

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39 [60 FR 66870 12/27/95]

Docket No. 95-NM-246-AD; Amendment 39-9469; AD 95-26-11

Lockheed Model L-1011-385 Series Airplanes

AGENCY: Federal Aviation Administration, DOT

ACTION: Final Rule; Request for Comments

SUMMARY: This amendment supersedes an existing airworthiness directive (AD), applicable to all Lockheed Model L-1011-385 series airplanes, that currently requires visual inspections to detect cracking of the fittings that attach the aft pressure bulkhead to the fuselage stringers. That AD also currently requires replacement of cracked fittings, and repair of adjacent structure if found to be cracked. This amendment requires new repetitive inspections to detect cracking of the fittings and of the splice tab of the aft pressure bulkhead, and corrective actions, if necessary. This amendment is prompted by the results of the visual inspections performed in accordance with the existing AD, which indicate that the visual inspection is inadequate to detect fatigue cracking. The actions specified in this AD are intended to prevent fatigue cracking of the aft pressure bulkhead, which could lead to failure of the end fittings and splice tabs, and subsequent rapid decompression of the airplane during flight.

DATES: Effective January 11, 1996.

The incorporation by reference of certain publications listed in the regulations is approved by the Director of the Federal Register as of January 11, 1996.

Comments for inclusion in the Rules Docket must be received on or before February 26, 1996.

ADDRESSES: Submit comments in triplicate to the Federal Aviation Administration (FAA), Transport Airplane Directorate, ANM-103, Attention: Rules Docket No. 95-NM-246-AD, 1601 Lind Avenue, SW., Renton, Washington 98055-4056.

The service information referenced in this AD may be obtained from Lockheed Aeronautical Systems Support Company, Field Support Department, Dept. 693, Zone 0755, 2251 Lake Park Drive, Smyrna, Georgia 30080. This information may be examined at the FAA, Transport Airplane Directorate, 1601 Lind Avenue, SW., Renton, Washington; or at the FAA, Atlanta Aircraft Certification Office, Small Airplane Directorate, Campus Building, 1701 Columbia Avenue, Suite 2-160, College Park, Georgia; or at the Office of the Federal Register, 800 North Capitol Street, NW., suite 700, Washington, DC.

FOR FURTHER INFORMATION CONTACT: Thomas Peters, Aerospace Engineer, Systems and Flight Test Branch, ACE-116A, FAA, Atlanta Aircraft Certification Office, Small

Airplane Directorate, Campus Building, 1701 Columbia Avenue, Suite 2-160, College Park, Georgia; telephone (404) 305-7367; fax (404) 305-7348.

SUPPLEMENTARY INFORMATION: On September 6, 1995, the FAA issued AD 95-18-52, amendment 39-9366 (60 FR 47465, September 13, 1995), which is applicable to all Lockheed Model L-1011-385 series airplanes. That AD requires repetitive detailed visual inspections to detect cracking of the fittings that attach the aft pressure bulkhead to the fuselage stringers at stringers 1 through 10 and at stringers 64 through 56, and various follow-on actions. That action was prompted by reports of cracks found in these fittings. The actions required by that AD are intended to prevent fatigue cracking that can lead to failure of the fittings that attach the aft pressure bulkhead to the fuselage stringer, and subsequent rapid decompression of the airplane during flight.

The FAA has reviewed the findings from the visual inspections performed in accordance with AD 95-18-52, and from eddy current inspections performed voluntarily by an operator. The eddy current inspections revealed findings of cracks in the end fittings; these same fittings had been inspected previously using the visual inspection technique required by the existing AD and this cracking was identified. In light of these findings, the FAA has determined that the currently required visual inspections are inadequate to detect all fatigue cracking. Such fatigue cracking, if not detected and corrected in a timely manner, could lead to failure of the fittings and splice tabs of the aft pressure bulkhead, and subsequently could result in rapid decompression of the airplane during flight.

The FAA has reviewed and approved Lockheed L-1011 Service Bulletin 093-53-105, Revision 1, dated November 17, 1995, which describes procedures for:

1. Repetitive eddy current surface scan (ECSS) inspections to detect cracking of the end fittings that attach the aft pressure bulkhead to the fuselage stringers at stringers 1 through 14 (right side) and at stringers 52 through 64 (left side);
2. Repetitive ECSS inspections to detect cracking of the lower (or inner) surface of the upper bonded splice tab of the bulkhead assembly at stringers 1 through 14 and at stringers 52 through 64.
3. If any end fitting is found cracked, replacement of a fitting with a new fitting without pilot holes, rework of the fitting, and various follow-on actions (i.e., bolt hole eddy current, ECSS, and borescope inspections; and repair) of the inner and outer tee caps; and
4. A bolt hole eddy current inspection to detect cracking of the forward flange of the inner tee cap, if any fastener is found cracked; and repair, if necessary.

Accomplishment of the ECSS inspections described in this service bulletin would eliminate the need for the repetitive visual inspections.

Since an unsafe condition has been identified that is likely to exist or develop on other airplanes of this same type design, this AD supersedes AD 95-18-52 to continue to require repetitive detailed visual inspections to detect cracking of the fittings that attach the aft pressure bulkhead to the fuselage stringers at stringers 1 through 10 (right side) and at stringers 56 through 64 (left side). This AD adds a requirement to conduct repetitive ECSS inspections to detect cracking of

the end fittings and of the splice tab at stringers 1 through 14 (right side) and at stringers 52 through 64 (left side) of the aft pressure bulkhead, and corrective actions, if necessary.

Once the ECSS inspections are initiated, the repetitive visual inspection requirements of this AD are terminated.

The previous requirement of AD 95-18-52 to submit a report of inspection findings to the FAA has been deleted from this AD.

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 submitting such written data, views, or arguments as they may desire. Communications shall identify the Rules Docket number and be submitted in triplicate to the address specified under the caption "ADDRESSES." All communications received on or before the closing date for comments will be considered, and this rule may be amended in light of the comments received. Factual information that supports the commenter's ideas and suggestions is extremely helpful in evaluating the effectiveness of the AD action and determining whether additional rulemaking action would be needed.

Comments are specifically invited on the overall regulatory, economic, environmental, and energy aspects of the rule that might suggest a need to modify the rule. All comments submitted will be available, both before and after the closing date for comments, in the Rules Docket for examination by interested persons. A report that summarizes each FAA-public contact concerned with the substance of this AD will be filed in the Rules Docket.

Commenters wishing the FAA to acknowledge receipt of their comments submitted in response to this rule must submit a self-addressed, stamped postcard on which the following statement is made: "Comments to Docket Number 95-NM-246-AD." The postcard will be date stamped and returned to the commenter.

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.

The FAA has determined that this regulation is an emergency regulation that must be issued immediately to correct an unsafe condition in aircraft, and that it is not a "significant regulatory action" under Executive Order 12866. It has been determined further that this action involves an emergency regulation under DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979). If it is determined that this emergency regulation otherwise would be significant under DOT Regulatory Policies and Procedures, a final regulatory evaluation will be

prepared and placed in the Rules Docket. A copy of it, if filed, 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 USC 106(g), 40101, 40113, 44701.

§ 39.13 - [Amended]

2. Section 39.13 is amended by removing amendment 39-9366 (60 FR 47465, September 13, 1995), and by adding a new airworthiness directive (AD), amendment 39-9469, to read as follows:

AIRWORTHINESS DIRECTIVE

Aircraft Certification Service
Washington, DC



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

The following Airworthiness Directive issued by the Federal Aviation Administration in accordance with the provisions of Federal Aviation Regulations, 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 FAR Subpart 39.3).

95-26-11 LOCKHEED: Amendment 39-9469. Docket 95-NM-246-AD. Supersedes AD 95-18-52, Amendment 39-9366.

Applicability: All Model L-1011-385 series airplanes, 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 (h) 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 fatigue cracking of the aft pressure bulkhead, which could lead to failure of the end fittings and splice tab, and subsequent rapid decompression of the airplane during flight, accomplish the following:

RESTATEMENT OF ACTIONS REQUIRED BY AD 95-18-52, AMENDMENT 39-9366:

(a) Perform a detailed visual inspection to detect cracking of the fittings that attach the aft pressure bulkhead to the fuselage stringers (hereinafter referred to as "fittings") at stringers 1 through 10 (right side) and at stringers 56 through 64 (left side), at the later of the times specified in either paragraph (a)(1) or (a)(2) of this AD.

(1) Prior to the accumulation of 20,000 total flight cycles; or

(2) Within the next 25 flight cycles or 10 days after September 28, 1995 (the effective date of AD 95-18-52, amendment 39-9366), whichever occurs earlier.

(b) If any cracking is detected in the fitting at either stringer 10 or stringer 56 during the inspection required by paragraph (a) of this AD, prior to further flight, perform a detailed visual inspection to detect cracking of the next adjacent fitting (i.e., at stringer 11 or 55). If cracking is detected in that fitting, prior to further flight, perform a detailed visual inspection to detect cracking of the next adjacent fitting (i.e., at stringer 12 or 54). If cracking is detected in that fitting, prior to further flight, continue to perform detailed visual inspections to detect cracking of the next adjacent fitting(s) until such a fitting is found to be free of cracks.

(c) If any cracked fitting is detected during the inspections required by either paragraph (a) or (b) of this AD, prior to further flight, accomplish the requirements of paragraphs (c)(1) and (c)(2) of this AD.

(1) Replace the cracked fitting with a new fitting, or with a serviceable fitting on which a detailed visual inspection has been performed previously to detect cracking and that has been found to be free of cracks; and

(2) Perform a detailed visual inspection to detect cracking in the radius at the lower end of the vertical leg of the bulkhead T-shaped frame between the stringer locations on either side of the stringer having the cracked fitting. If any cracked T-shaped frame is detected, prior to further flight, repair in accordance with a method approved by the Manager, Atlanta Aircraft Certification Office (ACO), FAA, Small Airplane Directorate.

(d) Repeat the inspections and other necessary actions required by paragraphs (a), (b), and (c) of this AD at intervals not to exceed 1,800 flight cycles or 3,000 flight hours, whichever occurs earlier, until paragraph (e) of this AD is accomplished.

NEW ACTIONS REQUIRED BY THIS AMENDMENT:

(e) Except as provided by paragraph (f) of this AD, prior to the accumulation of 20,000 flight cycles, or within 30 days after the effective date of this AD, whichever occurs later, accomplish the requirements of both paragraphs (e)(1) and (e)(2) of this AD, in accordance with Lockheed L-1011 Service Bulletin 093-53-105, Revision 1, dated November 17, 1995. Repeat the ECSS inspections thereafter at intervals not to exceed 2,500 flight cycles. Accomplishment of the eddy current surface scan (ECSS) inspection constitutes terminating action for the repetitive inspection requirements of paragraph (d) of this AD.

(1) Perform an ECSS inspection to detect cracking of the fittings at stringers 1 through 14 (right side) and at stringers 52 through 64 (left side), in accordance with the service bulletin. Except as provided by paragraph (g) of this AD, if any cracking is detected, prior to further flight, replace the fitting with a new fitting without pilot holes, rework the fitting, and perform various follow-on actions (i.e., bolt hole eddy current, ECSS, and borescope inspections; and repair) of the inner and outer tee caps, in accordance with the service bulletin. And

(2) Perform an ECSS inspection to detect cracking of the lower (or inner) surface of the upper bonded splice tab of the bulkhead assembly at stringers 1 through 14 (right side) and at stringers 52 through 64 (left side), in accordance with the service bulletin.

(i) Except as provided by paragraph (g) of this AD, if any cracking is

detected at the upper bonded splice tab, repair in accordance with a method approved by the Manager, Atlanta ACO, FAA, Small Airplane Directorate.

(ii) Except as provided by paragraph (g) of this AD, if any cracking is detected at a fastener, prior to further flight, perform a bolt hole eddy current (BHEC) inspection to detect cracking of the forward flange of the inner tee cap, in accordance with the service bulletin. If any cracking is detected, prior to further flight, repair in accordance with the service bulletin.

(f) Accomplishment of the initial ECSS inspections required by paragraph (e) of this AD may be deferred to a date within 120 days after the effective date of this AD provided that, in the interim, a visual inspection as specified in paragraph (a) of this AD is accomplished within 30 days after the effective date of this AD and repeated thereafter at intervals not to exceed 50 flight cycles. Once the ECSS inspections begin, the visual inspections may be terminated.

(g) If two or more adjacent fittings on both sides of the cracked fittings or bonded splice tabs/fasteners are determined to be free of cracks by the ECSS inspection required by paragraph (e)(1) and (e)(2) of this AD, repeat the ECSS inspection of the adjacent fittings thereafter at intervals not to exceed 600 flight cycles until the cracked fittings or splice tabs/fasteners are replaced or repaired. Within 2,500 total flight cycles after finding the crack, replace or repair the cracked fitting and/or splice tab/fasteners in accordance with Lockheed L-1011 Service Bulletin 093-53-105, Revision 1, dated November 17, 1995.

(h) 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, Atlanta ACO. Operators shall submit their requests through an appropriate FAA Principal Maintenance Inspector, who may add comments and then send it to the Manager, Atlanta ACO.

NOTE 2: Information concerning the existence of approved alternative methods of compliance with this AD, if any, may be obtained from the Atlanta ACO.

(i) 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.

(j) The actions shall be done in accordance with Lockheed L-1011 Service Bulletin 093-53-105, Revision 1, dated November 17, 1995. 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 Lockheed Aeronautical Systems Support Company, Field Support Department, Dept. 693, Zone 0755, 2251 Lake Park Drive, Smyrna, Georgia 30080. Copies may be inspected at the FAA, Transport Airplane Directorate, 1601 Lind Avenue, SW., Renton, Washington; or at the FAA, Atlanta Aircraft Certification Office, Small Airplane Directorate, Campus Building, 1701 Columbia Avenue, Suite 2-160, College Park, Georgia; or at the Office of the Federal Register, 800 North Capitol Street, NW., suite 700, Washington, DC.

(k) This amendment becomes effective on January 11, 1996.