

Airworthiness Directive

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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39 [60 FR 33336 NO. 124 6/28/95]

Docket No. 94-NM-208-AD; Amendment 39-9287; **AD 95-13-07**

Airworthiness Directives; Boeing Model 747 Series Airplanes
PDF Copy (If Available):

▼ Preamble Information

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 modification of the nacelle strut and wing structure, inspections and checks to detect discrepancies, and correction of discrepancies. This amendment is prompted by the development of a modification of the strut and wing structure that improves the damage tolerance capability and durability of the strut-to-wing attachments, and reduces reliance on non-routine inspections of those attachments. The actions specified by this AD are intended to prevent failure of the strut and subsequent loss of the engine.

DATES: Effective July 28, 1995.

The incorporation by reference of certain publications listed in the regulations is approved by the Director of the Federal Register as of July 28, 1995.

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: Tim Backman, Aerospace Engineer, Airframe Branch, ANM-120S, FAA, Transport Airplane Directorate, Seattle Aircraft Certification Office, 1601 Lind Avenue, SW., Renton, Washington 98055-4056; telephone (206) 227-2776; fax (206) 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 January 3, 1995 (60 FR 66). That action proposed to require modification of the nacelle strut and wing structure, inspections and checks to detect discrepancies in the adjacent structure, and correction of discrepancies.

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

Two commenters support the proposed rule.

One commenter notes that the description of the unsafe condition that appeared in the Discussion section of the preamble to the notice refers to "the structural fail-safe capability of the strut-to-wing attachment." The commenter states that this description is inaccurate since it implies that the strut-to-wing attachment is inadequate. The commenter suggests that a more accurate description would be "damage tolerance capability of the strut-to-wing attachment." The FAA acknowledges that the commenter's wording is more accurate. The pertinent wording in the preamble to the final rule has been revised to reflect this change. Furthermore, the FAA considers that the new structure of the strut meets the damage tolerance requirements of amendment 45 of section 25.571, "Damage--tolerance and fatigue evaluation of structure," of the Federal Aviation Regulations (14 CFR 25.571, amendment 45), which provides an even higher level of safety than simply fail-safe requirements.

This same commenter provides further information to describe the purpose of the proposed modification of the nacelle strut and wing structure. This commenter suggests that the rule should specify that the modification not only significantly improves the load-carrying and durability of the strut-to-wing attachments, but "reduces the reliance on non-routine inspections," as well. The FAA concurs with this suggestion and has revised the Summary section of the preamble to the final rule to include relevant wording.

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.

There are approximately 145 Model 747 series airplanes equipped with General Electric Model CF6-45 or -50 series engines or Pratt & Whitney Model JT9D-70 series engines of the affected design in the worldwide fleet. The FAA estimates that 12 airplanes of U.S. registry will be affected by this AD.

The full strut modification required by this AD will take as many as 6,600 to 7,151 work hours to accomplish, depending upon the configuration of the airplane. The manufacturer will incur the cost of labor, on a pro-rated basis, with 20 years being the expected life of these airplanes. The total cost impact of this AD on U.S. operators is based on the median age for the fleet of Model 747 series airplanes equipped with General Electric Model CF6-45 or -50 series engines or Pratt & Whitney Model JT9D-70 series engines, which is estimated to be 15 years. The average labor rate is estimated to be \$60 per work hour. Required parts will be supplied by the manufacturer at no cost to the operator. Based on these figures, the cost impact of this AD on U.S. operators is estimated to be between \$3,564,000 (\$297,000 per airplane) and \$3,861,540 (\$321,795 per airplane).

This cost impact figure does not reflect the cost of the terminating actions described in the service bulletins listed in paragraph I.C., Table 2, "Prior or Concurrent Service Bulletins," on page 7 of Boeing Alert Service Bulletin 747-54A2158, dated November 30, 1994, that are required to be accomplished prior to or concurrently with the modification of the nacelle strut and wing structure. Since some operators may have accomplished certain modifications on some or all of the airplanes in its fleet, while other operators may not have accomplished any of the modifications on any of the airplanes in its fleet, the FAA is unable to provide a reasonable estimate of the cost of accomplishing the terminating actions described in the service bulletins listed in Table 2 of the Boeing alert service bulletin.

The cost impact figure discussed above is 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. However, the FAA is aware that some operators have already installed the strut modification that is required by this AD; therefore, the future economic cost impact of the this rule on U.S. operators is reduced by that amount.

The FAA recognizes that the obligation to maintain aircraft in an airworthy condition is vital, but sometimes expensive. Because AD's require specific actions to address specific unsafe conditions, they appear to impose costs that would not otherwise be borne by operators. However, because of the general obligation of operators to maintain aircraft in an airworthy condition, this appearance is deceptive. Attributing those costs solely to the issuance of this AD is unrealistic because, in the interest of maintaining safe aircraft, prudent operators would accomplish the required actions even if they were not required to do so by the AD.

A full cost-benefit analysis has not been accomplished for this AD. As a matter of law, in order to be airworthy, an aircraft must conform to its type design and be in a condition for safe operation. The type design is approved only after the FAA makes a determination that it complies with all applicable airworthiness requirements. In adopting and maintaining those requirements, the FAA has already made the determination that they establish a level of safety that is cost-

beneficial. When the FAA, as in this AD, makes a finding of an unsafe condition, this means that the original cost-beneficial level of safety is no longer being achieved and that the required actions are necessary to restore that level of safety. Because this level of safety has already been determined to be cost-beneficial, a full cost-benefit analysis for this AD would be redundant and unnecessary.

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. App. 1354(a), 1421 and 1423; 49 U.S.C. 106(g); and 14 CFR 11.89. § 39.13 - [Amended]
2. Section 39.13 is amended by adding the following new airworthiness directive:

▼ Regulatory Information

95-13-07 BOEING: Amendment 39-9287. Docket 94-NM-208-AD.

Applicability: Model 747 series airplanes, equipped with General Electric Model CF6-45 or -50 series engines, or Pratt & Whitney Model JT9D-70 series engines, 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 use the authority provided in paragraph (d) of this AD to request approval from the FAA. This approval may address either no action, if the current configuration eliminates the unsafe condition; or different actions necessary to address the unsafe condition described in this AD. Such a request should include an assessment of the effect of the changed configuration

on the unsafe condition addressed by this AD. In no case does the presence of any modification, alteration, or repair remove any airplane from the applicability of this AD.

Compliance: Required as indicated, unless accomplished previously.

To prevent failure of the strut and subsequent loss of the engine, accomplish the following:

(a) Accomplish the modification of the nacelle strut and wing structure in accordance with Boeing Alert Service Bulletin 747-54A2158, dated November 30, 1994, within 56 months after the effective date of this AD. All of the terminating actions described in the service bulletins listed in paragraph I.C., Table 2, "Prior or Concurrent Service Bulletins," on page 7 of Boeing Alert Service Bulletin 747-54A2158, dated November 30, 1994, must be accomplished in accordance with those service bulletins prior to, or concurrently with, the accomplishment of the modification of the nacelle strut and wing structure required by this paragraph.

(b) Perform the inspections and checks specified in paragraph III, NOTES 8, 9, 10, and 11 of the Accomplishment Instructions on page 129 of Boeing Alert Service Bulletin 747-54A2158, dated November 30, 1994, concurrently with the modification of the nacelle strut and wing structure required by paragraph (a) of this AD. Prior to further flight, correct any discrepancies found in accordance with the alert service bulletin.

(c) Accomplishment of the modification of the nacelle strut and wing structure in accordance with Boeing Alert Service Bulletin 747-54A2158, dated November 30, 1994, constitutes terminating action for the inspections required by the following AD's:

Amendment Federal Register Date of
AD Number Number Citation Publication

94-22-08 39-9057 59 FR 58761 November 15, 1994
93-17-07 39-8678 58 FR 45827 August 31, 1993 •
93-03-14 39-8518 58 FR 14513 March 18, 1993
92-24-51 39-8439 57 FR 60118 December 18, 1992
90-20-20 39-6725 55 FR 37859 September 14, 1990
89-07-15 39-6167 54 FR 11693 March 22, 1989
87-04-13 R1 39-5836 53 FR 2005 January 26, 1988
86-23-01 39-5450 51 FR 37712 October 24, 1986
86-08-03 39-5289 51 FR 12836 April 16, 1986
86-07-06 39-5270 51 FR 10821 March 31, 1986
86-05-11 R1 39-5334 51 FR 21900 June 17, 1986
80-08-02 39-3738 45 FR 24450 April 10, 1980
79-17-07 39-3533 44 FR 50033 August 27, 1979

(d) 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 Aircraft Certification Office (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 2: Information concerning the existence of approved alternative methods of compliance with this AD, if any, may be obtained from the Seattle ACO.

(e) 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.

(f) The modification, inspections, checks, and correction of discrepancies shall be done in accordance with Boeing Alert Service Bulletin 747-54A2158, dated November 30, 1994. 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.

(g) This amendment becomes effective on July 28, 1995.

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▼ Comments

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