



[4910-13-P]

**DEPARTMENT OF TRANSPORTATION**

**Federal Aviation Administration**

**14 CFR Part 39**

**[Docket No. FAA-2013-0420; Directorate Identifier 2011-NM-241-AD; Amendment 39-17685; AD 2013-24-11]**

**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 747-100, 747-100B, 747-100B SUD, 747-200B, 747-200C, 747-200F, 747-300, 747-400, 747-400D, 747-400F, 747SR, and 747SP series airplanes. This AD was prompted by a report of a disbanded doubler and a skin crack in section 41 of the fuselage, and multiple reports of cracked or missing fastener heads. This AD requires repetitive inspections for cracking of the fuselage skin, discrepant fasteners, and for disbonds at the doublers; and related investigative and corrective actions if necessary. For certain airplanes, this AD also requires a terminating repair for repair doublers. We are issuing this AD to prevent rapid decompression and loss of structural integrity of the airplane due to such disbonding and subsequent cracking of the skin panels.

**DATES:** This AD is effective [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

The Director of the Federal Register approved the incorporation by reference of a certain publication listed in this AD as of [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

**ADDRESSES:** 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>. 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.

**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:** Nathan Weigand, Aerospace Engineer, Airframe Branch, ANM-120S, FAA, Seattle Aircraft Certification Office (ACO), 1601 Lind Avenue SW., Renton, WA 98057-3356; phone: 425-917-6428; fax: 425-917-6590; email: [Nathan.P.Weigand@faa.gov](mailto:Nathan.P.Weigand@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 May 16, 2013 (78 FR 28767). The NPRM proposed to require repetitive inspections for cracking of the fuselage skin, discrepant fasteners, and for disbonds at the doublers; and related investigative and corrective actions if necessary.

For certain airplanes, the NPRM also proposed to require a terminating repair for repair doublers.

### **Comments**

We gave the public the opportunity to participate in developing this AD. The following presents the comments received on the proposal (78 FR 28767, May 16, 2013) and the FAA's response to each comment.

### **Request to Add Terminating Action for Other AD Actions**

Boeing requested that we include the requirements of paragraph (h) of AD 2006-24-05, Amendment 39-14834 (76 FR 68434, November 27, 2006), in paragraph (k)(3) of the NPRM (78 FR 28767, May 16, 2013), which specifies that accomplishing the required actions proposed by the NPRM terminates certain requirements of AD 2006-24-05. Boeing stated that including the requirements of paragraph (h) of AD 2006-24-05 in paragraph (k) of the NPRM would then be consistent with paragraph (k)(2) of the NPRM that includes paragraph (l) of AD 2006-24-02.

We do not agree with the commenter's request. Boeing Service Bulletin 747-53A2747, Revision 2, dated February 22, 2012, which is the referenced service information in this final rule, is an alternative method of compliance (AMOC) for the three ADs specified in paragraph (k) of this final rule for only the corresponding paragraphs of those ADs that are listed in paragraphs (k)(1), (k)(2), and (k)(3) of this final rule. Boeing Service Bulletin 747-53A2747, Revision 2, dated February 22, 2012, does not list paragraph (h) of AD 2006-24-05, Amendment 39-14834 (76 FR 68434, November 27, 2006), as one of the paragraphs for which the service information is a method of compliance. We have not changed this final rule in this regard.

### **Request to Revise the Compliance Time**

Delta Airlines (DAL) requested that we revise the compliance time to make it more feasible for an operator to accomplish the actions in the NPRM (78 FR 28767, May 16, 2013). DAL stated that certain affected DAL airplanes will require inspections within 150 flight cycles after the effective date of the final rule. DAL also stated that current usage of the affected DAL airplanes is approximately 500 to 540 flight cycles per year and, therefore, the 150-flight-cycle compliance time would require “special visits to complete.”

We do not agree with the commenter’s request to extend the compliance time. In developing an appropriate compliance time for this final rule, we considered the urgency associated with the identified unsafe condition and the manufacturer’s recommendations. Disbonded doublers, skin cracking, and cracked or missing fastener heads are a significant safety issue, and we have determined that the inspection compliance times are warranted. The commenter provided no technical justification for revising the inspection thresholds. However, under the provisions of paragraph (l) of this final rule, we will consider requests for approval of an extension of the compliance time if sufficient data are submitted to substantiate that the extension would provide an acceptable level of safety. We have not changed this final rule in this regard.

### **Request to Expand Work-hour Break-outs**

DAL requested that we break out the work-hours identified in paragraph G. (Manpower) of Boeing Service Bulletin 747-53A2747, Revision 2, dated February 22, 2012, by zones and conditions that will ultimately assist the operators in scheduling each unique condition. DAL stated that the compliance times in paragraph 1.E., “Compliance,” of Boeing Service Bulletin 747-53A2747, Revision 2, dated February 22, 2012, are broken out by Zone 1 and Zone 2, and can occur at different times depending on each resulting condition.

We do not agree with the commenter's request. The stated costs in ADs must address all actions mandated by the AD. The hours described in paragraph G. (Manpower) of Boeing Service Bulletin 747-53A2747, Revision 2, dated February 22, 2012, are an estimate of the total hours to perform the actions. This final rule includes the work-hours specified in Boeing Service Bulletin 747-53A2747, Revision 2, dated February 22, 2012. These actions are not intended to be broken out to a task-by-task level. We have not changed this final rule in this regard.

**Request to Revise AD 2006-24-02, Amendment 39-14831 (71 FR 67445, November 22, 2006)**

DAL requested that we support an expedited revision to AD 2006-24-02, Amendment 39-14831 (71 FR 67445, November 22, 2006), prior to issuance of this final rule. DAL stated that according to a recent customer support presentation of Boeing Service Bulletin 747-53A2747, Revision 2, dated February 22, 2012, Boeing is currently working on a revision to this service bulletin, which may relax some compliance times.

We do not agree with the commenter's request. We have not received Revision 3 to Boeing Service Bulletin 747-53A2747 to review. We have determined that this final rule must not be delayed for issuance of a new revision to Boeing Service Bulletin 747-53A2747, Revision 2, dated February 22, 2012, since we have determined that an unsafe condition exists and that inspections in this final rule must be conducted to ensure continued safety. When Revision 3 of Boeing Service Bulletin 747-53A2747 is submitted, we will review and evaluate it as an alternative method of compliance to this final rule and determine if additional rulemaking is necessary. We have not changed this final rule 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 change described previously except for minor editorial changes. We have determined that these minor changes:

- Are consistent with the intent that was proposed in the NPRM (78 FR 28767, May 16, 2013) for correcting the unsafe condition; and
- Do not add any additional burden upon the public than was already proposed in the NPRM (78 FR 28767, May 16, 2013).

## Costs of Compliance

We estimate that this AD affects 98 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
Inspections	878 work-hours X \$85 per hour = \$74,630 per inspection cycle	\$0	\$74,630 per inspection cycle	\$7,313,740 per inspection cycle

We have received no definitive data that would enable us to provide cost estimates for the on-condition actions specified in this AD.

## 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):

**2013-24-11 The Boeing Company:** Amendment 39-17685; Docket No. FAA-2013-0420; Directorate Identifier 2011-NM-241-AD.

**(a) Effective Date**

This AD is effective [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

**(b) Affected ADs**

This AD affects AD 2006-20-02, Amendment 39-14771 (71 FR 56861, September 28, 2006); AD 2006-24-02, Amendment 39-14831 (71 FR 67445, November 22, 2006); and AD 2006-24-05, Amendment 39-14834 (71 FR 68434, November 27, 2006).

**(c) Applicability**

This AD applies to The Boeing Company Model 747-100, 747-100B, 747-100B SUD, 747-200B, 747-200C, 747-200F, 747-300, 747-400, 747-400D, 747-400F, 747SR, and 747SP series airplanes; certificated in any category; as identified in Boeing Service Bulletin 747-53A2747, Revision 2, dated February 22, 2012.

**(d) Subject**

Joint Aircraft System Component (JASC)/Air Transport Association (ATA) of America Code 53, Fuselage.

**(e) Unsafe Condition**

This AD was prompted by a disbonded doubler and a skin crack in section 41 of the fuselage, and multiple reports of cracked or missing fastener heads. We are issuing this AD to prevent rapid decompression and loss of structural integrity of the airplane due to such disbonding and subsequent cracking of the skin panels.

**(f) Compliance**

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

**(g) Repetitive Skin Panel, Fastener, and Doublers Inspections**

At the applicable time specified in paragraph 1.E., “Compliance,” of Boeing Service Bulletin 747-53A2747, Revision 2, dated February 22, 2012, except as required by paragraphs (i)(1) and (i)(3) of this AD: Do the applicable inspections (including detailed, high frequency eddy current (HFEC), and low frequency eddy current (LFEC)) for any cracking of the fuselage skin, for discrepant fasteners, and for disbonds at the doublers; and do all applicable related investigative and corrective actions in accordance with the Accomplishment Instructions of Boeing Service Bulletin 747-53A2747, Revision 2, dated February 22, 2012, except as provided by paragraph (i)(2) of this AD. Repeat the applicable inspections thereafter at intervals not to exceed those specified in paragraph 1.E., “Compliance,” of Boeing Service Bulletin 747-53A2747, Revision 2, dated February 22, 2012. Do all applicable related investigative and corrective actions at the applicable time specified in paragraph 1.E., “Compliance,” of Boeing Service Bulletin 747-53A2747, Revision 2, dated February 22, 2012. Options provided in Boeing Service Bulletin 747-53A2747, Revision 2, dated February 22, 2011, for accomplishing the disbond inspection are acceptable for the corresponding requirements of this paragraph provided that the inspection is done at the applicable times in paragraph 1.E., “Compliance,” of Boeing Service Bulletin 747-53A2747, Revision 2, dated February 22, 2011.

(1) Replacing a skin panel, in accordance with the Accomplishment Instructions of Boeing Service Bulletin 747-53A2747, Revision 2, dated February 22, 2012, is an acceptable alternative to doing the structural repair manual (SRM) skin panel repairs and the repetitive skin panel inspections specified in tables 1, 2, and 3 of paragraph 1.E.,

“Compliance,” of Boeing Service Bulletin 747-53A2747, Revision 2, dated February 22, 2012, for only the skin panel that has been replaced.

(2) Accomplishment of the terminating repair identified in tables 4 and 5 of paragraph 1.E., “Compliance,” of Boeing Service Bulletin 747-53A2747, Revision 2, dated February 22, 2012, terminates the repetitive inspections identified in tables 4 and 5 of paragraph 1.E., “Compliance,” of Boeing Service Bulletin 747-53A2747, Revision 2, dated February 22, 2012, for only the area on which the terminating repair has been done.

**(h) Terminating Action**

For airplanes identified in tables 4 and 5 of paragraph 1.E., “Compliance,” of Boeing Service Bulletin 747-53A2747, Revision 2, dated February 22, 2012: At the applicable compliance time specified in paragraph 1.E., “Compliance,” of Boeing Service Bulletin 747-53A2747, Revision 2, dated February 22, 2012, do the terminating action for the repair doubler, including doing an open hole HFEC inspection for skin cracks at the fastener holes common to the inspection area and an inspection for disbond of the internal doubler; and as applicable, replacing the existing external repair doubler with a new extended external repair doubler, in accordance with the Accomplishment Instructions of Boeing Service Bulletin 747-53A2747, Revision 2, dated February 22, 2012, except as provided by paragraph (i)(2) of this AD. Accomplishment of the terminating action identified in tables 4 and 5 of paragraph 1.E., “Compliance,” of Boeing Service Bulletin 747-53A2747, Revision 2, dated February 22, 2012, terminates the repetitive inspections identified in tables 4 and 5 of paragraph 1.E., “Compliance,” of Boeing Service Bulletin 747-53A2747, Revision 2, dated February 22, 2012, for only areas on which the terminating action has been done.

**(i) Exceptions to Certain Service Information Instructions**

This paragraph specifies exceptions to certain instructions in Boeing Service Bulletin 747-53A2747, Revision 2, dated February 22, 2012.

(1) Where Boeing Service Bulletin 747-53A2747, Revision 2, dated February 22, 2012, specifies a compliance time after the “original issue date of this service bulletin,” this AD requires compliance within the specified compliance time after the effective date of this AD.

(2) Where Boeing Service Bulletin 747-53A2747, Revision 2, dated February 22, 2012, specifies to contact Boeing for special repair instructions, this AD requires using a method approved in accordance with the procedures specified in paragraph (l) of this AD.

(3) The Condition column of paragraph 1.E., “Compliance,” of Boeing Service Bulletin 747-53A2747, Revision 2, dated February 22, 2012, refers to certain conditions “as of the original issue date of this service bulletin.” This AD, however, applies to the airplanes with the specified condition as of the effective date of this AD.

**(j) Credit for Previous Actions**

This paragraph provides credit for the actions required by paragraphs (g) and (h) of this AD, if those actions were performed before the effective date of this AD using Boeing Service Bulletin 747-53A2747, Revision 1, dated October 12, 2011, which is not incorporated by reference in this AD.

**(k) Terminating Action for Other ADs**

(1) Accomplishing the requirements of this AD terminates the requirements of paragraphs (f), (g), and (h) of AD 2006-20-02, Amendment 39-14771 (71 FR 56861, September 28, 2006).

(2) Accomplishing the requirements of this AD terminates the requirements of paragraphs (f), (k), and (l) of AD 2006-24-02, Amendment 39-14831 (71 FR 67445, November 22, 2006).

(3) Accomplishing the requirements of this AD terminates the requirements of paragraphs (f) and (i) of AD 2006-24-05, Amendment 39-14834 (71 FR 68434, November 27, 2006).

**(l) 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 (m)(1) of this AD. Information may be emailed to: [9-ANM-Seattle-ACO-AMOC-Requests@faa.gov](mailto: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 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. For a repair method to be approved, the repair 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 Nathan Weigand, Aerospace Engineer, Airframe Branch, ANM-120S, FAA, Seattle Aircraft Certification Office (ACO), 1601 Lind Avenue SW., Renton, WA 98057-3356; phone: 425-917-6428; fax: 425-917-6590; email: [Nathan.P.Weigand@faa.gov](mailto:Nathan.P.Weigand@faa.gov).

(2) Service information identified in this AD that is not incorporated by reference in this AD may be obtained at the addresses specified in paragraphs (n)(3) and (n)(4) of this AD.

**(n) 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 Service Bulletin 747-53A2747, Revision 2, dated February 22, 2012.

(ii) Reserved.

(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, WA 98124-2207; telephone 206-544-5000, extension 1; fax 206-766-5680; Internet <https://www.myboeingfleet.com>.

(4) You may review copies of the 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.

(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, WA, on November 15, 2013.

Jeffrey E. Duven,  
Acting Manager,

Transport Airplane Directorate,  
Aircraft Certification Service.

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