[4910-13-P]

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2015-1419; Directorate Identifier 2014-NM-183-AD]

RIN 2120-AA64

Airworthiness Directives; Lockheed Martin Corporation/Lockheed Martin Aeronautics Company Airplanes

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Notice of proposed rulemaking (NPRM).

SUMMARY: We propose to adopt a new airworthiness directive (AD) for all Lockheed Martin Corporation/Lockheed Martin Aeronautics Company Model 188 series airplanes. This proposed AD was prompted by an evaluation by the design approval holder (DAH) indicating the left and right lower surface panels of the wings are subject to widespread fatigue damage (WFD). This proposed AD would require repetitive inspections for cracking at these panels, and repair if necessary. The proposed AD would also require a one-time bolt-hole eddy current inspection of all open holes for cracking, repair if necessary, and modification. We are proposing this AD to prevent fatigue cracking of the left and right lower surface panels of the wings, which could result in reduced structural integrity of the airplane.

DATES: We must receive comments on this proposed AD by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

ADDRESSES: You may send comments, using the procedures found in 14 CFR 11.43 and 11.45, by any of the following methods:

• Federal eRulemaking Portal: Go to http://www.regulations.gov. Follow the instructions for submitting comments.

• Fax: 202-493-2251.

• Mail: U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE., Washington, DC 20590.

• Hand Delivery: Deliver to Mail address above between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

For service information identified in this proposed AD, contact Lockheed Martin Corporation/Lockheed Martin Aeronautics Company, Airworthiness Office, Dept. 6A0M, Zone 0252, Column P-58, 86 S. Cobb Drive, Marietta, GA 30063; telephone 770-494-5444; fax 770-494-5445; email ams.portal@lmco.com; Internet http://www.lockheedmartin.com/ams/tools/TechPubs.html. You may view this referenced service information at the FAA, Transport Airplane Directorate, 1601 Lind Avenue SW., Renton, WA. For information on the availability of this material at the FAA, call 425-227-1221.

Examining the AD Docket

You may examine the AD docket on the Internet at http://www.regulations.gov by searching for and locating Docket No. FAA-2015-1419; or in person at the Docket Management Facility between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this proposed AD, the regulatory evaluation, any comments received, and other information. The street address for the Docket Office (phone: 800-647-5527) is in the ADDRESSES section. Comments will be available in the AD docket shortly after receipt.

FOR FURTHER INFORMATION CONTACT: Carl Gray, Aerospace Engineer, Airframe Branch, ACE-117A, FAA, Atlanta Aircraft Certification Office (ACO), 1701

Columbia Avenue, College Park, GA 30337; phone: 404-474-5554; fax: 404-474-5605; email: carl.w.gray@faa.gov.

SUPPLEMENTARY INFORMATION:

Comments Invited

We invite you to send any written relevant data, views, or arguments about this proposal. Send your comments to an address listed under the ADDRESSES section. Include "Docket No. FAA-2015-1419; Directorate Identifier 2014-NM-183-AD" at the beginning of your comments. We specifically invite comments on the overall regulatory, economic, environmental, and energy aspects of this proposed AD. We will consider all comments received by the closing date and may amend this proposed AD because of those comments.

We will post all comments we receive, without change, to http://www.regulations.gov, including any personal information you provide. We will also post a report summarizing each substantive verbal contact we receive about this proposed AD.

Discussion

Structural fatigue damage is progressive. It begins as minute cracks, and those cracks grow under the action of repeated stresses. This can happen because of normal operational conditions and design attributes, or because of isolated situations or incidents such as material defects, poor fabrication quality, or corrosion pits, dings, or scratches. Fatigue damage can occur locally, in small areas or structural design details, or globally. Global fatigue damage is general degradation of large areas of structure with similar structural details and stress levels. Multiple-site damage is global damage that occurs in a large structural element such as a single rivet line of a lap splice joining two large skin panels. Global damage can also occur in multiple elements such as adjacent frames or stringers. Multiple-site-damage and multiple-element-damage cracks are typically too

small initially to be reliably detected with normal inspection methods. Without intervention, these cracks will grow, and eventually compromise the structural integrity of the airplane, in a condition known as WFD. As an airplane ages, WFD will likely occur, and will certainly occur if the airplane is operated long enough without any intervention.

The FAA's WFD rule (75 FR 69746, November 15, 2010) became effective on January 14, 2011. The WFD rule requires certain actions to prevent structural failure due to WFD throughout the operational life of certain existing transport category airplanes and all of these airplanes that will be certificated in the future. For existing and future airplanes subject to the WFD rule, the rule requires that DAHs establish a limit of validity (LOV) of the engineering data that support the structural maintenance program. Operators affected by the WFD rule may not fly an airplane beyond its LOV, unless an extended LOV is approved.

The WFD rule (75 FR 69746, November 15, 2010) does not require identifying and developing maintenance actions if the DAHs can show that such actions are not necessary to prevent WFD before the airplane reaches the LOV. Many LOVs, however, do depend on accomplishment of future maintenance actions. As stated in the WFD rule, any maintenance actions necessary to reach the LOV will be mandated by airworthiness directives through separate rulemaking actions.

In the context of WFD, this action is necessary to enable DAHs to propose LOVs that allow operators the longest operational lives for their airplanes, and still ensure that WFD will not occur. This approach allows for an implementation strategy that provides flexibility to DAHs in determining the timing of service information development (with FAA approval), while providing operators with certainty regarding the LOV applicable to their airplanes.

This proposed AD was prompted by an evaluation by the DAH indicating that the left and right lower surface panels of the wings are subject to WFD. The root cause of

WFD is fatigue cracks manifesting and growing simultaneously at similar structural details and stress levels on the outer wings. Fatigue cracking is increasingly likely as the airplane is being operated and is aging; without intervention, fatigue cracking of the left and right lower surface panels of the wings on the inboard and outboard sides of the buttock line (BL) 65 splice joint could result in reduced structural integrity of the airplane.

Related Service Information under 1 CFR part 51

We reviewed Lockheed Martin Electra Service Bulletin 88/SB-707C, Revision C, dated April 30, 2014. The service information describes procedures for repetitive inspections for cracking of the left and right lower surface panels of the wings on the inboard and outboard sides of the BL 65 splice joint, and repair if necessary. This service information also describes procedures for a one-time bolt-hole eddy current inspection of all open holes for cracking, repair if necessary, and modification of the BL 65 wing root joint. This service information is reasonably available because the interested parties have access to it through their normal course of business or by the means identified in the ADDRESSES section of this NPRM.

Related ADs

This proposed AD is related to AD 81-03-53, Amendment 39-4243 (Docket No. 81-NW-7-AD) (46 FR 52090, October 26, 1981); and AD 81-03-53R1, Amendment 39-4301 (Docket No. 81-NW-97-AD) (47 FR 3347, January 25, 1982); for all Lockheed Model L-188 series airplanes. AD 81-03-53R1 requires inspecting for fuel leakage and fatigue cracks, and replacement, as necessary, of defective parts on the wing lower BL 65 splice joints.

FAA's Determination

We are proposing this AD because we evaluated all the relevant information and determined the unsafe condition described previously is likely to exist or develop in other products of the same type designs.

Proposed AD Requirements

This proposed AD would require accomplishing the actions specified in the service information described previously.

Explanation of Compliance Time

The compliance time for the modification specified in this proposed AD for addressing WFD was established to ensure that discrepant structure is replaced before WFD develops in airplanes. Standard inspection techniques cannot be relied on to detect WFD before it becomes a hazard to flight. We will not grant any extensions of the compliance time to complete any AD-mandated service bulletin related to WFD without extensive new data that would substantiate and clearly warrant such an extension.

Costs of Compliance

We estimate that this proposed AD affects 4 airplanes of U.S. registry.

We estimate the following costs to comply with this proposed AD:

Estimated costs

Action	Labor cost	Parts cost	Cost per product	Cost on U.S. operators
X-ray or ultrasonic inspections	Up to 40 work-hours X $85 per hour = up to $3,400	$0	Up to $3,400	Up to $13,600
Bolt hole inspections	60 work-hours X $85 per hour = $5,100	$0	$5,100	$20,400
Modification	400 work-hours X $85 per hour = $ 34,000	$5,000	$39,000	$156,000

We estimate the following costs to do any necessary repairs that would be required based on the results of the proposed inspections. We have no way of determining the number of aircraft that might need these repairs.

On-condition costs

Action	Labor cost	Parts cost	Cost per product
Repair	500 work-hours X $85 per hour = $42,500	$0	$42,500

Authority for this Rulemaking

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator. Subtitle VII: Aviation Programs, describes in more detail the scope of the Agency's authority.

We are issuing this rulemaking under the authority described in Subtitle VII, Part A, Subpart III, Section 44701: "General requirements." Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

Regulatory Findings

We determined that this proposed AD would not have federalism implications under Executive Order 13132. This proposed AD would not have a substantial direct effect on the States, on the relationship between the national Government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify this proposed regulation:

(1) Is not a "significant regulatory action" under Executive Order 12866,

(2) Is not a "significant rule" under the DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979),

(3) Will not affect intrastate aviation in Alaska, and

(4) Will have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

List of Subjects in 14 CFR Part 39

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

The Proposed Amendment

Accordingly, under the authority delegated to me by the Administrator, the FAA proposes to amend 14 CFR part 39 as follows:

PART 39 - AIRWORTHINESS DIRECTIVES

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

§ 39.13 [Amended]

2. The FAA amends § 39.13 by adding the following new airworthiness directive (AD):

Lockheed Martin Corporation/Lockheed Martin Aeronautics Company: Docket No. FAA-2015-1419; Directorate Identifier 2014-NM-183-AD.

(a) Comments Due Date

We must receive comments by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

(b) Affected ADs

This AD affects AD 81-03-53, Amendment 39-4243 (Docket No. 81-NW-7-AD) (46 FR 52090, October 26, 1981); and AD 81-03-53R1, Amendment 39-4301 (Docket No. 81-NW-97-AD) (47 FR 3347, January 25, 1982).

(c) Applicability

This AD applies to Lockheed Martin Corporation/Lockheed Martin Aeronautics Company Model 188A and 188C airplanes, certificated in any category, serial numbers 1001 and subsequent.

(d) Subject

Air Transport Association (ATA) of America Code 57, Wings.

(e) Unsafe Condition

This AD was prompted by an evaluation by the design approval holder indicating the left and right lower surface panels of the wings are subject to widespread fatigue damage. We are issuing this AD to prevent fatigue cracking of the left and right lower surface panels of the wings on the inboard and outboard sides of the buttock line (BL) 65 splice joint, which could result in reduced structural integrity of the airplane.

(f) Compliance

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

(g) Inspections and Repair

At the later of the times specified in paragraphs (g)(1) and (g)(2) of this AD: Inspect for cracking of the inboard and outboard sides of the lower splice joint at BL 65, using X-ray, ultrasonic, and bolt-hole eddy current inspection techniques, as applicable, and repair any cracking found, in accordance with the Accomplishment Instructions of Lockheed Martin Electra Service Bulletin 88/SB-707C, Revision C, dated April 30, 2014. All applicable repairs must be done before further flight. Repeat the inspections at intervals not to exceed 2,000 flight hours, until the modification required by paragraph (h) of this AD has been done. Accomplishing the inspections required by this

paragraph terminates the inspections required by paragraphs A. and B. of AD 81-03-53, Amendment 39-4243 (Docket No. 81-NW-7-AD) (46 FR 52090, October 26, 1981); and AD 81-03-53R1, Amendment 39-4301 (Docket No. 81-NW-97-AD) (47 FR 3347-01, January 25, 1982).

(1) Before the accumulation of 19,000 total flight hours.

(2) Within 600 flight hours or 365 days after the effective date of this AD, whichever occurs first.

(h) Modification

At the later of the times specified in paragraphs (h)(1) and (h)(2) of this AD: Do a bolt-hole eddy current inspection of all open holes for cracking, repair any cracking found before further flight, and modify the BL 65 wing root lower joint, in accordance with the Accomplishment Instructions of Lockheed Martin Electra Service Bulletin 88/SB-707C, Revision C, dated April 30, 2014. Accomplishing this modification terminates the inspections required by paragraph (g) of this AD.

(1) Before the accumulation of 29,000 total flight hours.

(2) Within 600 flight hours or 365 days after the effective date of this AD, whichever occurs first.

(i) No Reporting Required

Although Lockheed Martin Electra Service Bulletin 88/SB-707C, Revision C, dated April 30, 2014, specifies to submit a report of crack findings, this AD does not include that requirement.

(j) Alternative Methods of Compliance (AMOCs)

(1) The Manager, Atlanta Aircraft Certification Office (ACO), FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. In accordance with 14 CFR 39.19, send your request to your principal inspector or local Flight Standards District Office, as appropriate. If sending information

directly to the manager of the ACO, send it to the attention of the person identified in paragraph (k)(1) of this AD.

(2) Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the local flight standards district office/certificate holding district office.

(k) Related Information

(1) For more information about this AD, contact Carl Gray, Aerospace Engineer, Airframe Branch, ACE-117A, FAA, Atlanta ACO, 1701 Columbia Avenue, College Park, GA 30337; phone: 404-474-5554; fax: 404-474-5605; email: carl.w.gray@faa.gov.

(2) For service information identified in this AD, contact Lockheed Martin Corporation/Lockheed Martin Aeronautics Company, Airworthiness Office, Dept. 6A0M, Zone 0252, Column P-58, 86 S. Cobb Drive, Marietta, GA 30063; telephone 770-494-5444; fax 770-494-5445; email ams.portal@lmco.com; Internet http://www.lockheedmartin.com/ams/tools/TechPubs.html. You may view this service information at the FAA, Transport Airplane Directorate, 1601 Lind Avenue SW., Renton, WA. For information on the availability of this material at the FAA, call 425-227-1221.

Issued in Renton, Washington, on May 14, 2015.

Jeffrey E. Duven,
Manager,
Transport Airplane Directorate,
Aircraft Certification Service.

[FR Doc. 2015-13339 Filed: 6/4/2015 08:45 am; Publication Date: 6/5/2015]