

**DEPARTMENT OF TRANSPORTATION****Federal Aviation Administration****14 CFR Part 39**

[Docket No. 97-NM-296-AD; Amendment 39-11085; AD 99-07-03]

RIN 2120-AA64

**Airworthiness Directives; Boeing Model 747 Series Airplanes**

**AGENCY:** Federal Aviation Administration, DOT.

**ACTION:** Final rule.

**SUMMARY:** This amendment adopts a new airworthiness directive (AD), applicable to certain Boeing Model 747 series airplanes, that requires repetitive inspections to detect cracks in the edge frame web and doubler of the number 1 main entry door cutout; and repair, if necessary. This AD also provides for optional terminating action for the repetitive inspections. This amendment is prompted by reports indicating that fatigue cracks were found in the edge frame web and doubler at the door stop number 1 of the number 1 main entry door cutout. The actions specified by this AD are intended to detect and correct such fatigue cracking, which could result in rapid decompression of the airplane.

**DATES:** Effective April 27, 1999.

The incorporation by reference of certain publications listed in the regulations is approved by the Director of the Federal Register as of April 27, 1999.

**ADDRESSES:** The service information referenced in this AD may be obtained from Boeing Commercial Airplane Group, 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; or at the Office of the Federal Register, 800 North Capitol Street, NW., suite 700, Washington, DC.

**FOR FURTHER INFORMATION CONTACT:** Bob Breneman, Aerospace Engineer, Airframe Branch, ANM-120S, FAA, Transport Airplane Directorate, Seattle Aircraft Certification Office, 1601 Lind Avenue, SW., Renton, Washington 98055-4056; telephone (425) 227-2776; fax (425) 227-1181.

**SUPPLEMENTARY INFORMATION:** A proposal to amend part 39 of the Federal Aviation Regulations (14 CFR part 39) to include an airworthiness directive (AD) that is applicable to certain Boeing Model 747 series airplanes was published in the **Federal Register** on

July 15, 1998 (63 FR 38118). That action proposed to require repetitive inspections to detect cracks in the edge frame web and doubler of the number 1 main entry door cutout; and repair, if necessary. That action also proposed to provide for optional terminating action for the repetitive inspections.

**Comments Received**

Interested persons have been afforded an opportunity to participate in the making of this amendment. Due consideration has been given to the comments received.

**Support for the Proposed Rule**

Two commenters support the proposed rule.

**Request to Re-Evaluate Repetitive Inspection Intervals**

One commenter requests that the FAA re-evaluate the repetitive inspection intervals of the proposed AD. The commenter suggests that the FAA give consideration to the expected crack growth rate, so that there is full confidence that crack detection will occur before the cracks are able to cause a rapid decompression failure. The commenter states that the reports discussed in the Discussion section of the proposed AD indicate that in-service loads on the frame are significantly different from those experienced in testing. This difference could be due to repeated door operations, flight loads, and exposure to various other environmental stresses.

The FAA does not concur with the commenter's request to re-evaluate the repetitive inspection intervals. The FAA based the inspection threshold and repetitive inspection intervals upon physical analysis that determined the crack growth rate of the cracked structure, as well as on damage tolerance and residual strength analytical methods that provide conservative predications. The FAA has confidence that accomplishment of the inspection at the defined thresholds and repetitive intervals will provide an acceptable level of safety for the affected airplanes. The FAA considered not only those safety issues in developing an appropriate compliance time for this action, but the recommendations of the manufacturer, the availability of any necessary repair parts, and the practical aspect of accomplishing the required inspection within an interval of time that parallels normal scheduled maintenance for the majority of affected operators. Therefore, the FAA finds that no change to the final rule is necessary.

**Request to Clarify Differential Pressure Adjustment Factor**

One commenter states that flight cycles below 2.0 pounds per square inch (psi) differential pressure should not be counted when determining the number of flight cycles on an airplane. Boeing provided substantiating data that showed flight cycles accumulated at less than 2.0 psi cabin differential pressure has an insignificant effect on fatigue life of the subject structure. From this comment, the FAA infers that the commenter is requesting that a NOTE be added to paragraph (a) of the AD to clarify this point. The FAA concurs. Based on the manufacturer's substantiating data, the FAA has determined that for this specific structure the effect of cabin differential pressure at or below 2.0 psi is insignificant. Therefore, for the purposes of this AD, the cabin differential pressure cycles at or below 2.0 psi may be discounted from the total number of flight cycles of the airplane. The FAA has added a new NOTE to the final rule to clarify this point.

**Explanation of Additional Change**

The FAA has revised paragraph (c) of the final rule to allow repair of any crack in the subject area to be accomplished in accordance with a method approved by the FAA, or in accordance with data meeting the type certification basis of the airplane approved by a Boeing Company Designated Engineering Representative who has been authorized by the FAA to make such findings.

**Conclusion**

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

**Cost Impact**

There are approximately 685 Model 747 series airplanes of the affected design in the worldwide fleet. The FAA estimates that 211 airplanes of U.S. registry will be affected by this AD.

The FAA estimates that 191 airplanes are equipped with a number 1 main entry door on both the left and right sides (Group 1 airplanes), that it will take approximately 2 work hours per airplane to accomplish the required inspection, and that the average labor rate is \$60 per work hour. Based on these figures, the cost impact of the

inspection required by this AD on U.S. operators of these airplanes is estimated to be \$22,920, or \$120 per airplane, per inspection cycle.

The FAA estimates that 20 airplanes are equipped with a number 1 main entry door on the left side only (Group 2 airplanes), that it will take approximately 1 work hour per airplane to accomplish the required inspection, and that the average labor rate is \$60 per work hour. Based on these figures, the cost impact of the inspection required by this AD on U.S. operators of these airplanes is estimated to be \$1,200, or \$60 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.

Should an operator of Group 1 airplanes elect to accomplish the optional terminating action that is provided by this AD action, it would take approximately 40 work hours to accomplish it, at an average labor rate of \$60 per work hour. Based on these figures, the cost impact of this optional terminating action would be \$2,400 per airplane.

Should an operator of Group 2 airplanes elect to accomplish the optional terminating action that is provided by this AD action, it would take approximately 20 work hours to accomplish it, at an average labor rate of \$60 per work hour. Based on these figures, the cost impact of this optional terminating action would be \$1,200 per airplane.

### Regulatory Impact

The regulations adopted herein will not have substantial direct effects 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, in accordance with Executive Order 12612, it is determined that this final rule does not have sufficient federalism implications to warrant the preparation of a Federalism Assessment.

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 adding the following new airworthiness directive:

**99-07-03 Boeing:** Amendment 39-11085.  
Docket 97-NM-296-AD.

**Applicability:** Model 747 series airplanes, line numbers 1 through 685 inclusive, certificated in any category.

**Note 1:** This AD applies to each airplane identified in the preceding applicability provision, regardless of whether it has been modified, altered, or repaired in the area subject to the requirements of this AD. For airplanes that have been modified, altered, or repaired so that the performance of the requirements of this AD is affected, the owner/operator must request approval for an alternative method of compliance in accordance with paragraph (e) of this AD. The request should include an assessment of the effect of the modification, alteration, or repair on the unsafe condition addressed by this AD; and, if the unsafe condition has not been eliminated, the request should include specific proposed actions to address it.

**Compliance:** Required as indicated, unless accomplished previously.

To detect and correct fatigue cracks in the edge frame web and doubler of the number 1 main entry door cutout, which could result in rapid decompression of the airplane, accomplish the following:

#### Inspection

(a) Perform a high frequency eddy current (HFEC) (pencil probe eddy current) inspection to detect cracks in both the aft side of the lower edge frame web and the forward side of the edge frame web doubler at station 488, between stringers 25 and 26 (door stop number 1), of the number 1 main entry door cutout; in accordance with Boeing Alert Service Bulletin 747-53A2414, dated August 7, 1997; at the time specified in paragraph (a)(1), (a)(2), (a)(3), or (a)(4) of this AD, as applicable. For Group 1 airplanes (as

identified in the alert service bulletin), the inspection shall be accomplished on both the left and right sides of the airplane. For Group 2 airplanes (as identified in the alert service bulletin), the inspection shall be accomplished only on the left side of the airplane.

**Note 2:** For the purposes of this AD, it is not necessary to count flight cycles accumulated at 2.0 pounds per square inch (psi) or less cabin differential pressure.

(1) For airplanes that have accumulated less than 16,000 total flight cycles as of the effective date of this AD: Inspect prior to the accumulation of 16,000 total flight cycles, or within 1,500 flight cycles after the effective date of this AD, whichever occurs later.

(2) For airplanes that have accumulated 16,000 or more total flight cycles but less than 20,000 total flight cycles as of the effective date of this AD: Inspect prior to the accumulation of 21,000 total flight cycles, or within 1,500 flight cycles after the effective date of this AD, whichever occurs first.

(3) For airplanes that have accumulated 20,000 or more total flight cycles but less than 25,000 total flight cycles as of the effective date of this AD: Inspect prior to the accumulation of 25,500 total flight cycles, or within 1,000 flight cycles after the effective date of this AD, whichever occurs first.

(4) For airplanes that have accumulated 25,000 or more total flight cycles as of the effective date of this AD: Inspect within 500 flight cycles after the effective date of this AD.

#### Repetitive Inspections

(b) If no crack is detected during any inspection required by paragraph (a) of this AD, repeat the HFEC inspection thereafter at intervals not to exceed 3,000 flight cycles.

#### Corrective Action

(c) If any crack is detected during any inspection required by paragraph (a) of this AD, prior to further flight, repair in accordance with Boeing Alert Service Bulletin 747-53A2414, dated August 7, 1997; or in accordance with data meeting the type certification basis of the airplane approved by a Boeing Company Designated Engineering Representative who has been authorized by the Manager, Seattle Aircraft Certification Office (ACO), to make such findings.

**Note 3:** The alert service bulletin emphasizes the importance of performing an open hole HFEC inspection of the inner chord of the frame within 6.0 inches of the web or doubler crack (as applicable), if the inner chord of the frame is not replaced concurrently with the web and doubler repair.

#### Optional Terminating Repair/Modification

(d) Accomplishment of the repair or preventative modification specified in Boeing Alert Service Bulletin 747-53A2414, dated August 7, 1997, constitutes terminating action for the repetitive inspection requirements of this AD for that repaired/modified edge frame web and doubler.

#### Alternative Methods of Compliance

(e) An alternative method of compliance or adjustment of the compliance time that

provides an acceptable level of safety may be used if approved by the Manager, Seattle ACO, FAA, Transport Airplane Directorate. Operators shall submit their requests through an appropriate FAA Principal Maintenance Inspector, who may add comments and then send it to the Manager, Seattle ACO.

**Note 4:** Information concerning the existence of approved alternative methods of compliance with this AD, if any, may be obtained from the Seattle ACO.

#### Special Flight Permits

(f) Special flight permits may be issued in accordance with sections 21.197 and 21.199 of the Federal Aviation Regulations (14 CFR 21.197 and 21.199) to operate the airplane to a location where the requirements of this AD can be accomplished.

#### Incorporation by Reference

(g) Except as provided by paragraphs (c) and (d) of this AD, the actions shall be done in accordance with Boeing Alert Service Bulletin 747-53A2414, dated August 7, 1997. This incorporation by reference was approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. Copies may be obtained from Boeing Commercial Airplane Group, 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 Office of the Federal Register, 800 North Capitol Street, NW., suite 700, Washington, DC.

(h) This amendment becomes effective on April 27, 1999.

Issued in Renton, Washington, on March 15, 1999.

**Darrell M. Pederson,**

*Acting Manager, Transport Airplane Directorate, Aircraft Certification Service.*

[FR Doc. 99-6828 Filed 3-22-99; 8:45 am]

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## DEPARTMENT OF TRANSPORTATION

### Federal Aviation Administration

#### 14 CFR Part 39

[Docket No. 98-SW-46-AD; Amendment 39-11084; AD 99-07-02]

RIN 2120-AA64

#### Airworthiness Directives; Eurocopter France Model AS 332C, L, L1, and L2 Helicopters and Model SA 330F, G, and J Helicopters

**AGENCY:** Federal Aviation Administration, DOT.

**ACTION:** Final rule; request for comments.

**SUMMARY:** This amendment adopts a new airworthiness directive (AD) that is applicable to Eurocopter France Model AS 332C, L, L1, and L2 helicopters and Model SA 330F, G, and J helicopters.

This action requires inspecting the position and bonding of the main rotor blade (blade) leading edge stainless steel protective strips (strips) that were replaced by C.T.I. Dallas. This amendment is prompted by the discovery of a strip that was both mislocated and improperly bonded. The strip had been replaced by C.T.I. Dallas. This condition, if not corrected, could result in failure of the blade and subsequent loss of control of the helicopter.

**DATES:** Effective April 7, 1999.

Comments for inclusion in the Rules Docket must be received on or before May 24, 1999.

**ADDRESSES:** Submit comments in triplicate to the Federal Aviation Administration (FAA), Office of the Regional Counsel, Southwest Region, Attention: Rules Docket No. 98-SW-46-AD, 2601 Meacham Blvd., Room 663, Fort Worth, Texas 76137.

#### FOR FURTHER INFORMATION CONTACT:

Mike Mathias, Aerospace Engineer, FAA, Rotorcraft Directorate, Rotorcraft Standards Staff, 2601 Meacham Blvd., Fort Worth, Texas 76137, telephone (817) 222-5123, fax (817) 222-5961.

**SUPPLEMENTARY INFORMATION:** The Direction Generale De L'Aviation Civile (DGAC), which is the airworthiness authority for France, has notified the FAA that an unsafe condition may exist on Eurocopter France Model AS 332C, L, L1, and L2 helicopters and Model SA 330F, G, and J helicopters. The DGAC advises that, upon examination of a blade that had been repaired by C.T.I. Dallas, anomalies were found in both the installation and the bonding of the strip that could affect aircraft safety.

Eurocopter France has issued Eurocopter France SA 330 Service Bulletin No. 05.85 and Eurocopter France AS 332 Service Bulletin No. 05.00.43, both dated August 27, 1997, which specify checking the position and bonding of the blade strips. The DGAC classified these service bulletins as mandatory and issued AD 97-293-078(AB) and AD 97-292-064(AB), both dated October 8, 1997, in order to assure the continued airworthiness of these helicopters in France.

These helicopter models are manufactured in France and are type certificated for operation in the United States under the provisions of section 21.29 of the Federal Aviation Regulations (14 CFR 21.29) and the applicable bilateral airworthiness agreement. Pursuant to this bilateral airworthiness agreement, the DGAC has kept the FAA informed of the situation described above. The FAA has examined the findings of the DGAC,

reviewed all available information, and determined that AD action is necessary for products of this type design that are certificated for operation in the United States.

The FAA estimates that 5 helicopters will be affected by this AD, that it will take approximately 0.4 work hours to accomplish the initial inspection, 2 work hours to accomplish each of 100 repetitive inspections of each helicopter, and 4 work hours to replace each blade, and that the average labor rate is \$60 per work hour. Required parts will cost approximately \$25,000 per rotor blade. Based on these figures, the total cost impact of the AD on U.S. operators is estimated to be \$85,360, assuming one blade on one helicopter is replaced and that there will be a total of 100 repetitive inspections required on each helicopter by this AD.

Since an unsafe condition has been identified that is likely to exist or develop on other Eurocopter France Model AS 332C, L, L1, and L2 helicopters and Model SA 330F, G, and J helicopters of the same type designs registered in the United States, this AD is being issued to prevent failure of the blade and subsequent loss of control of the helicopter. This AD requires, within 10 hours time-in-service (TIS), inspecting strips that were replaced by C.T.I. Dallas for correct position. If the inspection indicates an incorrectly-positioned strip, the blade must be removed and replaced with an airworthy blade. This AD also requires, within 100 hours TIS, and thereafter at intervals not to exceed 100 hours TIS, inspecting the strips for proper bonding. The actions are required to be accomplished in accordance with the service bulletins described previously. The short compliance time involved is required because the previously described critical unsafe condition can adversely affect the controllability of the helicopter. Therefore, inspecting the position and bonding of the strips is required prior to further flight, and this AD must be issued immediately.

Since a situation exists that requires the immediate adoption of this regulation, it is found that notice and opportunity for prior public comment hereon are impracticable, and that good cause exists for making this amendment effective in less than 30 days.

#### Comments Invited

Although this action is in the form of a final rule that involves requirements affecting flight safety and, thus, was not preceded by notice and an opportunity for public comment, comments are invited on this rule. Interested persons are invited to comment on this rule by