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## **DEPARTMENT OF TRANSPORTATION**

### **Federal Aviation Administration**

#### **14 CFR Part 39**

**[Docket No. FAA-2014-0627; Directorate Identifier 2013-NM-217-AD; Amendment 39-18126; AD 2015-06-08]**

**RIN 2120-AA64**

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

**AGENCY:** Federal Aviation Administration (FAA), DOT.

**ACTION:** Final rule.

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**SUMMARY:** We are superseding Airworthiness Directive (AD) 2011-09-03 for all Lockheed Martin Corporation/Lockheed Martin Aeronautics Company Model 382, 382B, 382E, 382F, and 382G airplanes. AD 2011-09-03 required repetitive eddy current inspections to detect cracks in the center wing upper and lower rainbow fittings, and corrective actions if necessary; and repetitive replacement of rainbow fittings, which would extend the repetitive interval for the next inspection. This new AD requires reduced intervals for inspections of the upper rainbow fittings. This AD was prompted by analysis of in-service cracking, which has shown that a reduction in the inspection intervals is necessary for the upper rainbow fittings. We are issuing this AD to detect and correct fatigue cracking of the upper and lower rainbow fittings on the center wings, which could grow large and lead to the failure of the fitting and a catastrophic failure of the center wing.

**DATES:** This AD is effective May 14, 2015.

The Director of the Federal Register approved the incorporation by reference of a certain publication listed in this AD as of May 14, 2015.

The Director of the Federal Register approved the incorporation by reference of a certain other publication listed in this AD as of May 26, 2011 (76 FR 22311, April 21, 2011).

**ADDRESSES:** 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](mailto: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. It is also available on the Internet at <http://www.regulations.gov> by searching for and locating Docket No. FAA-2014-0627.

## **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-2014-0627; 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 AD, the regulatory evaluation, any comments received, and other information. The address for the Docket Office (phone: 800-647-5527) is Docket Management Facility, U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE., Washington, DC 20590.

**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: 404-474-5606; email: [carl.w.gray@faa.gov](mailto:carl.w.gray@faa.gov).

## **SUPPLEMENTARY INFORMATION:**

### **Discussion**

We issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 to supersede AD 2011-09-03, Amendment 39-16665 (76 FR 22311, April 21, 2011). AD 2011-09-03 applied to all Lockheed Martin Corporation/Lockheed Martin Aeronautics Company Model 382, 382B, 382E, 382F, and 382G airplanes. The NPRM published in the Federal Register on September 17, 2014 (79 FR 55675). The NPRM was prompted by analysis of in-service cracking, which has shown that the initial and repetitive inspection schedules for the upper rainbow fitting need to be revised to reduce the probability of failure until the rainbow fitting is replaced. The NPRM proposed to continue to require repetitive eddy current inspections to detect cracks in the center wing upper and lower rainbow fittings, and corrective actions if necessary; and repetitive replacement of rainbow fittings, which would extend the repetitive interval for the next inspection. This AD reduces compliance times for initial and repetitive inspections of the upper rainbow fitting. We are issuing this AD to detect and correct fatigue cracking of the upper and lower rainbow fittings on the center wings, which could grow large and lead to the failure of the fitting and a catastrophic failure of the center wing.

### **Comments**

We gave the public the opportunity to participate in developing this AD. We received no comments on the NPRM (79 FR 55675, September 17, 2014) or on the determination of the cost to the public.

### **Conclusion**

We reviewed the relevant data and determined that air safety and the public interest require adopting this AD as proposed except for minor editorial changes. We have determined that these minor changes:

- Are consistent with the intent that was proposed in the NPRM (79 FR 55675, September 17, 2014) for correcting the unsafe condition; and
- Do not add any additional burden upon the public than was already proposed in the NPRM (79 FR 55675, September 17, 2014).

## Related Service Information Under 1 CFR Part 51

We reviewed Lockheed Martin Aeronautics Company Service Bulletin 382-57-82, Revision 6, including Appendixes A, B, and C, dated July 11, 2013. The service information describes procedures for repetitive eddy current inspections of the upper and lower rainbow fittings of the center wing; repetitive replacement of the upper and lower rainbow fittings; and related investigative and corrective actions. This service information is reasonably available; see ADDRESSES for ways to access this service information.

### Costs of Compliance

We estimate that this AD affects 14 airplanes of U.S. registry.

We estimate the following costs to comply with this AD:

Estimated Costs				
Action	Labor cost	Parts cost	Cost per product	Cost on U.S. operators
Inspection of upper and lower fitting [retained actions from AD 2011-09-03, Amendment 39-16665 ( <a href="#">76 FR 22311</a> , April 21, 2011)]	20 work-hours × \$85 per hour = \$1,700 per inspection cycle	None	\$1,700, per inspection cycle	\$23,800, per inspection cycle.
Fitting replacement [retained actions from AD 2011-09-03, Amendment 39-16665 ( <a href="#">76 FR 22311</a> , April 21, 2011)]	2,438 work-hours × \$85 per hour = \$207,230 per replacement	\$40,000	\$247,230, per replacement	\$3,461,220, per replacement.

This AD reduces the compliance times for the upper rainbow fitting inspections and adds no additional economic burden.

### 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 have determined that this AD will not have federalism implications under Executive Order 13132. This AD 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.

For the reasons discussed above, I certify that this AD:

(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),

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

(4) 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.

### **List of Subjects in 14 CFR Part 39**

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

### **Adoption of the Amendment**

Accordingly, under the authority delegated to me by the Administrator, the FAA amends 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 removing Airworthiness Directive (AD) 2011-09-03, Amendment 39-16665 (76 FR 22311, April 21, 2011), and adding the following new AD:



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**2015-06-08 Lockheed Martin Corporation/Lockheed Martin Aeronautics Company:**  
Amendment 39-18126; Docket No. FAA-2014-0627; Directorate Identifier 2013-NM-217-AD.

**(a) Effective Date**

This AD is effective May 14, 2015.

**(b) Affected ADs**

This AD replaces AD 2011-09-03, Amendment 39-16665 (76 FR 22311, April 21, 2011).

**(c) Applicability**

This AD applies to all Lockheed Martin Corporation/Lockheed Martin Aeronautics Company Model 382, 382B, 382E, 382F, and 382G airplanes, certificated in any category.

**(d) Subject**

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

**(e) Unsafe Condition**

This AD was prompted by an analysis of in-service cracking that has shown that the rainbow fittings are susceptible to multiple site fatigue damage. We are issuing this AD to detect and correct fatigue cracking of the upper and lower rainbow fittings on the center wings, which could grow large and lead to the failure of the fitting and a catastrophic failure of the center wing.

**(f) Compliance**

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

**(g) Retained Initial Inspections**

This paragraph restates the requirements of paragraph (g) of AD 2011-09-03, Amendment 39-16665 (76 FR 22311, April 21, 2011), with revised service information. Except as required by paragraph (m) of this AD, at the later of the times specified in paragraphs (g)(1) and (g)(2) of this AD: Do eddy current inspections to detect cracking of the center wing upper and lower rainbow fittings on the left and right side of the airplane. Do the actions in accordance with the Accomplishment Instructions of Lockheed Service Bulletin 382-57-82, Revision 4, including Appendixes A and B, dated May 20, 2009; or Lockheed Martin Aeronautics Company Service Bulletin 382-57-82, Revision 6, including Appendixes A and B, dated July 11, 2013. If any crack is found during the inspections required by this paragraph, before further flight, do the actions required by paragraph (k) of this AD. Doing the requirements of paragraph (m) of this AD terminates the requirements of this paragraph for the affected upper rainbow fitting only. As of the effective date of this AD, only use Lockheed Martin Aeronautics Company Service Bulletin 382-57-82, Revision 6,

including Appendixes A and B, dated July 11, 2013, for accomplishing the actions specified in this paragraph.

(1) Before the accumulation of 15,000 total flight hours on the rainbow fitting.

(2) Within 365 days or 600 flight hours on the rainbow fitting after May 26, 2011, (the effective date of AD 2011-09-03, Amendment 39-16665 (76 FR 22311, April 21, 2011)), whichever occurs first.

#### **(h) Retained Repetitive Inspection Schedule**

This paragraph restates the requirements of paragraph (h) of AD 2011-09-03, Amendment 39-16665 (76 FR 22311, April 21, 2011), with a new exception. Except as required by paragraph (n) of this AD, repeat the inspection required by paragraph (g) of this AD at intervals not to exceed 3,600 flight hours on the center wing, until the rainbow fitting has accumulated 30,000 total flight hours. If any crack is found during the inspections required by this paragraph, before further flight, do the actions required by paragraph (k) of this AD. Doing the requirements of paragraph (n) of this AD terminates the requirements of this paragraph for the affected upper rainbow fitting only.

#### **(i) Retained Rainbow Fitting Replacements**

This paragraph restates the requirements of paragraph (i) of AD 2011-09-03, Amendment 39-16665 (76 FR 22311, April 21, 2011), with revised service information. Before the accumulation of 30,000 flight hours on the rainbow fitting, or within 600 flight hours after May 26, 2011, (the effective date of AD 2011-09-03, Amendment 39-16665 (76 FR 22311, April 21, 2011)), whichever occurs later: Replace the rainbow fitting with a new rainbow fitting, do all related investigative actions, and do all applicable corrective actions, in accordance with paragraph 2.C. of the Accomplishment Instructions of Lockheed Service Bulletin 382-57-82, Revision 4, including Appendix C, dated May 20, 2009, except as required by paragraph (l) of this AD; or Lockheed Martin Aeronautics Company Service Bulletin 382-57-82, Revision 6, including Appendix C, dated July 11, 2013, except as required by paragraph (l) of this AD. Replace the rainbow fitting thereafter at intervals not to exceed 30,000 flight hours. As of the effective date of this AD, only use Lockheed Martin Aeronautics Company Service Bulletin 382-57-82, Revision 6, including Appendix C, dated July 11, 2013, for accomplishing the actions specified in this paragraph.

#### **(j) Retained Post-Replacement Repetitive Inspections**

This paragraph restates the requirements of paragraph (j) of AD 2011-09-03, Amendment 39-16665 (76 FR 22311, April 21, 2011), with a new exception. For upper and lower rainbow fittings replaced in accordance with paragraph (i) or (k) of this AD: Except as required by paragraph (o) of this AD, do the eddy current inspections specified in paragraph (g) of this AD within 15,000 flight hours after doing the replacement and repeat the eddy current inspections specified in paragraph (h) of this AD thereafter at intervals not to exceed 3,600 flight hours until the rainbow fittings are replaced in accordance with paragraph (i) or (k) of this AD. Doing the requirements of paragraph (o) of this AD terminates the requirements of this paragraph for the affected upper rainbow fitting only.

#### **(k) Retained Replacement, Related Investigative Actions, and Corrective Actions**

This paragraph restates the requirements of paragraph (k) of AD 2011-09-03, Amendment 39-16665 (76 FR 22311, April 21, 2011), with revised service information and revised references to inspection paragraphs. If, during any inspection required by paragraph (g), (h), (m), or (n) of this AD, any crack is detected in the rainbow fitting, before further flight, replace the rainbow fitting with a new rainbow fitting, do all related investigative actions, and do all applicable corrective actions, in accordance with Paragraph 2.C. of the Accomplishment Instructions of Lockheed Service Bulletin

382-57-82, Revision 4, including Appendix C, dated May 20, 2009, except as provided by paragraph (l) of this AD; or Lockheed Martin Aeronautics Company Service Bulletin 382-57-82, Revision 6, including Appendix C, dated July 11, 2013, except as required by paragraph (l) of this AD. As of the effective date of this AD, only use Lockheed Martin Aeronautics Company Service Bulletin 382-57-82, Revision 6, including Appendix C, dated July 11, 2013, for accomplishing the actions specified in this paragraph.

**(l) Retained Exceptions to Service Information**

This paragraph restates the requirements of paragraph (l) of AD 2011-09-03, Amendment 39-16665 (76 FR 22311, April 21, 2011), with revised service information. Where Lockheed Service Bulletin 382-57-82, Revision 4, including Appendixes A, B, and C, dated May 20, 2009; or Lockheed Martin Aeronautics Company Service Bulletin 382-57-82, Revision 6, including Appendixes A, B, and C, dated July 11, 2013; specifies to contact the manufacturer for disposition of certain repair conditions or does not specify corrective actions if certain conditions are found, this AD requires repairing those conditions using a method approved by the Manager, Atlanta Aircraft Certification Office (ACO), FAA. For a repair method to be approved by the Manager, Atlanta ACO, as required by this paragraph, the Manager's approval letter must specifically refer to this AD.

**(m) New Requirement: Reduced Initial Compliance Time for Upper Rainbow Fittings**

At the applicable compliance time specified in paragraphs (m)(1) and (m)(2) of this AD, do eddy current inspections to detect cracking of the center wing upper rainbow fittings on the left and right side of the airplane. Do the actions in accordance with the Accomplishment Instructions of Lockheed Martin Aeronautics Company Service Bulletin 382-57-82, Revision 6, including Appendixes A and B, dated July 11, 2013. If any crack is found during the inspections required by this paragraph, before further flight, do the actions required by paragraph (k) of this AD. Doing the requirements of this paragraph terminates the requirements of paragraph (g) of this AD for that upper rainbow fitting only. Repeat the inspection thereafter at the interval required by paragraph (n) of this AD.

(1) For upper rainbow fittings that have accumulated less than 10,000 total flight hours as of the effective date of this AD, the compliance time is at the later of the times in paragraphs (m)(1)(i) and (m)(1)(ii) of this AD.

(i) Before the accumulation of 10,000 total flight hours.

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

(2) For upper rainbow fittings that have accumulated 10,000 total flight hours or more, but less than 15,000 total flight hours as of the effective date of this AD, the compliance time is the earlier of the times specified in paragraphs (m)(2)(i) and (m)(2)(ii) of this AD.

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

(ii) Before the accumulation of 15,000 total flight hours on the rainbow fitting.

**(n) New Requirement: Reduced Repetitive Inspection Intervals**

For upper rainbow fittings on which the requirements of paragraph (g), (h), or (m) of this AD were done, do the next inspection at the earlier of the times required in paragraphs (n)(1) and (n)(2) of this AD. Thereafter, repeat the inspection required by paragraph (m) of this AD at intervals not to exceed 2,500 flight hours until the upper rainbow fitting has accumulated 30,000 total flight hours. If any crack is found during the inspections required by this paragraph, before further flight, do the actions required by paragraph (k) of this AD. Doing an inspection required by this paragraph terminates the requirements of paragraph (h) of this AD for the affected upper rainbow fitting only.

(1) Within 3,600 flight hours since the last inspection done in accordance with paragraph (g), (h), or (m) of this AD, whichever occurs latest.

(2) At the later of the times specified in paragraphs (n)(2)(i) and (n)(2)(ii) of this AD.

(i) Within 2,500 flight hours after the last inspection done in accordance with paragraph (g), (h), or (m) of this AD, whichever occurs latest.

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

**(o) New Requirement: Reduced Post-Replacement Repetitive Inspections**

For upper rainbow fittings replaced in accordance with paragraph (i) or (k) of this AD, do the inspection required by paragraph (m) of this AD at the earlier of the compliance times required in paragraph (o)(1) and (o)(2) of this AD. Repeat the inspection thereafter at intervals not to exceed 2,500 flight hours. Doing the inspections required by this paragraph terminates the requirements of paragraph (j) of this AD for the affected upper rainbow fitting only.

(1) At the later of the times in paragraphs (o)(1)(i) and (o)(1)(ii) of this AD. (i) Within 10,000 total flight hours on the upper rainbow fitting.

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

(2) Within 15,000 total flight hours on the upper rainbow fitting.

**(p) Credit for Previous Actions**

The service information identified in paragraphs (p)(1)(i), (p)(1)(ii), (p)(1)(iii), (p)(2), and (p)(3) is not incorporated by reference in this AD.

(1) This paragraph provides credit for actions required by paragraphs (g), (h), (i), (j), and (k) of this AD, if those actions were performed before the effective date of this AD using the service information identified in paragraphs (p)(1)(i), (p)(1)(ii), and (p)(1)(iii) of this AD.

(i) Lockheed Service Bulletin 382-57-82, including Appendixes A and B, dated December 7, 2004.

(ii) Lockheed Service Bulletin 382-57-82, Revision 1, including Appendixes A and B, dated February 24, 2005.

(iii) Lockheed Service Bulletin 382-57-82, Revision 2, including Appendixes A and B, dated February 15, 2007.

(2) This paragraph restates paragraph (m) of AD 2011-09-03, Amendment 39-16665 (76 FR 22311, April 21, 2011). This paragraph provides credit for actions required by paragraphs (g), (h), (i), (j), and (k) of this AD, if those actions were performed before May 26, 2011 (the effective date of AD 2011-09-03), using Lockheed Service Bulletin 382-57-82, Revision 3, including Appendixes A, B, and C, dated April 25, 2008.

(3) This paragraph provides credit for actions required by paragraphs (g), (h), (i), (j), (k), (m), (n), and (o) of this AD, if those actions were performed before the effective date of this AD using Lockheed Service Bulletin 382-57-82, Revision 5, including Appendixes A, B, and C, dated August 12, 2010.

**(q) Alternative Methods of Compliance (AMOCs)**

(1) The Manager, Atlanta 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 (r)(2) 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.



(3) AMOCs approved for AD 2011-09-03, Amendment 39-16665 (76 FR 22311, April 21, 2011), are approved as AMOCs for the corresponding provisions of this AD.

**(r) Related Information**

(1) For more information about this AD, 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: 404-474-5606; email: carl.w.gray@faa.gov.

(2) For information about AMOCs, contact Hal Horsbough, Aerospace Engineer, Airframe Branch, ACE-117A, FAA, Atlanta Aircraft Certification Office (ACO), 1701 Columbia Avenue, College Park, GA 30337; phone: 404-474-5554; fax: 404-474-5606; email: hal.horsbough@faa.gov.

**(s) Material Incorporated by Reference**

(1) The Director of the Federal Register approved the incorporation by reference (IBR) of the service information listed in this paragraph under 5 U.S.C. 552(a) and 1 CFR part 51.

(2) You must use this service information as applicable to do the actions required by this AD, unless the AD specifies otherwise.

(3) The following service information was approved for IBR on May 14, 2015.

(i) Lockheed Martin Aeronautics Company Service Bulletin 382-57-82, Revision 6, including Appendixes A, B, and C, dated July 11, 2013.

(ii) Reserved.

(4) The following service information was approved for IBR on May 26, 2011 (76 FR 22311, April 21, 2011).

(i) Lockheed Service Bulletin 382-57-82, Revision 4, including Appendixes A, B, and C, dated May 20, 2009.

(ii) Reserved.

(5) 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](mailto:ams.portal@lmco.com); Internet <http://www.lockheedmartin.com/ams/tools/TechPubs.html>.

(6) You may view this service information at 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.

(7) You may view this service information that is incorporated by reference 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/cfr/ibr-locations.html>.

Issued in Renton, Washington, on March 12, 2015.

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