Register approved the incorporation by reference of certain other publications listed in this AD as of August 20, 2015 (80 FR 42014, July 16, 2015).

**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, Airworthiness Products Section, Operational Safety 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-2019-0989.

## **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-2019-0989; 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.

**FOR FURTHER INFORMATION CONTACT:** Maureen G. Fallon, Aerospace Engineer, Systems and Equipment Section, FAA, Seattle ACO Branch, 2200 South 216th St., Des Moines, WA 98198; phone and fax: 206-231-3690; email: [maureen.g.fallon@faa.gov](mailto:maureen.g.fallon@faa.gov).

## **SUPPLEMENTARY INFORMATION:**

### **Discussion**

The FAA issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 to supersede the following ADs:

- AD 2015-14-07, Amendment 39-18205 (80 FR 42014, July 16, 2015) (“AD 2015-14-07”). AD 2015-14-07 applied to certain Model 787-8 airplanes.
- AD 2016-07-10, Amendment 39-18455 (81 FR 18741, April 1, 2016) (“AD 2016-07-10”). AD 2016-07-10 applied to all Model 787-8 and 787-9 airplanes.
- AD 2016-24-09, Amendment 39-18726 (81 FR 86912, December 2, 2016) (“AD 2016-24-09”). AD 2016-24-09 applied to all Model 787-8 and 787-9 airplanes.

The NPRM published in the Federal Register on January 2, 2020 (85 FR 23). The NPRM was prompted by deficiencies in the FCM software, including reports that, in certain weather conditions, erroneous low airspeed data may be displayed to the flightcrew before detection and annunciation via engine-indicating and crew alerting system (EICAS) messages, a report indicating that all three FCMs might simultaneously reset if continuously powered on for 22 days, and one report of unannounced dual symmetric inboard slat skew. The NPRM proposed to require installing FCE CBP5 software, which would also address the identified unsafe conditions and terminate the requirements of the ADs superseded by this AD. The FAA is issuing this AD to address deficiencies in the FCM software that could prevent continued safe flight and landing; to prevent unrealistic, sudden drops in displayed airspeed at high actual airspeed, which could lead to pilot control inputs that could exceed the structural capability of the airplane; to prevent simultaneous resets of all three FCMs, which could result in flight control surfaces not moving in response to flight crew inputs for a short time and consequent temporary loss of controllability; and to address potential unannounced dual symmetric inboard slat skew, which can result in adverse handling characteristics of the aircraft.

### **Changes Since the NPRM Was Issued**

The FAA has reviewed Boeing Alert Requirements Bulletin B787-81205-SB270044-00 RB, Issue 002, dated July 7, 2020 (the FAA referred to Boeing Alert Requirements Bulletin B787-81205-SB270044-00 RB, Issue 001, dated December 18, 2018, as an appropriate source of service information for accomplishing the actions specified in the NPRM) and has revised this AD to refer to Boeing Alert Requirements Bulletin B787-81205-SB270044-00 RB, Issue 002, dated July 7, 2020. This service information removes a certain airplane line number from the effectivity; otherwise, there

is no substantive change from Issue 001, dated December 18, 2018. The FAA has added paragraph (p) to this AD to provide credit for actions done prior to the effective date of this AD using Boeing Alert Requirements Bulletin B787-81205-SB270044-00 RB, Issue 001, dated December 18, 2018. Subsequent paragraphs have been redesignated accordingly.

### **Explanation of Concurrent Requirements**

This AD requires the accomplishment of Boeing Alert Service Bulletin B787-81205-SB270039-00, Issue 002, dated March 8, 2018, prior to or concurrently with the software installation specified in paragraph (n)(1) of this AD. AD 2019-08-05, Amendment 39-19626 (84 FR 18707, May 2, 2019) (“AD 2019-08-05”) also requires the accomplishment of Boeing Alert Service Bulletin B787-81205-SB270039-00, Issue 002, dated March 8, 2018, prior to or concurrently with the installation of hydraulic tubing and a pressure-operated check valve, which corrects a different unsafe condition; so the concurrent requirement is in both ADs. The compliance time for this AD is shorter than the compliance time for AD 2019-08-05.

### **Explanation of Changes to Paragraphs (n) and (o) of This AD**

The FAA revised paragraph (n)(3) of this AD and removed paragraph (n)(4) of this AD. This revision clarifies the compliance time for installation of a new displays and crew alerting (DCA) system and maintenance system (MS) software, clarifies “later-approved version” in regard to DCA MS software, and clarifies that this action applies only to certain airplanes. The FAA also revised the introductory text to paragraph (n) of this AD to clarify the applicable actions.

The FAA also revised paragraphs (o)(1) and (2) of this AD which clarify “later-approved version” in regard to CBP5 and DCA MS CBP4 software.

### **Explanation of Changes to Paragraph (q)(3) of This AD**

The FAA revised paragraph (q)(3) of this AD to clarify the terminating action. The intent of paragraph (q)(3) of this AD is to require the removal of figure 1 to paragraph (k) of this AD after the actions required by paragraph (n) or (o) of this AD have been accomplished on all affected airplanes in an operator's fleet. Accomplishment of these actions then terminates paragraph (k) of this AD for all affected airplanes in an operator's fleet.

### **Comments**

The FAA 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**

The Air Line Pilots Association, International (ALPA) stated its support for the NPRM. United Airlines indicated no objection to the NPRM.

### **Request To Clarify What Prompted the Unsafe Condition**

Boeing asked that a clarification of the number of occurrences of unannounced dual symmetric inboard slat skew events be added to the relevant sections in the proposed AD. Boeing stated that there has only been a single unannounced dual symmetric inboard slat skew event.

The FAA agrees with the commenter's request for clarification, because there has only been one occurrence of an unannounced dual symmetric inboard slat skew. The FAA has revised the SUMMARY, Discussion section, and paragraph (e) of this AD accordingly. However, the section

titled “Actions Since ADs 2015-14-07, 2016-07-10, and 2016-24-09 Were Issued,” which was included in the proposed AD, is not carried over in this final rule.

Boeing also asked that the FAA differentiate the number of occurrences of unannounced dual symmetric inboard slat skew from the outboard slat skew issue, which is the subject of AD 2019-20-07. Boeing noted that the potential for unannounced dual symmetric inboard slat skew, addressed by this AD, is not related to the outboard slat skew issue that is the subject of that AD.

Although the FAA agrees that the issues are not related, that clarification is not required in the content of this AD. Therefore, the FAA has not changed this AD in this regard.

### **Request To Allow Installation of Later-Approved Software Versions**

Boeing asked that the FAA allow installation of later-approved FCE software in lieu of the “FCM CBP5” software identified in Boeing Alert Requirements Bulletin B787-81205-SB270044-00 RB, Issue 001, dated December 18, 2018. Boeing stated that the use of “later-approved software” language was used in AD 2019-08-05, Amendment 39-19626 (84 FR 18707, May 2, 2019) (“AD 2019-08-05”) (referenced in the proposed AD), and will reduce the need for alternative method of compliance (AMOC) requests for future FCM software updates.

The FAA disagrees with the commenter's request because the Actions Required for Compliance section in Boeing Alert Requirements Bulletin B787-81205-SB270044-00 RB, Issue 001, dated December 18, 2018, already includes an allowance for installation of a later-approved software part number. Boeing Alert Requirements Bulletin B787-81205-SB270044-00 RB, Issue 002, dated July 7, 2020, also includes that allowance. Therefore, the FAA has not changed this AD in this regard.

### **Request To Identify Certain Required for Compliance (‘RC’) Actions**

Boeing asked that the FAA revise paragraph (n)(2) of the proposed AD to specify accomplishment of only the concurrent or prior actions identified as RC in the service bulletin. Boeing stated that installation of the “CMCF LDI DB” [central maintenance computer function (CMCF) loadable diagnostic information (LDI) database (DB)] software is not required to correct the unsafe condition. Boeing added that AD 2019-08-05 specifies the applicable service bulletin actions identified as RC.

The FAA agrees with the commenter's request, because installation of the CMCF LDI DB software is not required to correct the unsafe condition. If that software were cited in the requirements of this AD, any update to this software would require approval of an AMOC. The FAA has changed paragraph (n)(2) of this AD to specify doing only the applicable actions (including software installation) that are identified as RC.

### **Request To Clarify Intent of AD**

Boeing asked that the FAA change paragraph (e) of the proposed AD to clarify that the AD is also prompted by the need to provide terminating action for the three ADs that are superseded by this AD. Boeing stated that this change clarifies the intent of the AD.

The FAA agrees with the commenter's request to change the text in paragraph (e) of this AD. The FAA agrees that this AD is terminating action for the interim actions identified in two of the superseded ADs: 2016-07-10 and 2016-24-09. The superseding of those prior ADs implies that this AD mitigates the unsafe condition of those prior ADs. This AD was prompted by reports of an identified unsafe condition that this AD is intended to correct. The FAA has revised the SUMMARY, Discussion section, and paragraph (e) of this AD to include the unsafe conditions that prompted the superseded ADs, since this AD also addresses those unsafe conditions.

## **Request To Include Credit for Previously Accomplished Actions**

American Airlines (AA) asked for the addition of credit for previous software installations done using the following service information.

- Boeing Alert Service Bulletin B787-81205-SB270039-00, Issue 001, dated July 31, 2017.
- Boeing Alert Service Bulletin B787-81205-SB270039-00, Issue 001, dated July 31, 2017, in conjunction with Boeing Information Notice B787-A-27-00-0039-01A-931E-D, Issue 001, dated September 7, 2017.

AA stated that equivalent credit was granted in paragraphs (i)(3) and (4) of AD 2019-08-05 (which the FAA notes also requires the concurrent installation of certain software in accordance with Boeing Alert Service Bulletin B787-81205-SB270039-00, Issue 002, dated March 8, 2018), although AD 2019-08-05 is unrelated to the NPRM.

The FAA does not agree with the commenter's request. The latest version of the CMCF software specified in Boeing Alert Service Bulletin B787-81205-SB270039-00, Issue 002, dated March 8, 2018, must be installed concurrently with the FCE CBP5 software in order for the maintenance system to work properly. Therefore, the FAA has not changed this 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 AD with the changes described previously, and 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.

The FAA 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**

The FAA reviewed Boeing Alert Requirements Bulletin B787-81205-SB270044-00 RB, Issue 002, dated July 7, 2020. This service information describes procedures for installing FCE CBP5 software, and applicable concurrent requirements (installing certain software).

The FAA also reviewed Boeing Alert Service Bulletin B787-81205-SB310014, Issue 002, dated June 14, 2017. This service information describes procedures for installing new DCA system and MS software and doing a software check.

This AD also requires Boeing Alert Service Bulletin B787-81205-SB270039-00, Issue 002, dated March 8, 2018, which the Director of the Federal Register approved for incorporation by reference as of June 6, 2019 (84 FR 18707, May 2, 2019).

This AD also requires Boeing Alert Service Bulletin B787-81205-SB270040-00, Issue 001, dated November 25, 2016, which the Director of the Federal Register approved for incorporation by reference as of December 2, 2016 (81 FR 86912, December 2, 2016).

This AD also requires the following service information, which the Director of the Federal Register approved for incorporation by reference as of August 20, 2015 (80 FR 42014, July 16, 2015).

- Boeing Alert Service Bulletin B787-81205-SB270017-00, Issue 001, dated September 18, 2013.
- Boeing Alert Service Bulletin B787-81205-SB270020-00, Issue 002, dated February 12, 2015.
- Boeing Service Bulletin B787-81205-SB270023-00, Issue 001, dated July 24, 2014.

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 78 airplanes of U.S. registry.

The compliance time has passed for the retained requirements in this AD, so all affected airplanes should already be in compliance with those requirements. Therefore, this AD imposes no additional financial burden on any U.S. operator.

However, if a noncompliant airplane is imported and placed on the U.S. Register in the future, the FAA estimates the following costs to comply with the retained actions:

#### Estimated Costs for Retained Requirements

Action	Labor cost	Parts cost	Cost per product
Retained requirements of AD 2015-14-07 (11 airplanes)	4 work-hours × \$85 per hour = \$340	\$0	\$340
Retained requirements of AD 2016-07-10	1 work-hour × \$85 per hour = \$85	\$0	\$85
Retained requirements of AD 2016-24-09	1 work-hour × \$85 per hour = \$85	\$0	\$85

The FAA estimates the following costs to comply with the new requirements in this AD:

#### Estimated Costs for New Requirements

Action	Labor cost	Parts cost	Cost per product	Cost on U.S. operators
New software installation	2 work-hours × \$85 per hour = \$170	\$0	\$170	\$13,260

### 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 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:

- a. Removing Airworthiness Directive (AD) 2015-14-07, Amendment 39-18205 (80 FR 42014, July 16, 2015); AD 2016-07-10, Amendment 39-18455 (81 FR 18741, April 1, 2016); and AD 2016-24-09, Amendment 39-18726 (81 FR 86912, December 2, 2016); and
- b. Adding the following new AD:



**FAA**  
**Aviation Safety**

## **AIRWORTHINESS DIRECTIVE**

[www.faa.gov/aircraft/safety/alerts/](http://www.faa.gov/aircraft/safety/alerts/)  
[www.gpoaccess.gov/fr/advanced.html](http://www.gpoaccess.gov/fr/advanced.html)

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**2020-20-09 The Boeing Company:** Amendment 39-21265; Docket No. FAA-2019-0989; Product Identifier 2019-NM-097-AD.

### **(a) Effective Date**

This AD is effective November 13, 2020.

### **(b) Affected ADs**

This AD replaces the ADs identified in paragraphs (b)(1) through (3) of this AD.

(1) AD 2015-14-07, Amendment 39-18205 (80 FR 42014, July 16, 2015) (“AD 2015-14-07”).

(2) AD 2016-07-10, Amendment 39-18455 (81 FR 18741, April 1, 2016) (“AD 2016-07-10”).

(3) AD 2016-24-09, Amendment 39-18726 (81 FR 86912, December 2, 2016) (“AD 2016-24-09”).

### **(c) Applicability**

This AD applies to all The Boeing Company Model 787-8 and 787-9 airplanes, certificated in any category.

### **(d) Subject**

Air Transport Association (ATA) of America Code 27, Flight Controls.

### **(e) Unsafe Condition**

This AD was prompted by deficiencies in the FCM software, including reports that, in certain weather conditions, erroneous low airspeed data may be displayed to the flightcrew before detection and annunciation via engine-indicating and crew alerting system (EICAS) messages, a report indicating that all three FCMs might simultaneously reset if continuously powered on for 22 days, and one report of unannounced dual symmetric inboard slat skew. The FAA is issuing this AD to address deficiencies in the FCM software that could prevent continued safe flight and landing; to prevent unrealistic, sudden drops in displayed airspeed at high actual airspeed, which could lead to pilot control inputs that could exceed the structural capability of the airplane; to prevent simultaneous resets of all three FCMs, which could result in flight control surfaces not moving in response to flight crew inputs for a short time and consequent temporary loss of controllability; and to address potential unannounced dual symmetric inboard slat skew, which can result in adverse handling characteristics of the aircraft.

### **(f) Compliance**

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



**(g) Retained FCM Software Installation Requirement of AD 2015-14-07, With No Changes**

This paragraph restates the requirements of the introductory text to paragraph (g) and paragraphs (g)(1), (2), and (4) of AD 2015-14-07 (paragraph (g)(3) of AD 2015-14-07 is not retained in this AD), with no changes. For Model 787-8 airplanes identified in Boeing Alert Service Bulletin B787-81205-SB270020-00, Issue 002, dated February 12, 2015: Within 6 months after August 20, 2015 (the effective date of AD 2015-14-07), do one of the actions specified in paragraphs (g)(1) through (3) of this AD.

(1) Use the onboard data load function (ODLF) to install FCM Block Point 3 software (including FCM operational program software (OPS), FCM loadable diagnostic information (LDI) database (DB) software, and FCM air data reference function (ADRF) DB software), in accordance with the Accomplishment Instructions of Boeing Alert Service Bulletin B787-81205-SB270020-00, Issue 002, dated February 12, 2015.

(2) Use the ODLF to install FCM Block Point 4 software (including FCM OPS, FCM LDI DB software, FCM ADRF DB software, and central maintenance computer function (CMCF) LDI DB software), in accordance with the Accomplishment Instructions of Boeing Service Bulletin B787-81205-SB270023-00, Issue 001, dated July 24, 2014.

(3) Install any later FAA-approved FCM software version using a method approved in accordance with the procedures specified in paragraph (s) of this AD.

**(h) Retained Concurrent Requirements of AD 2015-14-07, With No Changes**

This paragraph restates the requirements of paragraph (h) of AD 2015-14-07, with no changes. For Group 1 airplanes, as identified in Boeing Alert Service Bulletin B787-81205-SB270020-00, Issue 002, dated February 12, 2015: Prior to or concurrently with accomplishing the actions required by paragraph (g) of this AD, use the ODLF to install FCM OPS, FCM LDI DB, and CMCF LDI DB software, or at a minimum install the FCM LDI DB and CMCF LDI DB software, in accordance with the Accomplishment Instructions of Boeing Alert Service Bulletin B787-81205-SB270017-00, Issue 001, dated September 18, 2013.

**(i) Retained Parts Installation Prohibition of AD 2015-14-07, With No Changes**

This paragraph restates the provisions of paragraph (i) of AD 2015-14-07, with no changes. After installation of the software specified in paragraphs (g) and (h) of this AD, no person may install any previous versions of the FCM OPS, FCM LDI DB, FCM ADRF DB, or CMCF LDI DB software on any airplane.

**(j) Retained Credit for Certain Previous Actions in AD 2015-14-07, With No Changes**

This paragraph restates the provisions of paragraph (j) of AD 2015-14-07, with no changes. This paragraph provides credit for the actions required by paragraph (g) of this AD, if those actions were performed before August 20, 2015 (the effective date of AD 2015-14-07), using Boeing Alert Service Bulletin B787-81205-SB270020-00, Issue 001, dated February 6, 2014.

**(k) Retained Airplane Flight Manual (AFM) Revision of AD 2016-07-10, With No Changes**

This paragraph restates the requirements of paragraph (g) of AD 2016-07-10, with no changes. Within 15 days after April 14, 2016 (the effective date of AD 2016-07-10), revise the applicable existing Boeing 787 AFM to add a “Non-normal Procedure” that includes the information in figure 1 to paragraph (k) of this AD. This may be done by inserting a copy of this AD into the existing AFM.

## Figure 1 to paragraph (k)

### **Airspeed Drop**

In the event of a sudden, unrealistic drop in indicated airspeed, do not apply large, abrupt control column inputs. Fly the airplane with normal pitch and power settings. If manual flight is needed, disconnect the autopilot prior to making manual flight control inputs.

### **(l) Retained FCM Reset Requirement of AD 2016-24-09, With No Changes**

This paragraph restates the requirements of paragraph (g) of AD 2016-24-09, with no changes. Within 7 days after December 2, 2016 (the effective date of AD 2016-24-09), do the actions specified in paragraph (l)(1) or (2) of this AD. Repeat the action specified in paragraph (l)(1) or (2) of this AD thereafter at intervals not to exceed 21 days.

(1) Cycle the airplane electrical power, in accordance with “Option 1” of the Accomplishment Instructions of Boeing Alert Service Bulletin B787-81205-SB270040-00, Issue 001, dated November 25, 2016.

(2) Cycle power to the left, center, and right FCMs, in accordance with “Option 2” of the Accomplishment Instructions of Boeing Alert Service Bulletin B787-81205-SB270040-00, Issue 001, dated November 25, 2016.

### **(m) Retained Credit for Previous Actions in AD 2016-24-09, With No Changes**

This paragraph restates the provisions of paragraph (h) of AD 2016-24-09, with no changes. This paragraph provides credit for the actions specified in paragraphs (l)(1) and (2) of this AD, if those actions were performed before December 2, 2016 (the effective date of AD 2016-24-09), using one of the service information documents specified in paragraphs (m)(1) through (3) of this AD.

(1) Boeing Multi-Operator Message MOM-MOM-16-0711-01B, dated October 21, 2016.

(2) Boeing Multi-Operator Message MOM-MOM-16-0711-01B(R1), dated November 17, 2016.

(3) Boeing Multi-Operator Message MOM-MOM-16-0711-01B(R2), dated November 17, 2016.

### **(n) New Requirement for Software Installation**

For airplanes identified in Boeing Alert Requirements Bulletin B787-81205-SB270044-00 RB, Issue 002, dated July 7, 2020: Do the actions specified in paragraphs (n)(1) through (3) of this AD.

(1) Within 6 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 B787-81205-SB270044-00 RB, Issue 002, dated July 7, 2020.

Note 1 to paragraphs (n)(1) and (o)(1): Guidance for accomplishing the actions required by paragraphs (n)(1) and (o)(1) of this AD can be found in Boeing Alert Service Bulletin B787-81205-SB270044-00, Issue 003, dated July 7, 2020, which is referred to in Boeing Alert Requirements Bulletin B787-81205-SB270044-00 RB, Issue 002, dated July 7, 2020.

(2) Before or concurrently with accomplishment of the actions specified in paragraph (n)(1) of this AD: Do all applicable actions (including software installation on the left and right flight control modules (FCMs)) identified as RC in and, in accordance with the Accomplishment Instructions of Boeing Alert Service Bulletin B787-81205-SB270039-00, Issue 002, dated March 8, 2018.

Note 2 to paragraph (n)(2): The concurrent requirements specified in paragraph (n)(2) of this AD are also concurrent requirements for the actions required by paragraph (g)(2) of AD 2019-08-05, Amendment 39-19626 (84 FR 18707, May 2, 2019) (“AD 2019-08-05”).

(3) Within 6 months after the effective date of this AD, identify the version of the displays and crew alerting (DCA) system and maintenance system (MS) software installed. If the installed version is not DCA MS CBP4 or a later-approved version of DCA MS software, within 6 months after the effective date of this AD, install a new DCA system and MS software and do a software check, in accordance with the Accomplishment Instructions of Boeing Alert Service Bulletin B787-81205-SB310014, Issue 002, dated June 14, 2017. Later-approved software versions are only those Boeing software versions that are approved as a replacement for the applicable software, and are approved as part of the type design by the FAA or The Boeing Company Organization Designation Authorization (ODA) after issuance of Boeing Alert Service Bulletin B787-81205-SB310014, Issue 002, dated June 14, 2017.

#### **(o) Software Version Identification**

For airplanes not identified in Boeing Alert Requirements Bulletin B787-81205-SB270044-00 RB, Issue 002, dated July 7, 2020, that have an original airworthiness certificate or original export certificate of airworthiness issued on or before the effective date of this AD: Within 6 months after the effective date of this AD, do the actions specified in paragraphs (o)(1) and (2) of this AD.

(1) Identify the version of the flight control electronics (FCE) common block point (CBP) software installed. If the installed version is not CBP5 or later-approved version: Within 6 months after the effective date of this AD, install CBP5 or later-approved version, in accordance with the Accomplishment Instructions of Boeing Alert Requirements Bulletin B787-81205-SB270044-00 RB, Issue 002, dated July 7, 2020. Later-approved software versions are only those Boeing software versions that are approved as a replacement for the applicable software, and are approved as part of the type design by the FAA or The Boeing Company ODA after issuance of Boeing Alert Requirements Bulletin B787-81205-SB270044-00 RB, Issue 002, dated July 7, 2020. A review of airplane maintenance records is acceptable in lieu of this identification requirement, if the software version can be conclusively determined from that review.

(2) Identify the version of the DCA system and MS software installed. If the installed version is not DCA MS CBP4 or a later-approved version of DCA MS software: Within 6 months after the effective date of this AD, install a new DCA system and MS software and do a software check, in accordance with the Accomplishment Instructions of Boeing Alert Service Bulletin B787-81205-SB310014, Issue 002, dated June 14, 2017. Later-approved software versions are only those Boeing software versions that are approved as a replacement for the applicable software, and are approved as part of the type design by the FAA or The Boeing Company ODA after issuance of Boeing Alert Service Bulletin B787-81205-SB310014, Issue 002, dated June 14, 2017.

#### **(p) Credit for Previous Actions**

This paragraph provides credit for actions specified in paragraphs (n)(1) and (o)(1) of this AD, if those actions were performed before the effective date of this AD using Boeing Alert Requirements Bulletin B787-81205-SB270044-00 RB, Issue 001, dated December 18, 2018.

#### **(q) Terminating Action for Certain Requirements of This AD**

(1) Except as specified in paragraph (q)(2) of this AD: Accomplishment of the actions required by paragraph (n) or (o) of this AD, as applicable, terminates the requirements of paragraphs (g) through (m) of this AD.

(2) Accomplishment of the actions required by paragraph (n) or (o) of this AD, as applicable, terminates the requirements of paragraph (k) of this AD for that airplane only.

(3) Accomplishment of the actions required by paragraph (n) or (o) of this AD, as applicable, on all affected airplanes in an operator's fleet, and subsequent removal of figure 1 to paragraph (k) of this AD from the existing AFM, terminates the requirements of paragraph (k) of this AD for the fleet. The removal must be done no later than 6 months after the effective date of this AD.

#### **(r) Parts Installation Prohibition**

As of the effective date of this AD, installation on any airplane of FCE CBP software with a version prior to CBP5 is prohibited.

#### **(s) 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 (t)(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.

(4) AMOCs approved previously for AD 2015-14-07, AD 2016-07-10, and AD 2016-24-09, are approved as AMOCs for the corresponding provisions of paragraphs (g) through (l) of this AD.

#### **(t) Related Information**

(1) For more information about this AD, contact Maureen G. Fallon, Aerospace Engineer, Systems and Equipment Section, FAA, Seattle ACO Branch, 2200 South 216th St., Des Moines, WA 98198; phone and fax: 206-231-3690; email: maureen.g.fallon@faa.gov.

(2) Service information identified in this AD that is not incorporated by reference is available at the addresses specified in paragraphs (u)(7) and (8) of this AD.

#### **(u) 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 November 13, 2020.

(i) Boeing Alert Requirements Bulletin B787-81205-SB270044-00 RB, Issue 002, dated July 7, 2020.

(ii) Boeing Alert Service Bulletin B787-81205-SB310014, Issue 002, dated June 14, 2017.

(4) The following service information was approved for IBR on June 6, 2019 (84 FR 18707, May 2, 2019).

(i) Boeing Alert Service Bulletin B787-81205-SB270039-00, Issue 002, dated March 8, 2018.

(ii) [Reserved]

(5) The following service information was approved for IBR on December 2, 2016 (81 FR 86912, December 2, 2016).

(i) Boeing Alert Service Bulletin B787-81205-SB270040-00, Issue 001, dated November 25, 2016.

(ii) [Reserved]

(6) The following service information was approved for IBR on August 20, 2015 (80 FR 42014, July 16, 2015).

(i) Boeing Alert Service Bulletin B787-81205-SB270017-00, Issue 001, dated September 18, 2013.

(ii) Boeing Alert Service Bulletin B787-81205-SB270020-00, Issue 002, dated February 12, 2015.

(iii) Boeing Service Bulletin B787-81205-SB270023-00, Issue 001, dated July 24, 2014.

(7) 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>.

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

(9) 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](mailto:fedreg.legal@nara.gov), or go to: <https://www.archives.gov/federal-register/cfr/ibr-locations.html>.

Issued on September 23, 2020.

Lance T. Gant,

Director, Compliance & Airworthiness Division, Aircraft Certification Service.

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