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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2010-1308; Directorate Identifier 2009-NM-069-AD] Amendment 39-16661; AD 2011-08-11]

RIN 2120-AA64

Airworthiness Directives; BAE SYSTEMS (OPERATIONS) LIMITED Model BAe 146 Airplanes, and Model Avro 146-RJ Airplanes

AGENCY: Federal Aviation Administration (FAA), Department of Transportation (DOT).

ACTION: Final rule.

SUMMARY: We are superseding an existing airworthiness directive (AD) that applies to the products listed above. This AD results from mandatory continuing airworthiness information (MCAI) originated by an aviation authority of another country to identify and correct an unsafe condition on an aviation product. The MCAI describes the unsafe condition as:

During the period 2001/2002, skin cracking was found adjacent to the butt joint forward of frame 19 * * *. The cracks emanated from chemically-etched pockets on the internal surface of the skin. * * * [C]racking in multiple adjacent bays * * * could compromise the structural integrity of the fuselage in the event that the multiple cracks joined into a single crack. * * *

During 2008, a further report was received at BAE Systems of a 13.78 inch crack in an AVRO 146-RJ that occurred 514 flight cycles (FC) short of the next 4 000-FC repetitive inspection interval. * * *

* * * * *

We are issuing this AD to require actions to correct the unsafe condition on these products.

DATES: This AD becomes effective May 26, 2011.

The Director of the Federal Register approved the incorporation by reference of a certain publication listed in this AD as of May 26, 2011.

The Director of the Federal Register approved the incorporation by reference of a certain other publication listed in this AD as of August 2, 2005 (70 FR 37022, June 28, 2005).

ADDRESSES: You may examine the AD docket on the Internet at <http://www.regulations.gov> or in person at the U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue, SE., Washington, DC.

FOR FURTHER INFORMATION CONTACT: Todd Thompson, Aerospace Engineer, International Branch, ANM-116, Transport Airplane Directorate, FAA, 1601 Lind Avenue, SW., Renton, Washington 98057-3356; telephone (425) 227-1175; fax (425) 227-1149.

SUPPLEMENTARY INFORMATION:

Discussion

We issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 to include an AD that would apply to the specified products. That NPRM was published in the Federal Register on January 13, 2011 (76 FR 2281), and proposed to supersede AD 2005-13-19, Amendment 39-14156 (70 FR 37022, June 28, 2005). That NPRM proposed to correct an unsafe condition for the specified products. The MCAI states:

During the period 2001/2002, skin cracking was found adjacent to the butt joint forward of frame 19 when unrelated in-service maintenance inspections of the forward fuselage structure were being completed. The cracks emanated from chemically-etched pockets on the internal surface of the skin. The then current MRB [maintenance review board] inspection requirements were not adequate to address cracking in multiple adjacent bays, which could compromise the structural integrity of the fuselage in the event that the multiple cracks joined into a single crack. Investigations resulted in the publication of BAE Systems (Operations) Limited Inspection Service Bulletin (ISB).53-167 in June [27,] 2003, which was made mandatory by CAA UK AD 007-06-2003. The ISB was subsequently re-issued at Revision 1 during 2004 [May 18, 2004] to clarify the inspection requirements and provide an improved inspection procedure. CAA UK AD G-2005-0002 [which corresponds to FAA AD 2005-13-19] (EASA approval number 2005-313) was issued to require accomplishment of the improved inspections.

During 2008, a further report was received at BAE Systems of a 13.78 inch crack in an AVRO 146-RJ that occurred 514 flight cycles (FC) short of the next 4 000-FC repetitive inspection interval. A reassessment of ISB instructions and its supporting data concluded that these original inspection periods were too long, and the method for defining the areas requiring inspection could be open to misinterpretation. In response, BAE Systems has updated the ISB to Revision 2 [dated December 12, 2008] to reduce the inspection intervals, introducing different inspection intervals associated with specific areas of the forward fuselage skins and instructions to inspect additional areas of the forward fuselage skin.

For the reasons described above, this AD retains the requirements of CAA UK AD G-2005-0002, which is superseded, and requires the implementation of revised repetitive inspections, including inspection of additional areas of the forward fuselage skin panels for cracking and follow-on repair action(s), depending on findings.

This AD is [further] revised to acknowledge the issuance of BAE Systems (Operations) Limited ISB.53-167 Revision 3, [dated June 17, 2009] which allows the repetitive inspection intervals to be extended and introduces grace periods to carry out the initial inspections. In addition, this AD at Revision 1 [EASA AD 2009-0070R1,

dated July 2, 2010] acknowledges the issuance of BAE Systems ISB.53-167 Revision 4 [dated June 10, 2010] which corrects the grace period for the initial inspections on BAe 146 aeroplane types.

You may obtain further information by examining the MCAI in the AD docket.

Comments

We gave the public the opportunity to participate in developing this AD. We received no comments on the NPRM or on the determination of the cost to the public.

Conclusion

We reviewed the available data and determined that air safety and the public interest require adopting the AD as proposed.

Differences Between This AD and the MCAI or Service Information

We have reviewed the MCAI and related service information and, in general, agree with their substance. But we might have found it necessary to use different words from those in the MCAI to ensure the AD is clear for U.S. operators and is enforceable. In making these changes, we do not intend to differ substantively from the information provided in the MCAI and related service information.

We might also have required different actions in this AD from those in the MCAI in order to follow our FAA policies. Any such differences are highlighted in a NOTE within the AD.

Costs of Compliance

We estimate that this AD will affect 1 product of U.S. registry.

The actions that are required by AD 2005-13-19 and retained in this AD take 40 work-hours per product, at an average labor rate of \$85 per work hour. Based on these figures, the estimated cost of the currently required actions is \$3,400 per product.

We estimate that it will take about 32 work-hours per product to comply with the new basic requirements of this AD. The average labor rate is \$85 per work-hour. Based on these figures, we estimate the cost of the AD on U.S. operators to be \$2,720, or \$2,720 per product.

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 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 the 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.

We prepared a regulatory evaluation of the estimated costs to comply with this AD and placed it in the AD docket.

Examining the AD Docket

You may examine the AD docket on the Internet at <http://www.regulations.gov>; or in person at the Docket Operations office between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains the NPRM, the regulatory evaluation, any comments received, and other information. The street address for the Docket Operations office (telephone (800) 647-5527) is in the ADDRESSES section. Comments will be available in the AD docket shortly after receipt.

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 Amendment 39-14156 (70 FR 37022, June 28, 2005) and adding the following new AD:



2011-08-11 BAE SYSTEMS (OPERATIONS) LIMITED: Amendment 39-16661; Docket No. FAA-2010-1308; Directorate Identifier 2009-NM-069-AD.

Effective Date

(a) This airworthiness directive (AD) becomes effective May 26, 2011.

Affected ADs

(b) This AD supersedes AD 2005-13-19, Amendment 39-14156.

Applicability

(c) This AD applies to all BAE SYSTEMS (OPERATIONS) LIMITED Model BAe 146-100A, -200A, and -300A airplanes; and Model Avro 146-RJ70A, 146-RJ85A, and 146-RJ100A airplanes; certificated in any category.

Subject

(d) Air Transport Association (ATA) of America Code 53: Fuselage.

Reason

(e) The mandatory continuing airworthiness information (MCAI) states:

During the period 2001/2002, skin cracking was found adjacent to the butt joint forward of frame 19 * * *. The cracks emanated from chemically-etched pockets on the internal surface of the skin. * * * [C]racking in multiple adjacent bays * * * could compromise the structural integrity of the fuselage in the event that the multiple cracks joined into a single crack. * * *

During 2008, a further report was received at BAE Systems of a 13.78 inch crack in an AVRO 146-RJ that occurred 514 flight cycles (FC) short of the next 4 000-FC repetitive inspection interval. * * *

* * * * *

Compliance

(f) You are responsible for having the actions required by this AD performed within the compliance times specified, unless the actions have already been done.

Restatement of Requirements of AD 2005-13-19

Inspections and Repair

(g) Within the applicable compliance time specified in paragraph (g)(1) or (g)(2) of this AD, perform an external eddy current inspection of the forward fuselage skin to detect cracking, in accordance with the Accomplishment Instructions of BAE Systems (Operations) Limited Modification Service Bulletin ISB.53-167, including Appendix 2, Revision 1, dated May 18, 2004. Doing the inspection required by paragraph (j) of this AD terminates the requirements of this paragraph of this AD.

(1) For Model BAe 146 series airplanes: Inspect before the accumulation of 16,000 total landings, or within 4,000 landings after the August 2, 2005 (the effective date of AD 2005-13-19), whichever is later.

(i) For areas where no crack is found, repeat the inspection at intervals not to exceed 8,000 landings.

(ii) For areas where any crack is found, before further flight, perform repairs in accordance with a method approved by the Manager, International Branch, ANM-116, Transport Airplane Directorate, FAA, the Civil Aviation Authority (CAA) (or its delegated agent), or EASA (or its delegated agent). No further inspection of any repaired area is required by paragraph (g) of this AD.

(2) For Model Avro 146-RJ series airplanes: Inspect before the accumulation of 10,000 total landings, or within 2,000 landings after August 2, 2005, whichever is later.

(i) For areas where no crack is found, repeat the inspection at intervals not to exceed 4,000 landings.

(ii) For areas where any crack is found, before further flight, perform repairs in accordance with a method approved by the Manager, International Branch, ANM-116, the CAA (or its delegated agent), or EASA (or its delegated agent). No further inspection of any repaired area is required by paragraph (g) of this AD.

Inspections Accomplished According to Previous Issue of Service Bulletin

(h) Inspections accomplished before August 2, 2005, in accordance with BAE Systems (Operations) Limited Inspection Service Bulletin ISB.53-167, including Appendices 2 and 3, all dated June 27, 2003, are considered acceptable for compliance with the corresponding action specified in paragraph (g) of this AD.

No Reporting Requirement for AD 2005-13-19

(i) Although BAE Systems (Operations) Limited Modification Service Bulletin ISB.53-167, including Appendix 2, Revision 1, dated May 18, 2004, specifies to submit Appendix 1 of that service bulletin with certain information to the manufacturer, this AD does not include that requirement.

New Requirements of This AD

Inspection and Repair—Expanded Area of Forward Fuselage Skin and Reduced Inspection Intervals

(j) For Model BAe 146 airplanes: At the latest of the times specified in paragraphs (j)(1), (j)(2), and (j)(3) of this AD, do an external eddy current inspection of the forward fuselage skin to detect cracking, in accordance with the Accomplishment Instructions of BAE Systems (Operations) Limited Inspection Service Bulletin ISB.53-167, including Appendix 2, Revision 4, dated June 10, 2010. Repeat the inspection thereafter at intervals not to exceed 3,600 flight cycles for areas specified in

Drawings 2, 3, 4, 5, and 7 of BAE Systems (Operations) Limited Inspection Service Bulletin ISB.53-167, including Appendix 2, Revision 4, dated June 10, 2010, and at intervals not to exceed 4,600 flight cycles for areas specified in Drawings 1, 6, 8, and 9 of BAE Systems (Operations) Limited Inspection Service Bulletin ISB.53-167, including Appendix 2, Revision 4, dated June 10, 2010. Doing the inspection required by this paragraph terminates the requirements of paragraph (g) of this AD for that airplane.

- (1) Before the accumulation of 16,000 total flight cycles.
- (2) Within 2,000 flight cycles after the effective date of this AD.
- (3) Within the applicable times specified in paragraphs

(j)(3)(i) and (j)(3)(ii) of this AD.

(i) For areas specified in Drawings 2, 3, 4, 5, and 7 of BAE Systems (Operations) Limited Inspection Service Bulletin ISB.53-167, including Appendix 2, Revision 4, dated June 10, 2010: Within 3,600 flight cycles after the last inspection done in accordance with paragraph (g) of this AD.

(ii) For areas specified in Drawings 1, 6, 8, and 9 of BAE Systems (Operations) Limited Inspection Service Bulletin ISB.53-167, including Appendix 2, Revision 4, dated June 10, 2010: Within 4,600 flight cycles after the last inspection done in accordance with paragraph (g) of this AD.

(k) For Model Avro 146-RJ airplanes: At the latest of the times specified in paragraph (k)(1), (k)(2), and (k)(3) of this AD, do an external eddy current inspection of the forward fuselage skin to detect cracking, in accordance with the Accomplishment Instructions of BAE Systems (Operations) Limited Inspection Service Bulletin ISB.53-167, including Appendix 2, Revision 4, dated June 10, 2010. Repeat the inspection thereafter at intervals not to exceed 2,400 flight cycles for areas specified in Drawings 2, 3, 4, 5, and 7 of BAE Systems (Operations) Limited Inspection Service Bulletin ISB.53-167, including Appendix 2, Revision 4, dated June 10, 2010, and 3,000 flight cycles for areas specified in Drawings 1, 6, 8, and 9 of BAE Systems (Operations) Limited Inspection Service Bulletin ISB.53-167, including Appendix 2, Revision 4, dated June 10, 2010. Doing the inspection required by this paragraph terminates the requirements of paragraph (g) of this AD for that airplane.

- (1) Before the accumulation of 10,000 total flight cycles.
- (2) Within 1,000 flight cycles after the effective date of this AD.
- (3) Within the applicable times specified in paragraphs (k)(3)(i) and (k)(3)(ii) of this AD.

(i) For areas specified in Drawings 2, 3, 4, 5, and 7 of BAE Systems (Operations) Limited Inspection Service Bulletin ISB.53-167, including Appendix 2, Revision 4, dated June 10, 2010: Within 3,600 flight cycles after the last inspection done in accordance with paragraph (g) of this AD.

(ii) For areas specified in Drawings 1, 6, 8, and 9 of BAE Systems (Operations) Limited Inspection Service Bulletin ISB.53-167, including Appendix 2, Revision 4, dated June 10, 2010: Within 4,600 flight cycles after the last inspection done in accordance with paragraph (g) of this AD.

(l) If any cracking is found during any inspection required by paragraph (j) or (k) of this AD, before further flight, accomplish the repair in accordance with a method approved by the FAA or EASA (or its delegated agent). Repair of an airplane in accordance with the requirements of this paragraph of this AD does not constitute terminating action for the inspection requirements of this AD.

Credit for Actions Accomplished in Accordance With Previous Service Information

(m) Inspections done before the effective date of this AD in accordance with BAE Systems (Operations) Limited Inspection Service Bulletin ISB.53-167, including Appendix 2, Revision 2, dated November 17, 2008; or Revision 3, dated June 17, 2009; are acceptable for compliance with the corresponding requirements of paragraphs (j) and (k) of this AD.

FAA AD Differences

Note 1: This AD differs from the MCAI and/or service information as follows: No differences.

Other FAA AD Provisions

(n) The following provisions also apply to this AD:

(1) Alternative Methods of Compliance (AMOCs): The Manager, International Branch, ANM-116, 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 International Branch, send it to Attn: Todd Thompson, Aerospace Engineer, International Branch, ANM-116, Transport Airplane Directorate, FAA, 1601 Lind Avenue, SW., Renton, Washington 98057-3356; telephone (425) 227-1175; fax (425) 227-1149. Information may be e-mailed to: 9-ANM-116-AMOC-REQUESTS@faa.gov. 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. The AMOC approval letter must specifically reference this AD.

(2) Airworthy Product: For any requirement in this AD to obtain corrective actions from a manufacturer or other source, use these actions if they are FAA-approved. Corrective actions are considered FAA-approved if they are approved by the State of Design Authority (or their delegated agent). You are required to assure the product is airworthy before it is returned to service.

Related Information

(o) Refer to MCAI EASA Airworthiness Directive 2009-0070R1, dated July 2, 2010; BAE Systems (Operations) Limited Modification Service Bulletin ISB.53-167, including Appendix 2, Revision 1, dated May 18, 2004; and BAE Systems (Operations) Limited Inspection Service Bulletin ISB.53-167, including Appendix 2, Revision 4, dated June 10, 2010; for related information.

Material Incorporated by Reference

(p) You must use BAE Systems (Operations) Limited Modification Service Bulletin ISB.53-167, including Appendix 2, Revision 1, dated May 18, 2004; and BAE Systems (Operations) Limited Inspection Service Bulletin ISB.53-167, including Appendix 2, Revision 4, dated June 10, 2010; as applicable; to do the actions required by this AD, unless the AD specifies otherwise.

(1) The Director of the Federal Register approved the incorporation by reference of BAE Systems (Operations) Limited Modification Service Bulletin ISB.53-167, including Appendix 2, Revision 4, dated June 10, 2010, under 5 U.S.C. 552(a) and 1 CFR part 51.

(2) The Director of the Federal Register previously approved the incorporation by reference of BAE Systems (Operations) Limited Modification Service Bulletin ISB.53-167, including Appendix 2, Revision 1, dated May 18, 2004, on August 2, 2005 (70 FR 37022, June 28, 2005).

(3) For service information identified in this AD, contact BAE SYSTEMS (OPERATIONS) LIMITED, Customer Information Department, Prestwick International Airport, Ayrshire, KA9 2RW, Scotland, United Kingdom; telephone +44 1292 675207; fax +44 1292 675704; e-mail RApublications@baesystems.com; Internet <http://www.baesystems.com/Businesses/RegionalAircraft/index.htm>.

(4) You may review copies of the service information at the FAA, Transport Airplane Directorate, 1601 Lind Avenue, SW., Renton, Washington. For information on the availability of this material at the FAA, call 425-227-1221.

(5) You may also review copies of the 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/code_of_federal_regulations/ibr_locations.html.

Issued in Renton, Washington, on April 4, 2011.

Ali Bahrami,
Manager, Transport Airplane Directorate,
Aircraft Certification Service.