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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. 2001-NM-181-AD; Amendment 39-14046; AD 2005-07-21]

RIN 2120-AA64

Airworthiness Directives; Boeing Model 747-200F and -200C Series Airplanes

AGENCY: Federal Aviation Administration, Department of Transportation (DOT).

ACTION: Final rule.

SUMMARY: This amendment supersedes an existing airworthiness directive (AD), applicable to all Boeing Model 747-200F and -200C series airplanes, that currently requires repetitive detailed inspections or a one-time open-hole high frequency eddy current inspection to detect cracking of certain areas of the upper deck floor beams, and corrective actions if necessary. This amendment requires new one-time inspections for cracking of the web, upper chord, and strap of the upper deck floor beams. This action also requires modifying or repairing the upper deck floor beams, as applicable, which eventually necessitates accomplishment of new repetitive inspections for cracking of the upper deck floor beams. The actions specified by this AD are intended to prevent fatigue cracks in the upper chord and web of upper deck floor beams and the resultant failure of such floor beams. Failure of a floor beam could result in damage to critical flight control cables and wire bundles that pass through the floor beam, and consequent loss of controllability of the airplane. Failure of the floor beam also could result in the failure of the adjacent fuselage frames and skin, and consequent rapid decompression of the airplane. This action is intended to address the identified unsafe condition.

DATES: Effective May 16, 2005.

The incorporation by reference of certain publications listed in the regulations is approved by the Director of the Federal Register as of May 16, 2005.

The incorporation by reference of Boeing Alert Service Bulletin 747-53A2420, dated March 26, 1998, as listed in the regulations, was approved previously by the Director of the Federal Register as of May 11, 1998 (63 FR 20311, April 24, 1998).

ADDRESSES: The service information referenced in this AD may be obtained from Boeing Commercial Airplanes, P.O. Box 3707, Seattle, Washington 98124-2207. This information may be examined at the Federal Aviation Administration (FAA), Transport Airplane Directorate, Rules Docket, 1601 Lind Avenue, SW., Renton, Washington.

FOR FURTHER INFORMATION CONTACT: Ivan Li, Aerospace Engineer, Airframe Branch, ANM-120S, FAA, Seattle Aircraft Certification Office, 1601 Lind Avenue, SW., Renton, Washington 98055-4056; telephone (425) 917-6437; fax (425) 917-6590.

SUPPLEMENTARY INFORMATION: A proposal to amend part 39 of the Federal Aviation Regulations (14 CFR part 39) by superseding AD 98-09-17, amendment 39-10498 (63 FR 20311, April 24, 1998); which is applicable to all Boeing Model 747-200F and -200C series airplanes; was published in the Federal Register on June 18, 2003 (68 FR 36510). The action proposed to continue to require repetitive detailed inspections or a one-time open-hole high frequency eddy current inspection to detect cracking of certain areas of the upper deck floor beams, and corrective actions if necessary. The action also proposed to require new one-time inspections for cracking of the web, upper chord, and strap of the upper deck floor beams. The action also proposed to require modification or repair of the upper deck floor beams, as applicable, which would eventually necessitate accomplishment of new repetitive inspections for cracking of the upper deck floor beams.

Comments

Interested persons have been afforded an opportunity to participate in the making of this amendment. The FAA has duly considered the comments received.

Request To Allow Modification/Repair Per Service Bulletin

One commenter, the airplane manufacturer, requests that we revise paragraphs (g) and (h)(2) of the proposed AD to allow modification and permanent repairs to be accomplished in accordance with Boeing Alert Service Bulletin 747-53A2429, dated March 22, 2001. The same commenter also requests that Notes 4 and 5 be removed from the proposed AD. (Those notes state that the procedures for the modification and permanent repair specified in Boeing Alert Service Bulletin 747-53A2429 do not provide an adequate level of safety.) The commenter states that the procedures in the service bulletin for the modification and permanent repair are adequate. The commenter acknowledges, however, that analysis has shown that additional inspection locations should be added to the post-modification/repair program. The commenter notes that the service bulletin will be revised in the future to include additional inspection procedures.

We partially concur with the commenter's request. As we explain in the "Differences Between Proposed AD and Service Bulletins" section of the proposed AD, the procedures for the modification and permanent repair stated in the original issue of Boeing Alert Service Bulletin 747-53A2429 do not provide an adequate level of safety. This determination is based on reports that cracking has been found on airplanes that have a modification similar to that described in Boeing Alert Service Bulletin 747-53A2429. However, we do agree that the procedures for the modification and permanent repair specified in Boeing Alert Service Bulletin 747-53A2429 would be acceptable if additional post-modification/repair inspections are performed in accordance with a method that we approve. Accordingly, we have made the following changes to this final rule:

- We revised paragraphs (g) and (h) to allow two options for compliance.
- Option 1 in each paragraph allows the modification and permanent repairs to be accomplished in accordance with a method approved by the Manager, Seattle Aircraft Certification Office (ACO), or by an Authorized Representative for the Boeing Delegation Option Authorization (DOA) organization who has been authorized by the Manager, Seattle ACO to make those findings. This option provides an opportunity to have approved a modification or repair that is durable enough to not need post-modification/repair inspections.
- Option 2 in each paragraph allows the modification and permanent repairs to be accomplished in accordance with the service bulletin. If this option is chosen, post-modification/repair inspections are required.

- We revised paragraph (i) to specify that certain airplanes on which a repair in accordance with paragraph (c) of this AD was accomplished before the effective date of this AD are subject to additional inspection, modification, and/or repair requirements, as applicable. (Paragraph (i) of the proposed AD specified that airplanes on which the modification or permanent repair specified in Boeing Alert Service Bulletin 747-53A2429 was accomplished before the effective date of this AD would also be subject to these additional inspection, modification, and/or repair requirements. These airplanes are now subject to paragraph (k) of this AD instead.)

- We revised paragraph (j) to clarify that the post-modification/repair inspections in that paragraph apply to airplanes modified/repared in accordance with a method approved or by an Authorized Representative for the Boeing DOA organization.

- We added paragraph (k) to require post-modification/repair inspections in accordance with a method that we approve for airplanes on which the modification or permanent repair is accomplished in accordance with the service bulletin.

- We removed Notes 4 and 5 of the proposed AD from this final rule.

We have coordinated this issue with Boeing and it concurs in this approach. We have further confirmed that Boeing intends to add acceptable instructions for the post-modification/repair inspections in a future revision of the service bulletin. Once Boeing has issued, and we have reviewed and approved, a revision to the service bulletin, we may consider approving that service bulletin as an alternative method of compliance (AMOC) with the corresponding requirements of this AD.

Request To Allow Repairs Per Paragraph (h)

The same commenter requests that we revise paragraph (c) of the proposed AD to allow repairs of any cracking found during inspections in accordance with paragraph (a) or (b) of the proposed AD to be accomplished in accordance with paragraph (h) of the proposed AD. The commenter states that this should be acceptable because paragraph (h) of the proposed AD defines FAA-approved time-limited and permanent repairs.

We concur. Time-limited repairs in accordance with paragraph (h)(1) of this AD, or permanent repairs in accordance with paragraph (h)(2) or (h)(3) of this AD, are acceptable for repairing cracks found during the inspections required by paragraph (a) or (b) of this AD. We have revised paragraph (c) to refer to paragraph (h) of this AD. Also, we have revised paragraph (h) of this AD to state that accomplishment of paragraph (h)(1), (h)(2), or (h)(3) of this AD is acceptable for any crack found during any inspection required by paragraph (a), (b), or (e) of this AD.

Request To Omit Inspections for Certain Airplanes Modified/Repaired Previously

The same commenter requests that we revise paragraph (i) of the proposed AD to state that certain airplanes that have been modified or repaired previously do not require action within 5,000 flight cycles after accomplishment of the modification or repair. The commenter states that some upper deck floor beam repairs designed by Boeing prior to the release of Boeing Service Bulletin 747-53A2429 were consistent with the specifications of the modification/permanent repair in that service bulletin. The commenter states that these repairs may not need action within 5,000 flight cycles except for post-modification/repair inspections. A second commenter similarly requests that we reconsider the requirement to inspect (and accomplish any necessary corrective action) within 5,000 flight cycles after accomplishment of the modification or permanent repair. The second commenter justifies its request by noting that the modification is intended to improve the fatigue resistance of the modified floor beam.

We partially concur with the commenters' request. As explained previously, we have revised paragraph (i) in this final rule to remove airplanes on which a modification/permanent repair in accordance with Boeing Service Bulletin 747-53A2429 was accomplished before the effective date of this AD. These airplanes are now subject to repetitive inspections in accordance with paragraph (k) of

this AD. However, paragraph (i) of this AD still applies to airplanes repaired previously in accordance with paragraph (c), if that repair does not comply with paragraph (h) of this AD. The additional post-repair inspections in paragraph (i) are necessary to ensure that the repair provides an adequate level of safety. Operators may request approval of an AMOC or adjustment of the compliance times for this AD as specified in paragraph (m)(1) of this AD. Also, as explained previously, when the future revision to Boeing Alert Service Bulletin 747-53A2429 is available, and we have reviewed and approved it, we may consider requests for approval of the actions in that revision as an AMOC for this AD. We have made no further changes to the final rule in this regard.

A third commenter notes that it has accomplished certain repairs of cracking found during inspections in accordance with paragraphs (a) and (b) of AD 98-09-17, as restated in paragraphs (a) and (b) of the proposed AD. All of these repairs were approved by a Boeing Company DER and some included "terminating action" similar to that found in Boeing Alert Service Bulletin 747-53A2429. The commenter states that these repairs should be included under paragraph (i) of the proposed AD as repairs and modifications that allow inspections in accordance with paragraph (e) of the proposed AD to be deferred for 5,000 flight cycles after installation.

We agree that certain repairs and modifications accomplished previously may warrant a 5,000-flight-cycle compliance time before it is necessary to accomplish the new inspections. However, these repairs and modifications must have been approved under paragraph (c) of the existing AD to ensure that they are adequate to address the unsafe condition. If these repairs have been approved, then they are covered by the provision in paragraph (i) of this AD that provides for a 5,000-flight-cycle compliance time for airplanes on which a repair in accordance with paragraph (c) of this AD was previously accomplished. No change to the final rule is necessary in this regard.

Request To Provide Acceptable Inspection Methods

One commenter notes that paragraph (i) of the proposed AD would require accomplishing inspections of airplanes modified or permanently repaired before the effective date of the AD, in accordance with paragraph (e) of the proposed AD. The commenter states that paragraph (e) does not specify an inspection procedure for floor beams that have been modified or permanently repaired.

We infer that the commenter is requesting that we revise paragraph (i) of this AD to specify a method for inspecting floor beams that have been previously modified or permanently repaired. We do not concur. The inspection methods specified in Figures 1 and 2 of the referenced service bulletin are still adequate for modified or repaired floor beams, provided that paragraph (g) or (h) of this AD, as applicable, is also accomplished, as required by paragraph (i) of this AD. No change to the final rule is necessary in this regard.

Request To Revise Post-Modification/Repair Requirements

One commenter, the airplane manufacturer, requests that we revise paragraph (j) of the proposed AD to refer to post-modification/repair inspections in accordance with Boeing Alert Service Bulletin 747-53A2429, as supplemented by procedures in an attachment submitted by the commenter. The commenter states that this would eliminate the need for paragraphs (j)(1) and (j)(2) of the proposed AD. The commenter also requests that we revise paragraph (k) of the proposed AD to require repair of any cracking found during post-modification/repair inspections to be accomplished in accordance with the procedures specified in the attachment submitted by the commenter.

We partially agree. The original issue of Boeing Alert Service Bulletin 747-53A2429 does not provide detailed instructions for post-modification/repair inspections, nor does it provide acceptable procedures for repairing any cracking found during such inspections. We are reviewing, with the commenter, the supplemental procedures to which the commenter refers. We and the manufacturer agree that the details of its proposal are too complex to include in this AD and operators would be better served by issuing separate service information containing the proposed supplemental procedures. It is likely that the supplemental procedures may be included in a future revision of the

service bulletin. Once a revision to this service bulletin has been issued by the manufacturer, and we have reviewed and approved it, we may consider approving the use of post-modification/repair inspections specified in that revision as an acceptable AMOC for paragraph (j) of this AD. No change to the final rule is necessary in this regard.

Request To Revise Applicability

One commenter requests that we revise the applicability of the proposed AD to make the AD applicable only to airplanes with a nose cargo door. The commenter states that it converts Boeing Model 747-200 series airplanes to a Special Freighter configuration that has only a main deck side cargo door, in accordance with a supplemental type certificate. The commenter questions whether the proposed AD would apply to its converted airplanes.

We acknowledge the commenter's concern but find that no change to the proposed AD is necessary to meet the intent of the commenter's request. The applicability statement of this AD specifies only Model 747-200F and -200C series airplanes. This applicability does not include Boeing Model 747-200 series airplanes that were delivered as passenger airplanes and later converted to the Special Freighter configuration. Airplanes that are converted to a freighter configuration will still be listed as passenger airplanes on the original Type Certificate Data Sheet. Thus, these airplanes are not subject to this AD. No change to the final rule is necessary in this regard.

Explanation of Additional Changes

For clarification, we have revised paragraph (j)(1) of this final rule to add the words "for cracking." We find that this change does not expand the scope of the proposed AD but makes the wording of paragraph (j)(1) consistent with that of paragraph (j)(2) of this final rule.

Since the issuance of the proposed AD, Boeing has received a DOA. We have revised this final rule to delegate the authority to approve an alternative method of compliance for any repair required by this AD to the Authorized Representative for the Boeing DOA Organization rather than the Designated Engineering Representative (DER).

Conclusion

After careful review of the available data, including the comments noted above, we have determined that air safety and the public interest require the adoption of the rule with the changes previously described. We have determined that these changes will neither increase the economic burden on any operator nor increase the scope of the AD.

Changes to 14 CFR Part 39/Effect on the AD

On July 10, 2002, the FAA issued a new version of 14 CFR part 39 (67 FR 47997, July 22, 2002), which governs the FAA's airworthiness directives system. The regulation now includes material that relates to altered products, special flight permits, and AMOCs. Because we have now included this material in part 39, only the office authorized to approve AMOCs is identified in each individual AD. Therefore, Note 1 and paragraph (m) of the proposed AD are not included in this final rule (other paragraphs and notes have been re-identified accordingly), and paragraph (l) of the proposed AD has been revised (and re-identified as paragraph (m)) in this final rule.

Explanation of Change to Cost Impact

We have reviewed the figures we have used over the past several years to calculate AD costs to operators. To account for various inflationary costs in the airline industry, we find it necessary to

increase the labor rate used in these calculations from \$60 per work hour to \$65 per work hour. The cost impact information, below, has been revised to reflect this increase in the specified hourly labor rate.

Cost Impact

There are approximately 81 airplanes of the affected design in the worldwide fleet. We estimate that 23 airplanes of U.S. registry will be affected by this AD.

For airplanes on which the repetitive detailed inspection that is currently required by AD 98-09-17 is accomplished, that inspection takes approximately 1 work hour per airplane, at an average labor rate of \$65 per work hour. Based on these figures, the cost impact of the currently required detailed inspection is estimated to be \$65 per airplane, per inspection cycle.

The high frequency eddy current (HFEC) inspection that is currently required by AD 98-09-17 takes approximately 6 work hours per airplane to accomplish, at an average labor rate of \$65 per work hour. Based on these figures, the cost impact of this currently required inspection on U.S. operators is estimated to be \$8,970, or \$390 per airplane.

The new one-time detailed and HFEC inspections that are required by this AD will take approximately 7 work hours per airplane to accomplish, at an average labor rate of \$65 per work hour. Based on these figures, the cost impact of these new inspections on U.S. operators is estimated to be \$10,465, or \$455 per airplane.

For airplanes subject to the modification that is required by this AD, it will take approximately 172 work hours per airplane to accomplish, at an average labor rate of \$65 per work hour. Required parts will cost approximately \$4,959 per airplane. Based on these figures, the cost impact of this modification is estimated to be \$16,139 per airplane.

For airplanes subject to the repair that is required by this AD, it will take approximately 172 work hours per airplane to accomplish, at an average labor rate of \$65 per work hour. Required parts will cost approximately \$21,646 to \$21,857 per airplane. Based on these figures, the cost impact of this repair is estimated to be \$32,826 to \$33,037 per airplane.

The follow-on repetitive inspections that are required by this AD will take approximately 6 work hours per airplane to accomplish, at an average labor rate of \$65 per work hour. Based on these figures, the cost impact of these new inspections on U.S. operators is estimated to be \$8,970, or \$390 per airplane, per inspection cycle.

The cost impact figures discussed above are based on assumptions that no operator has yet accomplished any of the requirements of this AD action, and that no operator would accomplish those actions in the future if this AD were not adopted. The cost impact figures discussed in AD rulemaking actions represent only the time necessary to perform the specific actions actually required by the AD. These figures typically do not include incidental costs, such as the time required to gain access and close up, planning time, or time necessitated by other administrative actions.

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 Impact

The regulations adopted herein 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. Therefore, it is determined that this final rule does not have federalism implications under Executive Order 13132.

For the reasons discussed above, I certify that this action (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); 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. A final evaluation has been prepared for this action and it is contained in the Rules Docket. A copy of it may be obtained from the Rules Docket at the location provided under the caption ADDRESSES.

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

Adoption of the Amendment

Accordingly, pursuant to the authority delegated to me by the Administrator, the Federal Aviation Administration amends part 39 of the Federal Aviation Regulations (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. Section 39.13 is amended by removing amendment 39-10498 (63 FR 20311, April 24, 1998), and by adding a new airworthiness directive (AD), amendment 39-14046, to read as follows:

AIRWORTHINESS DIRECTIVE



Aircraft Certification Service
Washington, DC

U.S. Department
of Transportation
**Federal Aviation
Administration**

We post ADs on the internet at "www.faa.gov"

The following Airworthiness Directive issued by the Federal Aviation Administration in accordance with the provisions of Title 14 of the Code of Federal Regulations (14 CFR) part 39, applies to an aircraft model of which our records indicate you may be the registered owner. Airworthiness Directives affect aviation safety and are regulations which require immediate attention. You are cautioned that no person may operate an aircraft to which an Airworthiness Directive applies, except in accordance with the requirements of the Airworthiness Directive (reference 14 CFR part 39, subpart 39.3).

2005-07-21 Boeing: Amendment 39-14046. Docket 2001-NM-181-AD. Supersedes AD 98-09-17, Amendment 39-10498.

Applicability

All Model 747-200F and -200C series airplanes, certificated in any category.

Compliance

Required as indicated, unless accomplished previously.

To prevent fatigue cracks in the upper chord and web of upper deck floor beams and the resultant failure of such floor beams; which could result in damage to critical flight control cables and wire bundles that pass through the floor beam, and consequent loss of controllability of the airplane; or which could result in failure of the adjacent fuselage frames and skin, and consequent rapid decompression of the airplane; accomplish the following:

Requirements of AD 98-09-17

Note 1: For the purposes of calculating the compliance threshold and repetitive interval for the actions required by paragraphs (a) and (b) of this AD, "flight cycles" are considered to be flight cycles with a cabin pressure differential greater than 2.0 pounds per square inch (psi).

Repetitive Inspections of Certain Upper Deck Floor Beams

(a) For airplanes that have accumulated less than 18,000 total flight cycles as of May 11, 1998 (the effective date of AD 98-09-17, amendment 39-10498): Prior to the accumulation of 15,000 total flight cycles, or within 250 flight cycles after May 11, 1998, whichever occurs later, inspect the upper chord, web, and strap of the upper deck floor beams at body station (BS) 340 through BS 440 inclusive, and the upper deck floor beams at BS 500 and BS 520, on the right and left sides of the airplane, in accordance with paragraph (a)(1) or (a)(2) of this AD. The inspections shall be accomplished in accordance with Boeing Alert Service Bulletin 747-53A2420, dated March 26, 1998; or Boeing Service Bulletin 747-53A2420, Revision 1, dated January 7, 1999.

(1) Perform a detailed inspection to detect cracks in accordance with Figure 2 of the service bulletin.

(i) Repeat the detailed inspection thereafter at intervals not to exceed 25 flight cycles, until the requirements of paragraph (a)(1)(ii) or (e) of this AD are accomplished.

(ii) Within 500 flight cycles after accomplishment of the initial detailed inspection, accomplish paragraph (a)(2) of this AD.

(2) Perform a one-time open hole high frequency eddy current (HFEC) inspection to detect cracks in accordance with Figure 3 of the service bulletin. Accomplishment of this action constitutes terminating action for the repetitive inspection requirements of paragraph (a)(1)(i) of this AD.

(b) For airplanes that have accumulated 18,000 or more total flight cycles as of May 11, 1998: Within 25 flight cycles after May 11, 1998, inspect the upper chord, web, and strap of the upper deck floor beams at BS 340 through BS 440 inclusive, and the upper deck floor beams at BS 500 and BS 520, on the right and left sides of the airplane, in accordance with paragraph (b)(1) or (b)(2) of this AD. The inspections shall be accomplished in accordance with Boeing Alert Service Bulletin 747-53A2420, dated March 26, 1998; or Boeing Service Bulletin 747-53A2420, Revision 1, dated January 7, 1999.

(1) Perform a detailed inspection to detect cracks in accordance with Figure 2 of the service bulletin.

(i) Repeat the detailed inspection thereafter at intervals not to exceed 25 flight cycles, until the requirements of paragraph (b)(1)(ii) or (e) of this AD are accomplished.

(ii) Within 250 flight cycles after accomplishment of the initial detailed inspection, accomplish paragraph (b)(2) of this AD.

(2) Perform a one-time open hole HFEC inspection to detect cracks in accordance with Figure 3 of the service bulletin. Accomplishment of this action constitutes terminating action for the repetitive inspection requirements of paragraph (b)(1)(i) of this AD.

Repair

(c) If any cracking is found during any inspection required by paragraphs (a) or (b) of this AD, prior to further flight, repair in accordance with a method approved by the Manager, Seattle Aircraft Certification Office (ACO), FAA; or do paragraph (h) of this AD.

New Requirements of This AD

Note 2: For the purposes of this AD, a detailed inspection is defined as: "An intensive visual examination of a specific structural area, system, installation, or assembly to detect damage, failure, or irregularity. Available lighting is normally supplemented with a direct source of good lighting at intensity deemed appropriate by the inspector. Inspection aids such as mirror, magnifying lenses, etc., may be used. Surface cleaning and elaborate access procedures may be required."

Adjustments to Compliance Time: Cabin Differential Pressure

(d) For the purposes of calculating the compliance threshold and repetitive interval for the actions required by paragraphs (e), (h), (i), (j) and (k) of this AD: The number of flight cycles in which cabin differential pressure is at 2.0 psi or less need not be counted when determining the number of flight cycles that have occurred on the airplane, provided that flight cycles with momentary spikes in cabin differential pressure above 2.0 psi are included as full pressure cycles. For this provision to apply, all cabin pressure records must be maintained for each airplane: No fleet-averaging of cabin pressure is allowed.

Detailed and Eddy Current Inspections of Certain Upper Deck Floor Beams

(e) Within 5,000 flight cycles after accomplishing the most recent inspection required by paragraph (a) or (b) of this AD, or within 1,000 flight cycles after the effective date of this AD, whichever is later: Do paragraphs (e)(1) and (e)(2) of this AD, in accordance with the Accomplishment Instructions of Boeing Alert Service Bulletin 747-53A2429, dated March 22, 2001.

Accomplishment of both paragraphs (e)(1) and (e)(2) of this AD constitutes terminating action for the repetitive inspection requirement of paragraph (a)(1)(i) or (b)(1)(i) of this AD, as applicable.

(1) Do a one-time detailed inspection for cracking of the web, upper chord, and strap of the upper deck floor beams at BS 340 through BS 440 inclusive, BS 500, and BS 520, on the right and left sides of the airplane, as specified in Figure 1 of the service bulletin.

(2) Do an open-hole HFEC inspection for cracking of the fastener holes of the web and upper chord of the upper deck floor beams at BS 340 through BS 440 inclusive, BS 500, and BS 520, on the right and left sides of the airplane, as specified in Figure 2 of the service bulletin.

Compliance With Paragraphs (a) or (b) and (e)

(f) Airplanes on which the inspections required by paragraph (e) of this AD are accomplished within the compliance time specified in paragraph (a) or (b) of this AD, as applicable, are not required to be inspected in accordance with paragraph (a) or (b) of this AD, as applicable.

Modification of Upper Deck Floor Beams

(g) If no cracking is found during the inspections required by paragraph (e) of this AD, before further flight after the inspection, except as provided by paragraph (i) of this AD, modify the upper chord of the upper deck floor beams at the locations in Figure 3 of Boeing Alert Service Bulletin 747-53A2429, dated March 22, 2001, in accordance with paragraph (g)(1) or (g)(2) of this AD.

(1) Option 1: Accomplish the modification in accordance with a method approved by the Manager, Seattle ACO, or by an Authorized Representative for the Boeing Delegation Option Authorization (DOA) organization, who has been authorized by the Manager, Seattle ACO, to make those findings. For a modification method to be approved, the modification must meet the certification basis of the airplane, and the approval must specifically refer to this AD. After the modification, perform post-modification inspections in accordance with paragraph (j) of this AD.

(2) Option 2: Accomplish the modification in accordance with the Figure 3 of Boeing Alert Service Bulletin 747-53A2429, dated March 22, 2001, except, where the service bulletin specifies to contact Boeing for appropriate action, modify in accordance with a method approved by the Manager, Seattle ACO, or by an Authorized Representative for the Boeing DOA organization, who has been authorized by the Manager, Seattle ACO, to make those findings. For a modification method to be approved, the modification must meet the certification basis of the airplane, and the approval must specifically refer to this AD. Then, perform post-modification inspections in accordance with paragraph (k) of this AD.

Repair of Upper Deck Floor Beams

(h) If any crack is found during any inspection required by paragraph (a), (b), or (e) of this AD: Before further flight, except as provided by paragraph (i) of this AD, do paragraph (h)(1), (h)(2), or (h)(3) of this AD.

(1) Option 1: Accomplish all actions associated with the time-limited repair, including removing the existing strap; performing HFEC inspections of the chord, web, and angle, as applicable; stop-drilling cracks; trimming the angle and machining the vertical leg of the chord, as applicable; and installing a new strap. Do these actions in accordance with the Accomplishment Instructions of Boeing Service Bulletin 747-53A2420, Revision 1, dated January 7, 1999; except, where the service bulletin specifies to contact Boeing for appropriate action, before further flight, repair in accordance with a method approved by the Manager, Seattle ACO, or by an Authorized Representative for the Boeing DOA organization, who 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. Within 1,500 flight cycles or 18 months after the installation of the time-limited repair, whichever is first, do paragraph (h)(2) or (h)(3) of this AD.

(2) Option 2: Accomplish the permanent repair of the upper deck floor beams at the locations shown in Figures 4 and 5, as applicable, of Boeing Alert Service Bulletin 747-53A2429, dated March 22, 2001, in accordance with a method approved by the Manager, Seattle ACO, or by an Authorized Representative for the Boeing DOA organization, who 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. Then, perform post-repair inspections in accordance with paragraph (j) of this AD.

(3) Option 3: Accomplish the permanent repair of the upper deck floor beams at locations shown in Figure 4 and 5, as applicable, of Boeing Alert Service Bulletin 747-53A2429, dated March 22, 2001, in accordance with the service bulletin. Then, perform post-repair inspections in accordance with paragraph (k) of this AD.

Airplanes Modified or Repaired Previously

(i) For airplanes on which a repair in accordance with paragraph (c) of this AD was accomplished before the effective date of this AD, except a repair that is acceptable for compliance with paragraph (h) of this AD: Within 5,000 flight cycles after installation of such modification or repair, as applicable, inspect in accordance with paragraph (e) of this AD, then do paragraph (g) or (h) of this AD, as applicable.

Repetitive Inspections After Modification or Permanent Repair

(j) For airplanes on which the modification or permanent repair was installed in accordance with paragraph (g)(1) or (h)(2) of this AD, as applicable: Within 15,000 flight cycles after installation of the modification or permanent repair, do paragraph (j)(1) or (j)(2) of this AD, in accordance with a method approved by the Manager, Seattle ACO. For an inspection method to be approved, the approval letter must specifically reference this AD.

(1) Option 1: Do surface HFEC inspections for cracking along the lower edge of the upper chord of the upper deck floor beams at BS 340 through BS 440 inclusive, BS 500, and BS 520, on the right and left sides of the airplane. Repeat the surface HFEC inspections at intervals not to exceed 1,000 flight cycles.

(2) Option 2: Do open-hole HFEC inspections for cracking at fasteners common to the upper chord, reinforcement straps, and body frame of the upper deck floor beams at BS 340 through BS 440 inclusive, BS 500, and BS 520, on the right and left sides of the airplane. Repeat the open-hole HFEC inspections at intervals not to exceed 3,000 flight cycles.

(k) For airplanes on which the modification or permanent repair was installed in accordance with paragraph (g)(2) or (h)(3) of this AD, as applicable: Within 5,000 flight cycles after installation of the modification or permanent repair, do repetitive post-modification/repair inspections of the upper deck floor beams at BS 340 through BS 440 inclusive, BS 500, and BS 520, on the right and left sides of the airplane, in accordance with a method approved by the Manager, Seattle ACO. For an inspection method to be approved, the approval letter must specifically reference this AD.

Repair

(l) If any cracking is found during any inspection required by paragraph (j) or (k) of this AD: Before further flight, repair in accordance with a method approved by the Manager, Seattle ACO, or by an Authorized Representative for the Boeing DOA organization, who 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.

Alternative Methods of Compliance

(m)(1) In accordance with 14 CFR 39.19, the Manager, Seattle ACO, FAA, is authorized to approve alternative methods of compliance (AMOCs) for this AD.

(2) AMOCs approved previously in accordance with AD 98-09-17, amendment 39-10498, are approved as alternative methods of compliance with paragraphs (a), (b), and (c) of this AD.

Incorporation by Reference

(n) Unless otherwise specified in this AD, the actions shall be done in accordance with Boeing Alert Service Bulletin 747-53A2420, dated March 26, 1998; Boeing Service Bulletin 747-53A2420, Revision 1, dated January 7, 1999; and Boeing Alert Service Bulletin 747-53A2429, dated March 22, 2001; as applicable.

(1) The incorporation by reference of Boeing Service Bulletin 747-53A2420, Revision 1, dated January 7, 1999; and Boeing Alert Service Bulletin 747-53A2429, dated March 22, 2001; is approved by the Director of the Federal Register, in accordance with 5 U.S.C. 552(a) and 1 CFR part 51.

(2) The incorporation by reference of Boeing Alert Service Bulletin 747-53A2420, dated March 26, 1998, was approved previously by the Director of the Federal Register as of May 11, 1998 (63 FR 20311, April 24, 1998).

(3) Copies may be obtained from Boeing Commercial Airplanes, P.O. Box 3707, Seattle, Washington 98124-2207. Copies may be inspected at the FAA, Transport Airplane Directorate, 1601 Lind Avenue, SW., Renton, Washington; or 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/code_of_federal_regulations/ibr_locations.html.

Effective Date

(o) This amendment becomes effective on May 16, 2005.

Issued in Renton, Washington, on April 4, 2005.

Kalene C. Yanamura,

Acting Manager, Transport Airplane Directorate, Aircraft Certification Service.

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